

**Ethnography of Household cultural feeding practices of children under
five years in rural northern Ghana**

**A thesis submitted to the University of Manchester for the degree of
Doctor of Philosophy
in the Faculty of Biology, Medicine, and Health**

2017

Margaret Wekem Kukeba

**School of Health Sciences
Division of Nursing, Midwifery, and Social Work**

Table of Content

Table of Content	2
List of tables	6
List of figures.....	7
Abstract.....	8
Declaration.....	9
Copyright statement	9
Acknowledgement	10
Dedication	10
The Author	11
Outline of the Thesis.....	12
Chapter 1: Study Background	14
1.1. Overview	14
1.2. Child feeding in context	14
1.3. Status of Ghanaian child feeding	15
1.4. Child malnutrition	15
1.5. Impact of malnutrition.....	19
1.6. Study Problem statement	19
1.7. Purpose of the study.....	20
1.8. Ghana, the setting of this study.....	20
1.9. Geography and climate of the study setting.....	20
1.10. Demographics	21
1.11. Culture of the people.....	22
1.12. Economic structures	25
1.13. Governance of Ghana	26
1.14. Health service organization in Ghana	26
1.15. Child health and Nutrition services in Ghana	27
1.16. Summary	27
Chapter 2: Literature review	29
2.1. Overview of the Chapter	29
2.2. Background and Purpose of the review.....	29
2.3. Characteristics of the review	29
2.4. Review Procedures.....	29
2.5. Inclusive and exclusive criteria	30
2.6. Data Sources	31
2.7. Searching for the literature.....	31

2.8. Search results.....	31
2.9. Excluded studies.....	32
2.10. Included Studies.....	32
2.11. Synthesis of review findings.....	33
2.12. Child feeding practices across sub-Saharan Africa	33
2.13. Child feeding influences.....	39
2.14. Poverty, food insecurity and food production.....	39
2.15. Cultural knowledge vs. public health knowledge	40
2.16. Traditions, values, norms, community socialisation, and child feeding	42
2.17. Authority Figures.....	44
2.18. Summary of Feeding practices.....	45
2.19. Quality assessment of studies.....	46
2.20. Qualitative design articles.....	48
2.21. Mixed method design articles.....	49
2.22. Summary of methodological rigour of studies	50
2.23. Gaps and Conclusion.....	51
2.24. Summary	52
Chapter 3: Methodology.....	54
3.1. Overview	54
3.2. Research aim.....	54
3.3. Rationale for choice of methodology	54
3.4. Child feeding	54
3.5. Culture in Context	55
3.6. Qualitative design	56
3.7. Philosophical framework for qualitative research.....	56
3.8. Constructionism and interpretivism	56
3.9. Symbolic interactionism.....	57
3.10. Ethnographic design.....	58
3.11. Limitations of Ethnography.....	59
3.12. Summary	59
Chapter 4: Methods	61
4.1. Overview	61
4.2. Study aim	61
4.3. Data collection Sites.....	61
4.4. Data sources and study participants.....	62
4.5. Gaining access to the field site.....	63

4.6. Sampling.....	65
4.7. Obtaining consent.....	67
4.8. Data generation	68
4.9. Participant observation.....	69
4.10. Recording field notes	74
4.11. The interviews.....	75
4.12. Analysis of the data.....	80
4.13. Charting the meanings.....	86
4.14. Mapping and interpreting.....	88
4.15. Ethical Considerations.....	89
4.16. Rigour and Trustworthiness of this study	92
4.17. Reflexivity.....	96
4.18. Summary	101
Chapter 5: Introduction to the results	103
5.1. Overview	103
5.2. Participating population.....	103
5.3. Households & Family system	103
5.4. Religion.....	104
5.5. Label of quotes.....	105
5.6. Overview of the themes.....	105
Chapter 6: The community within which children live and eat	109
6.1. Overview	109
6.2. Households.....	109
6.3. Family systems and living arrangements	109
6.4. Household childcare arrangements	111
6.5. Child ownership and the provision of children’s food	112
6.6. Household leadership and decision making in relation to children’s food	114
6.7. ‘Under the trees & around the cooking fire’	116
6.8. Household child food preparation and cooking arrangements.....	117
6.9. Preparation of foodstuffs and food ingredients	Error! Bookmark not defined.
6.10. Social scenes and interactions	122
6.11. Summary	123
Chapter 7: Food insecurity complexities & management strategies.....	125
7.1. Overview	125
7.2. An ethnographic sketch of food insecurity in Akongo’s household	125
7.3. The nature, ironies and complexities of food insecurity	127

7.4. Sources of food	127
7.5. Poverty	129
7.6. Household income	129
7.7. Peasant farming	130
7.8. Types of crops cultivated and the processing and storage of farm produce.....	130
7.9. Sale of farm produce.....	131
7.10. Seasonal rainfall patterns	132
7.11. Trading	132
7.12. Remittances	135
7.13. Household dependency ratios	137
7.14. Daily and seasonal meals gap: The aftermath of food insecurity.....	138
7.15. Planned rationing of children’s food.....	139
7.16. Household Food cooking pattern and frequency	140
7.17. Food sharing & communal cooking	141
7.18. Summary	143
Chapter 8: Discourse on the feeding of children	145
8.1. Overview	145
8.2. Sources of child feeding information.....	145
8.3. The Community’s child feeding notions	147
8.4. Health professionals’ information (HPI) on child feeding.....	164
8.5. Summary	165
Chapter 9: Synthesis and Discussion.....	167
9.1. Overview of the chapter	167
9.2. The taken- for-granted context of child feeding.....	167
9.3. Communal living.....	168
9.4. Child feeding influences.....	170
9.5. Culture.....	170
9.6. Decision making Hierarchy and child feeding	171
9.7. Mother’s place in child feeding decisions.....	171
9.8. A child's diet	173
9.9. A child's feeding pattern	177
9.10. Summary	181
Chapter 10: Concluding analysis and Recommendations.....	183
10.1. Prevailing vs. Recommended IYC dietary advice	183
10.2. Navigating the social complexities: the challenge to mothers	187
10.3. Implications.....	188

10.4. Recommendations	188
10.5. Limitations of my study.....	191
10.6. The study’s strengths	191
10.7. Unique contributions of the study	191
10.8. Conclusion.....	192
References	193
Appendices.....	202
Appendix 1: Snapshot of literature search from Web of science database	202
Appendix 4: Quality assessment scores of papers.....	286
Appendix 5: Participants Information Sheet.....	289
Appendix 6: informed consent.....	291
Appendix 7: data collection topic guide (1)	292
Appendix 8: additional topic guide	295
Appendix 9: Example of interview transcript	296
Appendix 10: Example of observation field notes	303
Appendix 11: examples of codes and indexed data	309
Appendix 12: List of Initial codes	311
Appendix 13: Charting Data and interpretative summary into framework Matrix.....	313
Appendix 14: Lone Worker Risk control measures and Escalation procedure.....	317
Appendix 15: Ethical approval from the University of Manchester	318
Appendix 16: Categories and number of participants.....	319

List of tables

Table 1.1: W H O (2006) Growth Standards.....	16
Table 1.2: Malnutrition cut-off values of public health significance for children under-five years .17	
Table 2.1: Key concepts in the review question and the search terms used	30
Table 2.2: exclusion and inclusion criteria	31
Table 2.3: Summary of Studies by Region Country and Study Design	32
Table 4.1: Sampling techniques & Recruited Households	66
Table 4.2: Universal semantic relationships	84
Table 4.3: Example of indexing of data: Major Theme: Discourses in the feeding of children:	87
Table 4.4: Trustworthiness criteria	93
Table 5.1: Summary Category of Participants'.....	103
Table 5.2: Children by age category.....	103
Table 5.3: Numerical character of Study sample	103
Table 5.4: Distribution of religious groups.....	104
Table 5.5: Summary of findings	107
Table 8.1: Categories of selected food in children’s diets	149

List of figures

Figure 1.1: The trend of undernutrition in under-fives in Ghana	18
Figure 1.2: location of the study setting on the world map	21
Figure 2.1: Flow chart of results, excluded and included papers.	34
Figure 4.1: Data collection Sites.....	62
Figure 4.2: Typical participants and participant observer position	74
Figure 4.3: Interview sites	77
Figure 4.4: initial codes	85
Figure 4.5: my personal characteristics	97
Figure 5.1: Relationship between community, households, and compounds	103
Figure.5.2: Example of households and compounds in the community	106
Figure 6.1: Processing roasted peanuts on local mill.....	118
Figure 6.2: Pounding of dawadawa and fish powder	119
Figure 6.3: preparing guinea corn TZ	121
Figure 7.1: Rice and millet meal.....	127
Figure 7.2: Birds in the nearest market	128
Figure 8.1: scene of animal sources of food in community	150
Figure 8.2: Vegetables on display at the nearest community market.....	151
Figure 8.3: Varieties of plant sources of food	153
Figure 10.1: Typical storage of utensils.....	184

Word count excluding (references and appendices) 79,865

Abstract

The University of Manchester Margaret Wekem Kukeba

An ethnographic study of Household cultural feeding practices of children under five years in rural Northern Ghana

Background:

Appropriate child feeding prevents nutrient deficiencies, diseases, and deaths in children. However, only 13.3% of children aged 6-23 months in Ghana receive the minimum acceptable diet. Thus, undernutrition remains high in rural northern Ghana, especially among under-fives. This is showing no improvement despite economic development and implementation of globally recommended nutrition & feeding interventions. There is limited context specific evidence about child feeding in rural northern Ghana.

Aim:

To examine how culture might impact upon the feeding of children under five years of age in rural northern Ghana.

Methods:

A qualitative ethnographic study was completed between October 2014 and May 2015. Data were collected in a rural Ghanaian community via participant observation and sixty-one ethnographic interviews with mothers, fathers, and grandparents in 15 households, and spiritual leaders are known as "diviners". Themes were developed through inductive analysis of field notes and verbatim transcribed interviews using a framework approach.

Results:

The content of a child's diet and the pattern of feeding were found to be influenced by the community's notion of food, taboos, and beliefs which originated in a traditional African religion. Shared household responsibility for feeding children and the gendered and age related hierarchy of household decision making also influenced child feeding.

Discussion:

This study has shown multifaceted taken-for-granted social and cultural influences on child feeding. Whilst mothers are the main recipients of the official public health nutrition and child feeding advice, the communal structures, living arrangements and social interactions support, enhance, and reinforce the community inclined practices that limit mothers' independent decision making.

Conclusion:

To effect community change and promote uptake of public health nutrition recommendations, a community wide nutrition intervention approach may be more beneficial than the current approach which targets mothers. Furthermore, community and cultural influences must be understood and considered by health professionals if such interventions are to succeed.

Declaration

No portion of the work referred to in the thesis has been submitted in the support of an application for another degree or qualification of this or any University or another institute of learning.

Copyright statement

- I.** The author of this thesis (including any appendices and/or schedules to this thesis) owns the certain copyright or related rights in it (the "Copyright") and s/he has given The University of Manchester certain rights to use such Copyright, including for administrative purposes.
- II.** Copies of this thesis, either in full or in extracts and whether in hard or electronic copy, may be made **only** in accordance with the Copyright, Designs and Patents Act 1988 (as amended) and regulations issued under it or, where appropriate, in accordance with licensing agreements which the University has from time to time. This page must form part of any such copies made.
- III.** The ownership of certain Copyright, patents, designs, trademarks, and other intellectual property (the "Intellectual Property") and any reproductions of copyright works in the thesis, for example graphs and tables ("Reproductions"), which may be described in this thesis, may not be owned by the author, and may be owned by third parties. Such Intellectual Property and Reproductions cannot and must not be made available for use without the prior written permission of the owner(s) of the relevant Intellectual Property and/or Reproductions.
- IV.** Further information on the conditions under which disclosure, publication and commercialisation of this thesis, the Copyright and any Intellectual Property University IP Policy (see <http://documents.manchester.ac.uk/display.aspx?DocID=24420>), in any relevant Thesis restriction declarations deposited in the University Library, The University Library's regulations (<http://www.library.manchester.ac.uk/about/regulations/>) and in The University's policy on Presentation of Theses.

Acknowledgement

I thank almighty God for his grace and Mercies without which, I would not be writing this. His favour in this journey is immeasurable.

I would not have done a PhD without Peter Callery. He was the first to see the potential for a PhD in me and followed it up with scholarship links. Thank you, Peter

To Professor Peter Callery and Dr. Debbie Fallon my supervisors, I say thank you so much for your guidance and direction and especially your patience throughout the journey.

My gratitude also goes to the health directorate of the upper East region of Ghana, the Bongo District Director and Freda, Isaac, and Grace; I appreciate your support in helping me navigate the study community. To all the participants, with whom I have made lifelong relationships, I appreciate your welcome and genuine willingness to participate in my study.

To the UK government, Commonwealth, and DFID, despite my intentions and potential, without your funds, all this would have remained within me. I am very grateful for the funding Eric, Cecilia, Christine, and Caleb, thumbs up to you all Eric, you are exceptional. To my siblings, strategic mama, and extended family, I am indebted to all of you.

Nick and Alison Eastcott, I can't find words to adequately convey my gratitude to you for everything.

God, bless you all.

Dedication

Caleb, Christine & Cecilia

The Author

I am a trained general nurse with a special interest in children's nursing. I currently work as a nursing tutor at the Bolgatanga Nurses training school in Ghana. I was privileged to start my nursing career in challenging settings and at a time of various public health epidemics such as cholera, and cerebrospinal meningitis. During this time the population whose health conditions challenged me most were children. Although I did not get an opportunity to be formally trained as a children's nurse, I have maintained an interest in improving children's health in Ghana. Prior to the PhD, I undertook an MSc in Advanced Nursing which involved a critical analysis of child nutrition in Ghana and this project gave me insight into evidence base practice and highlighted the limited research evidence on child feeding and nutrition in Ghana which then guided my PhD topic.

As a child, I lived in a setting with similar characteristics to the study community. The physical environment and the architecture of my childhood community and the study community are particularly similar. However, I migrated out of this community over thirty years ago when I was a child. I am therefore unable to compare the cultural elements of these communities. I do have some similarities with the participants. I am a northern Ghanaian, a mother, live in an urban area whose indigenous people have similar ethnic ancestry like the study community; I speak the local dialect of the community.

I also have characteristics that differ from the study participants in various ways. I come from a different ethnic group, lived most of my life in an urban area, and urban areas in Ghana are completely different from the rural areas. Additionally, I am a trained health worker. Most of the participants were not educated and I did not encounter the few individuals who were reportedly educated.

Considering the influence of these characteristics on the fieldwork and the findings of the study, a plan to moderate the influences were completed before the fieldwork commenced. How these factors were managed during the study is discussed in the reflexivity section of this thesis.

Outline of the Thesis

This thesis is presented in 9 chapters. Chapter one outlines the physical and sociocultural background of the study setting and provides information on the nature of the study problem.

Chapter two provides a contextualised literature review of existing primary studies on child feeding and nutrition in rural Africa.

Chapter three details the methodology that guided the development of the proposal and the fieldwork.

Chapter four presents the method and procedures for identifying, contacting, and recruiting participants for the study. It also details the data collection and analysis processes.

Chapter five, six and seven describes the three major themes that emerged from analysis of the data

Chapter eight is a synthesis and discussion of the themes.

Chapter nine provides the conclusions and recommendations based on the study findings.

CHAPTER ONE
STUDY BACKGROUND

Chapter 1: Study Background

1.1. Overview

This chapter provides the context for this study. It presents a brief overview of the country Ghana, its culture, governance, and the health system which plans and implements child nutrition interventions. It also outlines the feeding practices and current nutritional state of children under five years old in Ghana. The chapter closes with a statement demonstrating the disparity between child nutrition interventions by the health service and the feeding practices in a rural community and a call to explore possible explanations.

1.2. Child feeding in context

Child feeding involves those activities that result in the ingestion of food. Child feeding is the single direct activity that influences the nutritional status of the child as it guarantees nutrient intake. The nutritional status of children and the impact of this on individuals and communities is affected by feeding practices such as early initiation of breastfeeding, exclusive breastfeeding for 6 months, the time of introducing complementary foods and the frequency and regularity of feeding (De Onis, 2006; Dewey, 2001). Supervised feeding and the attitude of carers towards child feeding also affect nutritional outcomes (Ramji, 2009). Other related activities, such as food cultivation and economic activities influence child nutritional status. Besides ensuring optimal growth and development, appropriate child feeding reduces the risk of infectious and diarrhoeal diseases and death (UNICEF, 2016a).

Nutritionists and food scientists have provided evidence on what constitutes healthy food and feeding to ensure an optimal nutritional status. However, due to different influences such as climate, economics, and culture on the cultivation, accessibility, and consumption of food across the planet, not all individuals consume food in the way that the body requires to function effectively. Consequently, as part of their strategy to support countries to maintain and promote optimal nutrition, and to prevent and treat malnutrition in the global population and in children under-five years, the World Health Organisation (WHO) and the United Nations Children and Education Fund (UNICEF) have developed recommendations for the optimal feeding of children (WHO and UNICEF, 2003). These recommendations are based on rigorous research from various countries across the world (De Onis, 2006) and include exclusive breastfeeding for the first 4 to 6 months; continuous breastfeeding with complementary feeding from 6 months onwards to at least 2 years; specifying the type of solid, semi-solid and soft food to give to children at a particular age; the minimum number of food groups to include in a child's diet and the frequency and diversity of children's meals (WHO and UNICEF, 2003). It is believed that following these practices would ensure that children achieve and maintain a satisfactory nutritional status. However, there is evidence that children worldwide are not appropriately fed. For instance, it is estimated that only 40% of the world's children under 6 months are exclusively breastfed (WHO,

2015). Children may also be introduced to complementary foods either too early or too late, and they may not always be given the right kinds of food (UNICEF, 2016a). Ghana is one of the countries where children are inadequately fed (GSS et al., 2016; MICS, 2011b). The preceding section shows the state of child feeding in Ghana.

1.3. Status of Ghanaian child feeding

Documented evidence shows that children in Ghana are not fed adequately (GDHS, 2014 & Gyampoh et al., 2014 & (MICS, 2011b). In a multi-indicator cluster survey (MICS) using questionnaires to gather health information on 7381 children under the age of five years, up to 69% of Ghanaian children were not being fed per the WHO and UNICEF feeding recommendations (MICS, 2011b). Similarly, 87% of Ghanaian children between the ages of 6-23 months were not fed the minimum acceptable diet according to the Ghana Demographic Health Survey (DGHS, 2015). Gyampoh et al., (2014) also assessed the knowledge of mothers regarding WHO and UNICEF recommended feeding practices and reported that even though 80% of mothers involved in their study had knowledge of the recommended infant and young child feeding (IYC) practices, 68% of them did not provide their children with the minimum acceptable diet. These findings suggest that children are not being fed adequately and this might be a contributory factor to the nutritional deficiency of children in Ghana. Additionally, though these findings represent a large proportion of children under-five years in Ghana, it is possible that many other children exist across the country who has not been captured in studies and who may not be feeding optimal. Due to the challenges in accessing data from difficult to reach populations, Anecdotal evidence shows that data management in Ghana is now developing, and data in some areas in the country are sometimes not captured. This could explain why undernutrition remains significantly high in rural Ghana.

1.4. Child malnutrition

1.4.1 Malnutrition defined

Malnutrition is a worldwide phenomenon, characterised by over- and under-nutrition. Wasting, underweight and stunting are the three main forms of undernutrition commonly occurring in developing countries (UNICEF, 2009). Over-nutrition, otherwise known as overweight or obesity is also gradually becoming a health concern in developing countries (UNICEF et al., 2012). The definition of malnutrition is established in the WHO (2006) growth standards constructed from anthropometric measurements, namely height, age, weight and the circumferences of different body parts such as upper arm and head (de Onis et al., 2006). In this script, the anthropometric indices are height; weight and age (see Table 1.1).

The growth standards indicate the standard deviation of the computation of a child's height, weight, and age, and the overall body mass index (BMI) (De Onis and WHO, 2006). When a child's anthropometric calculations are similar or worse than shown on the table, the child is suffering

from a form of malnutrition. Wasting, underweight and stunting is forms of calorific malnutrition (Lloyd et al., 1978) resulting mainly from macronutrient (protein, carbohydrates, and fat) deficiency. However, micronutrient (vitamin and mineral) deficiencies co-exist with macronutrient deficiencies, and contribute to, and aggravate macronutrient deficiencies (Gershwin, 1985; Martorell, 1999).

Table 1.1: W H O (2006) Growth Standards

Nutrition indicator	Anthropometric indicator	(Standard deviation (Z-scores))
Stunting	Height-for-age	-2
Underweight	Weight –for-age	-2
Wasting	Height-for-weight	-2
Overweight	BMI	+1
Obesity		+2

SOURCE: WHO (2006)

Even though all types of malnutrition pose health problems in children, stunting has the most unfavourable effects on child survival, optimal development and brain impairment (Devlin, 2012; UNICEF, 2009). Stunting reflects chronic nutritional deficiency associated with recurrent illness and inadequate nutrient intake over a long period of time (UNICEF et al., 2012). Wasting on the other hand often reflects a recent weight lost due to recent poor feeding during sickness, or a seasonal absence of food (UNICEF et al., 2012). Underweight represents either acute or chronic nutritional deficiency (UNICEF, 2012).

The percentage of children with a nutritional deficiency, for instance, stunting, in a population, indicates the growth and development status of children within that population. Poor child nutritional status represents a public health implication in a population, requiring attention. Table 1.2 illustrates the indicators, the health significance parameters, and the value definitions. For instance, when less than 20% of children in a population suffer stunting, it is considered as low prevalence. However, forty percent (40%) of children with stunting in a population is considered very high prevalence and an undernutrition crisis with immediate and remote health and development implications.

Table 1.2: Malnutrition cut-off values of public health significance for children under-five years

No	Indicator	Cut-off values	Values definitions
1	Underweight	< 10%: 10%-19%: 20%-29%: =30%	Low prevalence Medium prevalence High prevalence Very high prevalence
2	Stunting	< 20%: 20-29%: 30-39%: = 40%:	Low prevalence Medium prevalence High prevalence Very high prevalence
3	Wasting	< 5%: 5-9%: 10-14%: = 15%:	Acceptable Poor Serious Critical
4	Overweight	Not available	

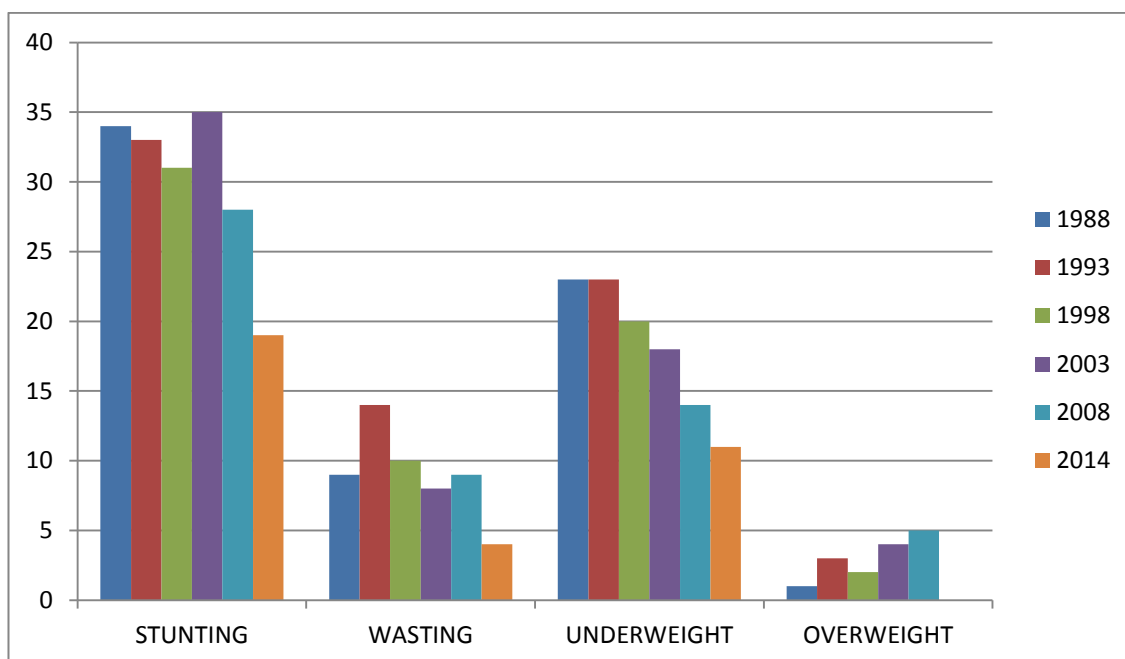
Source: WHO (2010)

1.4.2 The state of child nutrition in Ghana

Although there is evidence that most Ghanaian children are not receiving the minimum acceptable diet, there appears to be a significant decrease in the prevalence of under-nutrition in children under-five years in Ghana over the last 29 years (DGHS, 2015; MICS, 2011b) as Figure 1.1 illustrates. However, under-nutrition in Ghanaian children remains a public health concern because the prevalence of stunting is 28% in the ages 24-35 months. As indicated earlier, stunting is a manifestation of prolonged food deprivation, infections, and is an indication that children live in a challenging environment (UNICEF, 2016b; de Onis et al., 2006). This statistic, when compared with the WHO cut-off values of public health significance in Table 1.2 represents a serious public health concern (De Onis and WHO, 2006 & (MICS, 2011b).

Rural areas have the highest incidence of undernutrition in Ghana. For instance, in children under-five years in rural Ghana, stunting is 22% compared to 15% in urban Ghana. This makes stunting 7 percentage points higher in rural Ghana than in urban Ghana even though the population is evenly distributed with 50.9% living in urban areas and 49.1% in rural areas.

Figure 1.1: The trend of undernutrition in under-fives in Ghana



Stunting has remained persistently high in rural northern Ghana since 1988.

Furthermore, diet-related iron deficiency anaemia in children under-five presents a significant challenge in Ghana (MICS, 2011b). Anaemia is a condition in which there is a deficiency of red cells which carry haemoglobin in the blood, and which can be caused by bleeding, bone marrow deficiency, and dietary iron deficiency (Bagchi, 2004; Lloyd et al., 1978; Mbanya et al., 2007; Stoltzfus, 2001). Diseases such as malaria and worm infestation, and severe bacterial infections, can also cause anaemia (Mbanya et al., 2007; Smith and Haddad, 2000; Trail et al., 1991). However, the major cause of anaemia in children in Ghana is insufficient dietary iron (GDHS, 2003; GDHS, 2008b; MICS, 2011b). Iron is an essential mineral necessary for wellbeing and is particularly essential when there is rapid physiological development (Lloyd et al., 1978). This is because the availability of a derivative of iron (haemoglobin) in the blood impacts upon oxygen transport which is required for metabolism and other bodily processes which result in physical growth and development and strengthening of the immune system (Bagchi, 2004; Callender et al., 1957; Jacobs et al., 1972). Haemoglobin, a red pigment in the red blood cells is derived from dietary iron (Callender et al., 1957), and iron comes mostly from green leafy vegetables and animal products

like fish, meat, and eggs (Guesry, 1998; Lloyd et al., 1978). Thus, the absence or low levels of these sources of iron in the diet will compromise bodily functions.

Whereas macro-nutrient deficiencies appear to be reducing amongst the under-fives in Ghana, anaemia seems to be increasing. Based on a periodic cross sectional test of haemoglobin levels in the blood of children under-five years, fifty-seven percent (57%) of the children in Ghana were suffering from anaemia in 2011 (MICS, 2011b). This increased to sixty-six percent (66%) four years later. Meanwhile, once more rural areas had a higher prevalence of anaemia, 73.6 %, compared with the urban areas with a prevalence of 57.3% (MICS, 2011b). Children's blood iron is one of the three micronutrients periodically monitored through the Ghana demographic and health survey (GSS et al., 2016). It could be argued that perhaps there is the equally high prevalence of deficiencies of other micronutrients which are not regularly monitored. This suggests that the impact of malnutrition may be more than known.

1.5. Impact of malnutrition

Under-nutrition is estimated to contribute to 40% of childhood deaths in Ghana (Birks, 2012; UNICEF, 2009; UNICEF, 2014). Children who survive chronic under-nutrition are often left with problems such as cognitive impairment, low intelligence quotient (IQ), reduced capacity to do physical work and implications for personal and national development (UNICEF, 2016b; Pelletier et al., 1995). With reduced physical and intellectual capacity, these children may not be able to reach their adult potential. This could then reduce their ability to contribute meaningfully to the economic growth and development of their country (Grantham-McGregor et al., 2007; Guesry, 1998).

Additionally, when malnutrition is high, a healthcare system is overburdened with caring for the health needs of malnourished children, and parents and guardians' productive time is lost to the care of sick children (World Bank, 2010). In fact, it is reported that anaemia alone causes an approximate drop of 2.5% in wages in Ghana (World Bank, 2010). It is also estimated that Ghana loses up to 177 million Ghana cedis of its gross domestic product (GDP) to vitamin and mineral deficiencies (World Bank, 2010). These burdens of malnutrition exist regardless of the many interventions put in place in Ghana to address this issue. It is accepted that optimal feeding practices could make a difference (Gyampoh et al., 2014; GDHS, 2008a). Unfortunately, the evidence shows that feeding practices are not optimal in Ghana (GSS et al., 2016; Gyampoh et al., 2013a; Gyampoh et al., 2014) but the explanation for this lack of optimal feeding is sparse.

1.6. Study Problem statement

The discussion so far has demonstrated that optimal nutrient based diets and appropriate feeding practices are important for child health. Regardless of overall improvement in Ghana inadequate nutrition persists in northern rural areas. Investments in community health services have not solved the problem. Culture could be part of the explanation. Culture relates to feeding practices via several pathways. Culture gives food its meaning, thereby determining the foods that are cultivated by a group of people. The storage, preparation and hygiene practices related to food are

also defined by culture. Exploring cultural practices using an ethnographic approach may be a way of understanding the suboptimal feeding practices in rural northern Ghana. This study, therefore, explored a cultural perspective of child feeding.

1.7. Purpose of the study

This study explored households' cultural feeding practices in relation to children in rural northern Ghana. The aspects explored were; the factors that influenced the choice of children's food and feeding style; the way children's food was prepared; how children were fed and how Ghanaian households learnt about the feeding of children. The purpose was to establish an understanding of the cultural approach to the feeding of children to understand if this could contribute to inadequate nutrition. This could have implications for how health professionals disseminate information to households. The next section provides an overview of Ghana in the context of this study as a prelude for understanding the conduct of the study.

1.8. Ghana, the setting of this study

Although it is not possible to capture the complete perspective of a cultural phenomenon, ethnography's goal is to capture as comprehensive a picture of the cultural phenomena being studied as possible (Rice and Ezzy, 2000; Hammersley, 2007b). In ethnography, researchers are interested in understanding the meaning of phenomena from the participants' perspective, which requires researchers to immerse themselves in the study setting to enable them to generate, interpret and provide a rich description of the phenomena in the context in which it is studied (Hammersley, 2007b; Fetterman, 1989). An overview of the study setting is, therefore, a valuable way of helping readers obtain an image of the study setting. This enables readers to situate the findings, make meaning of the results and decide whether the results may be transferable to a context in mind.

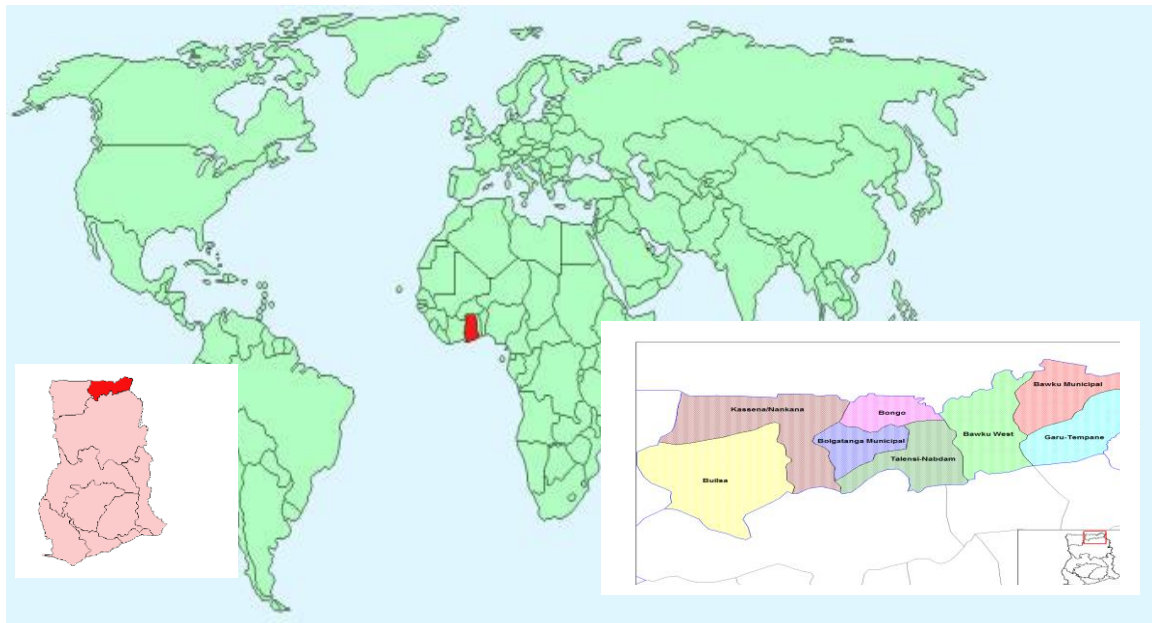
1.9. Geography and climate of the study setting

Ghana is a West African country that shares borders with Burkina Faso in the north, Ivory Coast in the west and Togo to the east (Briggs, 2014; Commisceo-global, 2016). The southern border of Ghana is the Gulf of Guinea. Ghana is a tropical country, with a warm and slightly dry southeast region, a hot and humid southwest region, and a dry and hot northern area. Figure 1.2 depicts Ghana on the world map, with the upper east region and Bongo the study district shown. Ghana is the red coloured area on the West African coast of the world map, which is shaded green. The Upper Region is the red shaded area of the map of Ghana in the left box; the pink shaded area on the extract of the Upper East Region on the map in the rectangular box is the Bongo district where the community of the study is located.

The Upper East is one of the 3 regions which form northern Ghana. 79% of its population lives in rural areas (GSS, 2012). The setting of this study is a community in the Bongo district of the Upper East Region. Like other parts of northern Ghana, it is an arid area with two major seasons, the long dry season, and the short rainy season. The former starts in late August and ends in early

May, but can stretch to early June and late July in recent years. Rain may fall for four (4) months starting in May or June and end in September (Blench, 2005; GSS, 2012). The annual average temperature is 28.1°C. On average, there are 70 days of rain a year and an annual average total rainfall of 917 millimetres.

Figure 1.2: location of the study setting on the world map



1.10. Demographics

1.10.1 Age

The population of the Upper East accounts for approximately one million of the 26 million people in Ghana (GSS, 2012). Whereas 49.1% of the Ghanaian population live in rural areas, in the Upper East region 79% of the people do so, making the Upper East the least urbanized in Ghana (GSS, 2012). Ghana has a high number of young people within its population with 38.6% aged between 0-14 years, 18.66% percentage are aged 15-24 and 25-54 years from 33.8% of the population, and those over 65 years of age form just 4.1% of the total population (GSS, 2012).

The under-five age strata form 13.8% of the Ghanaian population and in the Upper East region of Ghana, 13.9% are under-five. These population statistics indicate that there is a high dependency ratio. Dependency in the Upper East Region is 93.7% and the study district (Bongo) has a dependency ratio of 99.2% (GSS, 2011). This represents the number of individuals aged zero to 14 years and those over 65 years old who depend on the population aged 15 - 64 years in the community (UN, 2006).

1.10.2 Life Expectancy and Mortality

Life expectancy in Ghana is 65.7 years at birth (WHO, 2016), and that of the Upper East is 50 years (GSS, 2012). Child mortality in Ghana is 72 deaths per 1000 children (GSS, 2012). However, that of the Upper East region is 128 deaths per 1000 children, which is the highest in Ghana. The Bongo district (the setting of this study) has the second highest child mortality rate in the Upper East Region with 132 deaths per 1000 children under the age of five years (GSS, 2012). Indeed, the highest mortality rate in the Upper East population also falls in the under- five strata. This is 10.6%, which is far higher than the national rate of 6.6%.

1.11. Culture of the people

Ghana has over 100 ethnic groups, six of which are described as major. Each ethnic group may have over ten dialects, making Ghana a multilingual country with over 80 languages (Salm and Falola, 2002). Each ethnic group has its own culture; thus, Ghana has numerous segregated cultural systems. Ethnic group members, especially in rural settings, tend to live in specific geographic locations making them more likely to practice their distinctive ways of life.

1.11.1 Religion

Ghana is generally a religious society with people belonging mostly to traditional ancestral, Islamic, or Christian belief systems. In the Upper East Region, 27.9% of the population report adherence to traditional religion and 27.1% to Islam (Briggs, 2014). 41.7% belong to one of the Christian denominations, catholic, protestant or charismatic. It is believed that up to 60% of the population irrespective of educational level, and declared religious belief may associate ill health with spiritual causes and seek health care from traditional health practitioners and spiritual leaders (Briggs, 2014). This is especially the case for Christians and African traditional believers.

1.1.11.1. African traditional religions and the powerful influence of diviners

Historically, African is a theist continent, practicing what is generally known as the African traditional religions with believes in the Supreme Being and lesser deities (Olupona, 2014). There are as many religious beliefs as there are ethnic groups in Africa (Olupona, 1991) and this appears to determine the sacred symbols of the religion. Animate and inanimate symbols represent the various African traditional religious beliefs. These may include deceased ancestors, deities, animals and trees.

African traditional religion leaders are also differently labelled. In Ghana they may be called soothsayers, Diviners, traditional medical doctors among others (Salm and Falola, 2002; Onyinah, 2002). The common feature of these leaders is that they are perceived as very powerful, as they are believed to have supernatural powers similar to those of supernatural supreme beings (Salm and Falola, 2002). Diviners are alleged to able to invoke spirits on people, and some of these spirits may bring harm on the individuals who may offend the deities (Tabi et al., 2006; Maier, 1983). Diviners have been purported to be able to treat ailments western medicine has not been able to manage (Tabi et al., 2006). Since most aspects of African life are organised around some

religious beliefs, and harm and even death invoked on people who go contrary to religious leaders recommendations (Olupona, 2014; Salm and Falola, 2002), these individuals are highly revered and their recommendations are usually taken seriously. Traditional religious believers visit their diviners to obtain information on how to order most aspects of their lives. For instance, it appears to be an abomination among serious believers not to seek information on the plans a supreme being may have about a new born child in a family. Taboos, restrictions, bad omens and even some daily manners largely emerge from African traditional religious beliefs and are communicated by the spiritual leaders.

1.11.2 Leadership and respect for the elderly

Ghanaian society is highly hierarchical. Respect for seniority is important, highly valued custom. Status is mostly defined by position or age (Salm and Falola, 2002). However, age is the most observed prerequisite for the bestowal of respect and honour. Wealth and the level of a person's life experience also play a role in how respect is accorded. Individuals who are held in high esteem are usually favoured more than others in public places, and their opinions on issues may also be regarded as fact (Salm and Falola, 2002; Briggs, 2014; Commisceo-global, 2016). Elderly people would usually be highly revered and considered a more reliable source of knowledge, than younger people, especially in rural settings.

1.11.3 The inheritance system and 'ownership' of children

Another important aspect of Ghanaian society is the inheritance system. There are 2 types of inheritance systems in Ghana. The three northern regions, the greater Accra and the Volta region of Ghana inherit via the patrilineal line whilst the remaining 5 regions inherit via the matrilineal line (Salm and Falola, 2002; Quansah, 1991). In the former, children in a marriage 'belong' to their father's side and inherit property from that side of their family, whilst in matrilineal inheritance children 'belong' to their mother's side and usually inherit property from their mother's side of the family (Salm and Falola, 2002; Quansah, 1991). The ownership of children seems to determine who is responsible for the welfare of children. For example, in the northern part of Ghana where the male parent owns the children, it is expected that the father provides finances for their upkeep (Salm and Falola, 2002; Quansah, 1991).

1.11.4 Marriage

Marriage and family are treasured in Ghana. The social expectation is that every woman or man of childbearing age marries. Women of childbearing age, in particular, are pressurized to marry and have children (Lloyd and Gage-Brandon, 1993). Even though polygamy is common in Ghana and both Islam and traditional African religion embrace it, from my personal experience, it seems unappealing in recent times to most Ghanaians, as in my personal circles and media discussions, polygamy is disapproved.

1.11.5 Family systems & Households

Extended and nuclear family systems co-exist in Ghana. Nuclear family systems are more common in the urban areas, whilst the extended family system is widely practiced in rural settings (GSS, 2012). In this study, 'households' are generally made up of husbands and wives with their children, grandchildren, great-grandchildren and unmarried female members of the family plus other distant relatives who may migrate to live with them (Salm and Falola, 2002; Cultures and Countries, 2016). Members of a household may live in groups in a form of semi-detached quarters (compounds) within a household.

1.11.6 Compounds

The number of compounds in a household depends on the number of independent men (men who are married with children and can be household heads). A compound may consist of a nuclear family, which includes a man, his wife or wives, and children; or a man, his wife or wives, his mother and siblings (GSS, 2012).

1.11.7 Food

Another aspect of the life of Ghanaian society is their cuisine. Even though Ghanaians produce all sorts of staples, the Ghanaian cuisine is organised around starchy foods (Ghanaweb, 2014). Crops grown and cuisines are largely ethnically determined. Whereas plantain and cassava fufu are common staple foods which may be eaten in almost every part of southern Ghana, yam fufu (or pounded yam) is more common in some parts of the northern regions (Ghanaweb, 2014). This difference is based on where these foods are mainly cultivated. Tuo-zaafi (TZ), which is prepared with corn or millet flour is the staple food for all the northern regions and is comparable to fufu, which is the predominant food for people in southern Ghana (Ghanaweb, 2014). Other foods such as kenkey, banku, rice balls, jollof, and 'red red' are foods that are eaten all over Ghana, even though these foods may be eaten in some parts of the country more than others. Ghanaians in urban areas will often eat from other ethnic groups' cuisines. For instance, though I come from the north of Ghana, in my family we consume all the foods outlined equally. However, people in the rural areas are most likely to depend on the staples that are grown in their localities. Many Ghanaians would normally cook and eat at home, especially evening meals, rather than buy foods from restaurants. However, people in urban areas may eat at food links and restaurants during the day. Ghanaians enjoy very spicy food, with the soups that accompany the fufu and TZs usually being very spicy.

There are assorted snacks that Ghanaians consume. These include roasted plantain, steamed and fried beans and millet or corn buns, peanut cookies, cassava biscuits and doughnuts. Most of the local snacks such as roasted, steamed, and fried beans, corn or millet buns will be eaten more in rural settings whereas international snacks such as doughnuts will be eaten more in urban areas.

1.11.8 Food for celebrations/restrictions

Ghanaians may prepare special meals for special occasions such as Christmas, birthdays, and funerals. Traditionally, meals in Ghana are not organised in courses. However, in urban areas today, people may eat more than one group of food at a meal. Typically, there are three types of meals daily, breakfast, lunch, and supper. Besides the types of food that may be eaten along cultural lines, food taboos and restrictions may also prevent people from eating some foods that are eaten normally within their cultural grouping. The following of tradition, spiritual limits, and social norms are some of the explanations for restrictions placed on particular foods (Salm and Falola, 2002).

1.12. Economic structures

The Ghanaian economy is mainly (61.9%) agriculture based (Worldfactbook, 2016). However, only 20% of Ghana's potentially arable land is used. Agriculture contributes only 21.5% of GDP (WorldBank, 2014) despite it being the main economic activity. In the Upper East, in particular, agriculture accounts for about 80% of economic activity (GSS, 2012). Even though there are some commercial farmers in Ghana, people in the setting of this study are mostly peasant, subsistence farmers and petty traders (Ghanaweb, 2014). Farm produce includes millet, guinea corn, groundnuts, beans, tomatoes and onions (Ghanaweb, 2014; GSS, 2012). Poultry and livestock are the main animals reared. Due to the long periods of drought in the north many people (especially male family members) in the community of this study migrate seasonally to the southern part of Ghana to seek 'greener pastures'.

Ghana is endowed with major natural resources, the latest discovered being petroleum (Ghanaweb, 2014; WorldBank, 2014). Other natural resources include cocoa for which Ghana is the world's second largest producer and gold for which it is in 10th position in worldwide production (Ghanaweb, 2014). Ghana is also rich in bauxite, coffee, salt, silver, diamonds, and limestone among others (Ghanaweb, 2014; WorldBank, 2014; Worldfactbook, 2016). However, the country has not been able to access most of the resources effectively and does not process most of these resources into finished goods for home consumption or export. Thus, Ghana is highly dependent on imports to service its economy.

Furthermore, challenging revenue mobilization and financial malpractices have made the country highly dependent on donor funding for the management of its services such as health (Quartey, 2008; Leechor, 1994). As such, the country is mostly in financial deficit due to excessive government borrowing (MoFg, 2016; Indexmundi, 2016). Ghana was declared a lower middle-income country – moving from a highly indebted poor country in 2011 (WorldBank, 2014). However, the World Bank estimates that 24.2% of the Ghanaian population has no minimum income to meet their basic necessities (WorldBank, 2014). Rural Ghana and the rural Savannah in particular (the setting of his study) are reported as the poorest areas in Ghana (GSS, 2012). Seventy-eight percent of rural Ghanaians are poor, and 8.5 percent are extremely poor, unable to

afford one adult meal a day (GSS, 2012; Indexmundi, 2016). There are also high levels of economic inequalities in Ghana. For instance, whereas the average income of the poorest reduced from 6.9% of GDP in the early 1990s to 5.2% in the mid-2000s, the income of the richest increased from 44% to 48.3% of GDP in the same period (Osei-Assibey, 2013; Cooke et al., 20016). This indicates that whereas people in northern Ghana may be experiencing financial difficulties, the same may not be true for most people in the south.

1.13. **Governance of Ghana**

Ghana's governance is based on constitutional democracy. The constitution spells out how leaders are chosen, how they should manage the economy, and the rights of people living in Ghana (Gyimah-Boadi, 2001; Rubin and Murray, 1961; Ghanaweb, 2014). In Ghana's constitution, the president who leads the nation and the parliamentarians, who formulate laws for the country, are elected every 4 years (Gyimah-Boadi, 2001). The president is then responsible for appointing leaders of various departments to manage the country's service sectors. The administration is divided into ministries, agencies, and departments (MDAs). Examples of these MDAs are a ministry of defence, trade and industry, economic planning, education, the local government and health organisations (Ghanaweb, 2014). These institutions either formulate policies or implement strategies, which involve providing direct services to the people of Ghana. The health sector is one of the MDAs, and is directly responsible for child health and may collaborate with other organizations to perform its functions (GHS, 2009).

1.14. **Health service organization in Ghana**

The ministry of health and the Ghana health service are the institutions responsible for health care in Ghana. The ministry of health is mainly in charge of policy formulation, and the Ghana health service is directly involved in providing health care services to the people of Ghana. There are five administrative levels of health care delivery in Ghana namely: the national health administration, the regional health directorate, the district health directorate, the sub-district health management team, and the community health planning services (CHPS) centre. Teaching hospitals which are autonomous agencies of the Ghana health service and ministry of health can be described as the tertiary level of health care provision. The regional and the district levels have hospitals which basically serve as secondary health facilities. Clients from the primary care facilities (the sub-district and the CHPS centres) are usually referred to the secondary health facilities if they require anything other than basic health care. Health professionals who manage these facilities are trained both at university and colleges levels. Health professionals may obtain certificates or diplomas in nursing, nutrition, and disease control as well as medicine and pharmacy among others. These professionals may train at private universities or at Ghana health service training institutions. The content of the training is based on curricula that are developed by the various professional groups in the health service. From anecdotal information, some of the professional groups have just begun to develop their curricula on evidence-based data. However, for most of the curricula, apart from the World Health Organization's recommended content on various aspects of health for population

groups, the source of literature for reviewing and developing curricula is not known. Child health and nutritional care services follow this format. Nurses and nutrition officers from all the levels of the health service are responsible for the latter. From personal experience through my own training and working in a nursing college, the nutrition syllabi for nursing trainees are based on WHO and UNICEF recommendations.

1.15. Child health and Nutrition services in Ghana

Health education on child feeding is delivered in communities and health centres to promote and maintain optimal nutrition. The subjects currently covered include providing information on optimal feeding practices to mothers and carers. Mothers and carers who visit health centres and CHPS compounds are also routinely given information on breastfeeding, complementary feeding, food groups, the frequency of feeding and the weaning of children (Dewey, 2003). Community health nurses, midwives and nutrition officers employed by the Ghana Health Service are responsible for ensuring that feeding information gets to mothers with children under the age of five. This information is usually given by the health personnel who oversee the child growth monitoring and administer immunizations at the health centres. The Ghana Health Service periodically organises child health weeks during which intensified campaigns on child health (including nutrition) are carried out. Health professionals also attend community durbars (local gatherings) to promote good child feeding practices. The strategies and materials used have been developed by the WHO and UNICEF and are promoted as the best way to ensure that children are well fed and receive all the required nutrients to maintain their health.

1.16. Summary

This chapter described the study setting and background of child nutrition and feeding in Ghana. Considering the importance of nutrition to child health, it is expected that children will be satisfactorily fed to ensure that they received the right nutrients. However, as seen in the previous sections, this is not the case in Ghana despite health interventions to promote optimal child feeding and nutrition. Since culture is linked with every aspect of life, understanding the cultural aspect of child feeding, the aim of this study, may explain the poor feeding practices and persistent malnutrition in children in rural northern Ghana. Meanwhile, to provide a broader context for this study, to understand what knowledge exists on cultural feeding practices and the appropriate strategies for studying this topic, a literature review was conducted. The following chapter describes this literature review.

CHAPTER TWO
LITERATURE REVIEW

Chapter 2: Literature review

2.1. Overview of the Chapter

This chapter presents findings from a review of primary studies that have examined child feeding practices. The chapter includes the background and purpose of the review, characteristics of the studies, presentation, and analysis of results, appraisal of the quality of the papers included and conclusions drawn from the review.

2.2. Background and Purpose of the review

The aim of the review was to explore the existing literature on cultural child feeding practices and to examine the methods used in researching the topic. It is generally accepted that feeding practices are influenced by both scientific nutrition knowledge and people's local cultural beliefs (Helman, 2001; Winkelman, 2008). This review focused on published reports of primary studies that explored cultural child feeding practices in Africa.

2.3. Characteristics of the review

2.3.1 Review question and aim

The review question was "What are the child feeding practices found in African rural households in relation to children under the age of 5?"

2.3.2 Review type

This review involved a systematic approach to searching the literature and a narrative presentation of the results. Systematic narrative reviews involve the structured formulation of a review question, the development, and application of a structured search protocol for searching, retrieving, appraising and synthesizing the findings of primary studies to answer a review question (Heneghan, 2009; Joanna Briggs, 2011). This type of review allows replication of the same question and has a high potential for transparency. It ensures a thorough search for existing primary studies of the review question and reduces the predisposition of reviewers to subjectively select the primary studies included (Liberati et al., 2009; Higgins and Green, 2005). The Centre for Reviews and Dissemination Guidelines were used to search, select, appraise and extract data (CRD, 2009).

2.4. Review Procedures

2.4.1 Search elements

Appropriate search terms are important in identifying relevant studies for review. Search terms are usually derived from the main concepts in a review question. The PICO frame, originally designed to allow physicians access evidence-based knowledge to guide their practice has been extended to formulating review questions for accessing evidence in other fields (Huang et al., 2006). However, PICO has increasingly been recognised as limited in retrieving articles from databases for review questions that are based on sociocultural phenomena or have a wide perspective (Cooke et al., 2012). Database Operators' index articles based on the interpretation of terms in article titles

(Cooke et al., 2012; Huang, 2010). However, in some research, particularly based on the social sciences, the definition of terms is subjective and based on context. This appears to challenge indexers' ability to index such studies with specific terms to enable easy retrieval. Consequently, frames such as PEO, SPIDER, and PIO have been devised to suit other fields of study (Bettany-Saltikov, 2012a; Cooke et al., 2012). The current review, which sought to pull together articles on households' cultural, feeding practices for children under-five years, is highly contextualised. I, therefore, developed a contextualised search frame based on the existing frames and used it to guide the search for articles to be reviewed. Table (2.1) is an outline of the key concepts in the review question. The inclusion and exclusion criteria for studies were developed from the key terms in the review question.

Table 2.1: Key concepts in the review question and the search terms used

	Population1	Population2 characteristic	Issue & Context
Key concepts	Children under-five years' old	Households	Feeding practices Cultural
Search terms	"children under-five years old" "early childhood" "child*" "infant*" "pre-school" "under-five"	"Families" "house*", "house*" "communities" "ethnic groups" "rural populations" "developing countries" "challenging settings Africa"	"cultural feeding practices" "customary feeding practices" "complementary feeding" "nutri*" "nutri* practices" "weaning practices" "weaning"

2.5. Inclusive and exclusive criteria

The main criteria for the inclusion and exclusion of studies in a review are the population under study, the phenomenon being studied, and the type of research design that favours the identification of appropriate data for explaining the phenomenon adequately (Bernard, 1994; Denzin and Lincoln, 2005; Silverman, 2010). Other criteria could be a geographical location, year of publication and language of publication (Bettany-Saltikov, 2012b; Joanna Briggs, 2011). Children under five years of age are a specific population group, and for the review to be meaningful and findings understood in the context of this group, the studies explored were restricted to the age group from zero to 5 years (0-60 months). The phenomenon under review was indigenous cultural feeding practices, and since societies have distinct cultures (Castro-Gómez and Johnson, 2000; Geertz, 1973; Wagner, 1981), the review needed to be limited to context similar to the geographical location of the study population and this was rural Africa. Indeed, a broad cultural context could be useful for understanding the phenomena at a global level. However, considering the purview within which this review occurred time could not make it possible for the review of articles for other continents. Cultural phenomena are usually studied using qualitative methods and ethnography in particular (Fetterman, 1989), nevertheless, the search included all research designs

in order not to miss relevant papers related to this topic. Only papers published between 2000 and 2016 were considered. Table (2.2) presents a summary of the inclusion and exclusion criteria for this review.

2.6. Data Sources

The databases searched included Medline, Psych-info, Global health, Embase, Anthropology Plus, Maternity and Infant Care and Social Sciences full text, Web of Science, Biosis Citation, Cochrane Database of Systematic Review, Science Direct, Health and Social Sciences subject areas, Trip Data, Scopus, and Science.gov. Also searched was UNICEF, WHO, Child info, GHS, MOH, World Bank, UN, and IMF publication repositories.

Table 2.2: exclusion and inclusion criteria

Inclusion criteria	Exclusion criteria
<p>Papers that focused on:</p> <ul style="list-style-type: none"> Households with children under -five years Any person preparing food and or feeding children Any individual making decisions about children’s food and feeding 	<p>Papers that focused on:</p> <ul style="list-style-type: none"> Exclusive breastfeeding Acute nutrient supplementation feeding Medically prescribed feeding Settings other than households

2.7. Searching for the literature

I used the key concepts as shown in Table 2.1 to scope and map-up additional terms and synonyms for the main search. The MeSH tool in Ovid Medline, the ‘suggest subject terms’ in CINAHL and the Thesaurus in the British Nursing Index were mainly used to map-up additional terms from the review questions. I then used the terms of the various parts of the question to conduct the searches. The Boolean operators (AND, OR and NOT) were used to include, exclude, expand, and refine searches. These operators combine the parts within and across with ‘OR’ and ‘AND’ respectively. Appendix 1 is an example of a search from the web of science database with the terms of the various parts of the review question. In addition to searching databases and grey sources, I manually searched the reference lists and bibliographies of included articles. I exported all potentially relevant articles from queries into Endnote after thoroughly scanning the databases. I thoroughly screened, sorted, and removed articles that did not meet the inclusion criteria.

2.8. Search results

The search yielded 3677 publications. I removed eight hundred and sixty-six (866) duplicates. Screening of titles and abstracts resulted in a further exclusion of 2732 for not meeting the inclusion criteria. I reviewed the reference lists of the remaining 79 papers and identified 120 potentially eligible papers. After the screening, I rejected 70 and accepted 50 of these papers at this level.

2.9. Excluded studies

One hundred and twenty-nine papers were provisionally eligible at this stage. To ensure that these papers fully met the inclusion criteria I conducted a thorough and final assessment of the abstracts. I eliminated ninety of the 129 papers for not meeting one or more of the inclusion criteria. These were the reasons for eliminating the 90 papers: (1) adult feeding practices, (2) evaluating nutrition interventions, (3) year of publication earlier than 2000, (4) exclusive breastfeeding only, (5) acute malnutrition feeding, (6), studies conducted outside Africa and (7) posters. Figure 2.1 is a flow chart of the search results, included and excluded papers.

2.10. Included Studies

Thirty-nine studies were eligible for final inclusion. However, the full text of three of the eligible studies could not be retrieved and although I made an interlibrary loan request, the papers are yet to arrive. Thirty-six studies were therefore included in the synthesis. Sixteen of the studies were qualitative, 10 quantitative and 10 mixed methods. The studies were further grouped based on the origin of studies. Thirteen of the studies were conducted in West African countries. Eight were conducted in Ghana, two (Awumbila, 2003; Aborigo et al., 2012a) of which were conducted in northern Ghana. The remainder were conducted in Senegal and Nigeria. Thirteen studies were from east African countries including Kenya, Ethiopia, and Tanzania. Eight of the studies covered South African countries including Zimbabwe, South Africa, and Malawi. One study conducted in the republic of Congo was the only study from central Africa. No North African studies were found. Table 2.3 shows a summary of the included studies by region, country, and study design.

Table 2.3: Summary of Studies by Region Country and Study Design

Region/country	Qualitative	Quantitative	Mixed methods
East Africa			
Tanzanian	2	1	2
Ethiopia		4	
Kenya	2	1	1
West Africa			
Senegal		1	
Ghana	3	2	3
Nigeria	2		
Niger	1		
Gambia	1		
South Africa			
Malawi	1	1	1
South Africa	3		
Zambia			2
Central Africa			
The Republic of Congo	1		
East & South Africa			
Zimbabwe & Tanzania			1
Total	16	10	10

2.11. **Synthesis of review findings**

The thematic synthesis approach, which has been effectively used to combine and discuss evidence generated from diverse research designs (Thomas and Harden, 2008), was used to synthesize the results extracted from the key papers. I extracted and synthesized the findings in a three-stage coding exercise. I initially read each article, extracted the key findings relevant to the review question and the characteristics of the article and entered the key findings into a table. Appendix 2 illustrates the characteristics of the papers included and data extracted. The second stage involved across article coding of key ideas. I pooled, labelled, and refined similar ideas iteratively until the final themes emerged. These themes form the subheadings in the discussion answering the review question. The synthesized findings are presented under these themes in the next section.

2.12. **Child feeding practices across sub-Saharan Africa**

One major finding was the nature of the existing feeding practices across sub-Saharan Africa. The review found practices both consistent with and varying from The World Health Organisation's and the United Nations Children's Emergency Fund (UNICEF) infant and young children feeding practices guidelines.

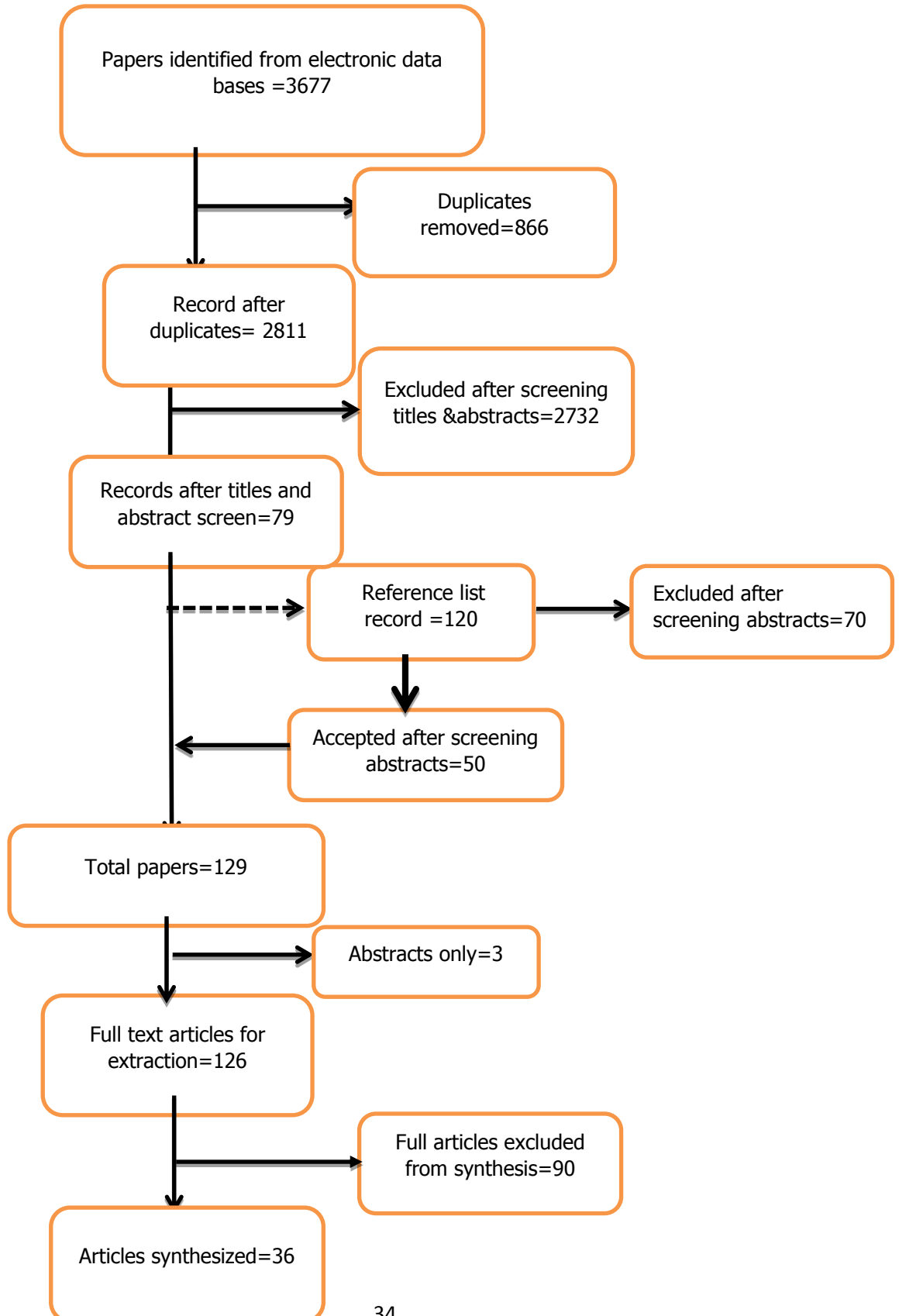
2.12.1 **Feeding the under-6-month-old Child**

Initiation of newborn children to fluids and almost exclusive breastfeeding were the predominant local practices reported in more than 10 of the 36 papers reviewed indicating a conflict between existing and recommended feeding practices. Based on several scientific research projects, since the early 1990s, WHO and UNICEF have consistently promoted exclusive breastfeeding of children for the first 6 months of life (Dewey, 2003; WHO and UNICEF, 2003). Newborns should start breastfeeding within the first hour of life and be exclusively breastfed for the first six months (WHO, 2014). However, these studies (Aborigo et al., 2012a; Awumbila, 2003; Gibson et al., 2009; Gupta et al., 2007; Kimani-Murage et al., 2011; Kruger and Gericke, 2003; Leshabari et al., 2006; Matsuyama et al., 2013; Nordang et al., 2015) all reported that newborn children might be given some fluids other than breast milk within a few days of birth. Aborigo et al. (2012a); Awumbila (2003) whose studies were both conducted in northern Ghana suggest that the giving of fluids at birth was a special ritual related to welcoming a child or treating breast milk which may be considered unwholesome. Other studies reported that fluid was given in place of colostrum which was regarded as expired breast milk whilst waiting for lactation to be established (Gibson et al., 2009; Gupta et al., 2007; Kimani-Murage et al., 2011; Nordang et al., 2015).

Fluids that were reportedly given to children included water, herbal preparations or sugar solutions and cereal flour water (Kruger and Gericke, 2003 & Leshabari et al., 2006 & Hampshire et al., 2009 & Matsuyama et al., 2013 & Omer-Salim et al., 2007 & Awumbila, 2003). Whether these fluids are given as a ritual (Aborigo et al., 2012a; Awumbila, 2003) or whilst waiting to establish lactation or for perceived lack of milk or to expel colostrum (Appoh and Krekling, 2005; Awumbila, 2003; Kimani-Murage et al., 2011), these practices run contrary to the recommended practices (Dewey, 2003; WHO and UNICEF, 2003). The giving of fluids other than breast milk immediately after birth

deprives the child of colostrum, which is important for both their nutrition and immunity. Besides, the existing evidence also showed that in the developing countries where these studies were conducted, lack of clean water and other related factors risk introducing disease-causing organisms to children through the fluids (WHO, 2014).

Figure 2.1: Flow chart of results, excluded and included papers.



Additionally, even though some of the fluids such as the sugar solution or cereal fluid may contain some nutrients, the scientific evidence did not show that such fluids were adequate for the nutrient needs of newly born babies.

The papers showed that children under six months might go on to be fed a variety of foods including family foods (Awumbila, 2003; Bezner Kerr et al., 2008; Matsuyama et al., 2013; Mwangome et al., 2010). However, a common child feeding practice which featured in some of the reviewed papers (Leshabari et al., 2006; Mwangome et al., 2010; Mwaseba and Kaarhus, 2015; Thairu et al., 2005) was “almost exclusive breastfeeding”. This refers to the practice of feeding children non-nutritive substances such as water and herbal fluids, or very small amounts of nutritive substances such as sugar solution and fluids of cereals and grain flour, in addition to breast milk (Brown et al., 1998). Children under six months of age might be given fluids such as sugar solution or diluted cow milk or more rarely formula milk to supplement breast milk (Leshabari et al., 2006; Mwangome et al., 2010; Mwaseba and Kaarhus, 2015; Thairu et al., 2005). For instance, in their cross sectional study of mothers with children from 0-24 months old in Malawi, using 24-hour dietary recall, survey, and questionnaire, Hotz, and Gibson (2001), reported that children were fed light maize porridge before six months. Likewise, whilst Leshabari et al. (2006), report was silent on the exact viscosity of children’s food after 3 months, their reports suggested that a child might eat light porridge and cow’s milk prior to their third month of life and have a different consistency of food as they became older (Leshabari et al., 2006). This was reported in their Tanzanian study mapping existing local infant feeding practices and perceptions and attitudes towards HIV among mothers, using interviews, focus group discussion and observation (Leshabari et al., 2006). The studies give us an impression that most children under-6 months of age are not fed per dietary advice, indicating that besides being prone to infection these fluids may displace breast milk which is the optimal diet for children under 6 months.

Even though two of the studies reporting these findings were conducted in northern Ghana, only 2 out of over 30 ethnic groups in northern Ghana were included. It was, therefore, important to investigate other groups to observe how widespread the practice may be.

2.12.2 Feeding the under-five Child

After 6 months, a child requires a variety of food, prepared to different consistencies and fed at specific frequencies based on a child's age (Dewey, 2003; UNICEF, 2012). The subsequent sections present findings on the content of children.

2.1.12.2. Child dietary sources

The review showed a range of child feeding practices across the African continent, with similarities and differences in diets. However, the common dietary sources of a child’s diet reported in studies in West Africa (Pelto and Armar-Klemesu, 2011; Nti and Lartey, 2007b; Hampshire et al., 2009; Awumbila, 2003) (Gibson et al., 2009; Baye et al., 2012) in East Africa, (Paul et al., 2011) and (Hotz and Gibson, 2001) in southern Africa were cereals and legumes. The study reports suggested that for children, carbohydrate based diets were preferred though other food sources

were reportedly included in child diets. However, these foods such as vegetables, fruit, and food from animal sources were not routinely parts of children's diets. For instance, in a mixed study of mothers, community leaders, health practitioners and elderly men and women that was undertaken to determine intra-household gender relationships, access and control of household productive assets and child nutritional status, of the under-fives in Tanzania, Mwaseba and Kaarhus (2015), found that, like adults, a child might only eat indigenous green vegetables occasionally. Similarly, milk and other dairy products were found to be included in children's diets, only in areas where cow's milk was one of the staple foods (Mwaseba and Kaarhus, 2015; Wyatt et al., 2015; Hampshire et al., 2009; Kruger and Gericke, 2003) and not areas without milk. Similarly, in (Paul et al., 2011) study in a coastal area where fish was abundant, children were not given fish.

These findings suggest that the diets of many children across Africa may contain a limited variety of food sources against the recommendations of (Dewey et al., 2006), that children's daily diets should contain food from at least four of the seven food sources to ensure that they obtained all their daily nutrient requirements. The seven food groups are grains, roots, and tubers; legumes and nuts; dairy products (milk, Yogurt, cheese); flesh foods (meat, fish, poultry and liver/ organ meats); eggs; vitamin-A rich fruit and vegetables) and other fruit and vegetables (WHO, 2008). The limited variety of nutrients in children's diets was clearly demonstrated in the cross sectional survey conducted in Malawi to estimate the quality and quantity of complementary diet and feeding practices, as well as the dietary modifiers of iron and zinc in children's diets (Hotz and Gibson, 2001). Beyond counting the number of food sources in children's diet, Hotz and Gibson (2001) analysed the bioavailability of foods that were reported in the 24-hour dietary recall. They found that the bioavailability of most nutrients from foods that were reportedly given to children were inadequate. For instance, in the age group 9 to 11 months, Hotz and Gibson (2001) reported that the bioavailability of niacin, calcium, zinc and iron was inadequate for the estimated needs. Similarly, their report suggested that with the exception of protein, the bioavailability of energy and other nutrients in the complementary diet of children between 6 and 8 months was less than 80% of the estimated need (Hotz and Gibson, 2001). Whilst these findings provided more insight into the nutritive content of children's diet, the authors included limited information on aspects of the methods such as data analysis and sampling limiting the potential for replicating the study effectively.

2.12.3 Consistency of child diets

Diet consistency as reported in the review ranged from highly diluted porridges and cereal fluids to solid, mushy and family foods. These consistencies as reported did not match age-related diet consistency advice. In Niger (West Africa), a light family meal made from millet flour and water was reportedly fed to children throughout the day (Hampshire et al., 2009). In this study, the cultural context of childcare practices and child nutritional vulnerability was examined by interviewing mothers, siblings, chiefs and grandmothers (Hampshire et al., 2009). Similarly, Leshabari et al. (2006) and (Awumbila, 2003) reported that porridge and cow's milk were diluted with water and fed to children. Awumbila (2003), indicated that a younger child's porridge was

initially light and was gradually thickened as the child grew, although specific ages were not reported. In another study exploring rural feeding, weaning practices and the knowledge and attitudes of mothers and caregivers of children under-3 years of age, Kruger, and Gericke (2003) learned that children in South Africa were given highly diluted porridge. The consistencies reported by (Awumbila, 2003; Hampshire et al., 2009; Kruger and Gericke, 2003; Leshabari et al., 2006) ranged from light to soft.

These reports also showed that some children ate thick family foods, whose textures and consistency appeared to vary. In a longitudinal study in Tanzania examining the cause of the variation in weaning and complementary child feeding patterns, using focus group discussions and the interviewing of mothers, Sellen (2001b) found that children were usually given stiff maize porridge. Sellen (2001a) examined the causes of variation in weaning patterns and the extent to which infant centred maternal or household cues played a part in weaning decision making in Tanzania. The study employed semi-structured interviews, focus group discussions and 24-hour recall in households and amongst mothers with children under three years of age. Like the previous authors, Sellen (2001a) did not indicate whether food consistencies differed for the different age categories. Although, Pelto and Armar-Klemesu (2011) and Hotz and Gibson (2001) mentioned the consistencies of diets for specific age groups detail was limited.

In a cross sectional survey using questionnaire, dietary recall and anthropometric survey to estimate the quality and quantity of diet, identify feeding practices and modifiers of iron and zinc in the diet of 163 children between 0 and 24 months in Malawi, Hotz, and Gibson (2001) found that children ate food of two types of consistency. Children under 6 months ate light phala, maize flour porridge and children above 6 months of age ate hard phala. Although the exact consistencies of these foods were unclear from the report, they showed that there was an attempt to feed children with foods that seemed to fit their functional ability. Similarly, in Pelto and Armar-Klemesu (2011) study in Ghana, they explicitly concluded that children's diet was differentiated by age. Pelto and Armar-Klemesu (2011) employed a free listing strategy to obtain an emic inventory of child diets. Mothers listed different types of porridge as the food for children between 6 and 8 months old. The consistency of porridge in the Ghanaian context ranges from nectar thick to pudding thick liquids. Nectar thick liquids are generally of a consistency similar to tomato juice and will pour easily but with a greater resistance than water (CT.gov, 2016). Pudding-thick liquids, on the other hand, are the most resistant liquids when being poured (CT.gov, 2016). These consistencies appear to be similar to the consistencies of foods recommended for children between 6 and eight months of age (Brown et al., 1998; Dewey, 2003). According to Pelto and Armar-Klemesu (2011), mothers listed what were generally considered as family foods for children between 19 and 24 months old. However, the results did not show what consistency of foods children between the ages of 8 and 19 months ate.

The results of the review showed that mothers' might not consider diet consistency in child dietary decisions. The ability of a child to eat food that meets his or her nutritional needs depends on the

functional maturity of his or her neuromuscular system (Fox, 1996). Food textures and consistency should be compatible with the physiological ability of children to eat. Root, suck and swallow reflexes are present at birth for breastfeeding, and breast milk is a thin liquid that can be consumed with those two reflexes (Brown et al., 1998). One study, (Matsuyama et al., 2013) reported on how the maturity principle was used to decide child diet consistency. In this study (Matsuyama et al., 2013); participants suggested that children's throats were not mature enough to receive solid foods. Even though this reason appears physiological, the information provided does not indicate whether "immature children's throat" meant the same to participants as the technical advice given by health professionals. This suggests that children might be missing opportunities to obtain nutrients because their food might be diluted to the extent that nutrient levels might be lowered even when there is a variety food in the diet. Some children may also be at risk of harm from choking because they are receiving foods they are not able to swallow at their age. Additionally, there is evidence suggesting a critical window for introducing children to lumpy foods, after which it might be difficult to get children to eat such lumpy foods (Northstone et al., 2001). Consequently, feeding children with the wrong consistency of food either too early before they are ready to receive it, or too late, has implications for their nutritional status, safety, and their attitude towards food.

2.12.4 **Child Feeding frequency**

The recommended frequency of a child's daily feeding is guided by gastric capacity and the nutrient density of local foods (WHO, 2005). The review reports suggest that after a child was introduced to food other than breast milk, the number of daily feeds was inconsistent, especially in the case of children who continued to breastfeed (Baye et al., 2012; Bezner Kerr et al., 2008; Hampshire et al., 2009; Fouts and Brookshire, 2009). Only one cross sectional paper (Gibson et al., 2009) which explored the feeding of children between 6 and 23 months in Ethiopia reported that children between the age of 6 and 8 months were regularly fed 2 meals a day in addition to breastfeeding. However, this feeding frequency declined with increasing age, with a reduction of 25% within the 8 to 24-month age group.

Feeding frequency generally did not depend on the age of a child (Bezner Kerr et al., 2008; Mwangome et al., 2010) though this is recommended (WHO, 2005). In Niger, mothers did not have regular times to feed children (Hampshire et al., 2009). Mothers only fed children when they cried, reached out for food when others were eating or when a child could talk and verbalise their need for food (Hampshire et al., 2009). Additionally, children below five years of age had two meals a day, breakfast, and lunch, because dinner was observed to be ready at 8 pm when children were asleep. Similarly, in their study in Tanzania, even though they did not report on the exact frequency of daily feeding, Mwaseba and Kaarhus (2015) found that mothers sometimes prioritised other activities such as farming over child feeding. This irregular and inadequate feeding frequency suggests a high potential for chronic hunger in children.

2.13. **Child feeding influences**

The papers reviewed demonstrated that sociocultural and economic factors affected child feeding either directly or indirectly, in most of the study settings.

2.14. **Poverty, food insecurity and food production**

The economic structural context within which culture operates was reported in most of the papers as an important factor in child feeding.

Food availability and accessibility were identified in the review as impacting on child feeding (Kimani-Murage et al., 2011; Nordang et al., 2015; Hampshire et al., 2009; Matsuyama et al., 2013; Mwangome et al., 2010; Paul et al., 2011; Sellen, 2001a). In rural Tanzania, Nordang et al. (2015), assessed nutritional status, feeding practices and risk of undernutrition in a study of 152 children under five years olds. They identified that economic indicators such as income generating activities and food availability were linked to underweight and growth stunting in children. Although their statistical analysis did not show a direct link between food availability, economic indicators, and the feeding practices, their study found suboptimal feeding practices like children eating from only one food group a day and non-exclusive breastfeeding.

The variety and consistency of foods offered to children were reported to be particularly affected by food availability (Pelto and Armar-Klemesu, 2011; Nordang et al., 2015; Colecraft et al., 2006; Appoh and Krekling, 2005; Paul et al., 2011). In their study exploring the social and cultural influences on feeding practices and nutritional intake, Paul et al. (2011) found that mothers could not feed their children foods such as mangoes, dairy, iron, and zinc based foods because of their inability to afford such food items. This excerpt is an example of how economic insufficiency can negatively influence child feeding.

"Mothers in the inland rural site said, they could not feed seasonal mangoes to their children because "people sell them" in the larger markets or on the island of Ungula. The access to dairy and iron- and zinc-dense flesh foods was limited because of local and household food insecurity"
(Paul et al., 2011) ID1

In different studies conducted in Niger, Zambia, and Kenya, the thickness of maize porridge was reported to vary with seasonal food abundance or scarcity. (Hampshire et al., 2009; Matsuyama et al., 2013; Owino et al., 2008). For instance, during the lean (non-harvesting) season, when millet and corn were scarce, porridge or millet drinks were diluted by using a small proportion of millet or corn dough or flour to large quantities of water to increase the volume of the meal thus enabling children to be satisfied more quickly (Matsuyama et al., 2013). The Hampshire et al. (2009) study of the cultural context of children's nutrition in Niger found that in seasons when unprocessed cow's milk was scarce, water and herbs, millet and strained maize porridge was fed to children. Whereas this measure was taken to ensure that all children under five years old were fed during this time of scarcity, children who were not completely weaned from breastfeeding would receive more cow's milk than other children (Hampshire et al., 2009). Hampshire et al. (2009) also discovered that most children were weaned during the lean season. Mothers thought it was

hopeless breastfeeding children as they themselves were inadequately fed and consequently were unable to produce sufficient breast milk. Furthermore, a study to explore the use of food from animal sources for children in Ghana, Colecraft et al. (2006) identified the reduced availability of the animal products in some settings and affordability as factors that prevented the use of animal products in children's diets.

Additionally, the review indicated that in some communities the bulk of the food supply was home grown. However, because of lack of funds to produce the quantity and variety of food required households were habitually unable to meet their nutritional needs (Bezner Kerr et al., 2008; Hampshire et al., 2009; Kimani-Murage et al., 2011; Leshabari et al., 2006; Matsuyama et al., 2013; Owino et al., 2008; Paul et al., 2011). It was reported that most households depended on the sale of their farm produce to meet non-food household needs (Owino et al., 2008; Pelto and Armar-Klimesu, 2015). This meant that the ability to purchase food from markets was limited. These factors in addition to the lack of income generating activities in most of the settings studied appeared to affect the provision of food and child feeding (Awumbila, 2003; Colecraft et al., 2006; Pelto and Armar-Klimesu, 2015).

2.15. Cultural knowledge vs. public health knowledge

Among the factors identified in the review that influence child feeding was the nutritional and feeding knowledge of caregivers, mothers, and other relevant individuals. Though some of the studies reported that participants obtained child feeding knowledge from health professionals, the community's local knowledge appeared to have a bigger impact on child feeding. Participants' knowledge of nutrition and WHO/UNICEF recommended child feeding practices was reported by studies including (Appoh and Krekling, 2005; Colecraft et al., 2004; Owino et al., 2008; Pelto and Armar-Klimesu, 2011; Pelto and Armar-Klimesu, 2015; Kruger and Gericke, 2003). In their focused ethnographic study in rural Kenya to identify potential interventions to improve the quality, availability and affordability of food consumed by infants and young children using interviews, community observation and 24-hour dietary recall Pelto and Armar-Klimesu (2015), found that most of the participants had knowledge of the concept of food and diet quality. Participants also knew the significance of nutritious food for the survival, growth, and development of children. The views of participants aligned with public health concepts of nutrition. Appoh and Krekling (2005); Kruger and Gericke (2003); Matsuyama et al. (2013); Pelto and Armar-Klimesu (2011) whose studies were conducted in Ghana, South Africa and Kenya respectively, and reported on participants' knowledge of child feeding and nutrition, presented mixed messages on participants' views with regard to nutrition. From their Ghana study, Pelto and Armar-Klimesu (2011) reported that many participants had the idea of nutritious food being essential for the health of children and listed foods, indicating their nutritional importance. However, some of the participants were not aware of the nutritional significance of some nutrients such as vitamins and food sources such as fruit. Some women conceptualised vitamins as medicines, and fruit such as oranges as things given to boost appetite and treat constipation. Nutritious food was also conceptualised in terms of the

hygienic nature of the diet rather than the nutritive value of the food sources included in the diet (Pelto and Armar-Klimesu, 2011).

Overall, the studies showed that most mothers and other relatives of children had knowledge about nutrition (Aborigo et al., 2012b; Appoh and Krekling, 2005; Nti and Lartey, 2007b; Paul et al., 2011; Pelto and Armar-Klimesu, 2011). However, the evidence as seen in (Pelto and Armar-Klimesu, 2011) study appeared to suggest that interpretation of that knowledge and thus its use in daily child feeding may not be in line with principles of nutrition.

Most of the studies did not indicate the extent to which the concept of nutrition was explored with participants. However, a few studies (Paul et al., 2011; Pelto and Armar-Klimesu, 2011; Leshabari et al., 2006; Omer-Salim et al., 2007) appeared to show that there was either a lack of connection between participants' cultural understanding of nutrition and public health information, or prevailing controls made it impossible for caregivers to apply the public health knowledge. The review indicated that participants' poor compliance with public health advice appeared to be associated with a conflict between this and participants' indigenous understanding of nutrition (Paul et al., 2011). In a mixed method study in Zimbabwe to determine the influence of the local social and cultural context on feeding practices and nutritional intake, Paul et al. (2011) found that even though participants reported that they had received information from health professionals, most of their child feeding practices were not based on such information. Mothers reportedly failed to follow the advice of nurses not to give solid food before the age of six months because they felt that it was unrealistic for children to depend on breast milk alone (Paul et al., 2011). Whilst the study did not indicate why mothers thought it impracticable to feed children solely on breast milk, it appeared that they based their judgement on intuition, shaped by experiences in their communities. Participants also avoided feeding children fish because they believed it caused tooth decay and avoided breastfeeding in pregnancy because it was considered inappropriate (Paul et al., 2011). Paul et al. (2011) provided a plausible explanation for why an individual's knowledge of child feeding did not necessarily translate into practice. They suggested that perhaps caregivers gained a significant amount of indigenous knowledge through socialisation in their communities and might not be able in some cases to reconcile that knowledge with the new knowledge they had received from health professionals. In these circumstances, to simplify the feeding of their children, caregivers might continue to apply their indigenous knowledge. Participants were reportedly unable to articulate why they had ignored advice from health care professionals in favour of traditional practices (Paul et al., 2011). However, Paul et al linked this finding with the assertion of adult learning theories that adults might fail to adopt new guidance well when it conflicted, to a great extent with their existing knowledge (Cattaneo and Quintero-Romero, 2006). Public nutrition information in Ghana targets women of reproductive age, who by this time would have already received a lot of information on nutrition in their community as part of their enculturation. This could then make it difficult for them to build the new information received from health professionals into their existing knowledge base. Consequently, these individuals might resort to maintaining their existing knowledge as suggested by (Paul et al., 2011). This explanation

appears to be supported by the findings of (Omer-Salim et al., 2007) qualitative semi-structured study in Tanzania, who reported that mothers indicated they did not believe nurses' explanations that breastfed babies should not receive water until six months, and so ignored the advice. In the study, mothers reported that they had always given children water, and did not understand why this could be harmful as water was generally considered good. Two potential explanations arise from the reports of the participants in this study. Either participants did not receive the right information from health professionals, or they were as grounded in previous knowledge as postulated by (Paul et al., 2011) that they maintained the practices they knew.

Similarly, in another study conducted in Tanzania, to develop a culturally sensitive HIV counseling intervention for child feeding, Leshabari et al. (2006) reported that in interviews with women about feeding practices, participants vehemently opposed some of the advice health professionals gave them because it was seen as neither sensible nor feasible. Participants reported that they could not understand why they had to express breast milk and keep it to feed a child as it was associated with stillbirths and miscarriages in their communities (Leshabari et al., 2006). The mothers in this study also could not understand why they were advised not to give child water when they perceived their breast milk to be insufficient and their children cried (Leshabari et al., 2006). These findings when considered alongside the (Paul et al., 2011) argument, show that participants either could not fit the information health professional gave them with their own understanding or the information was not presented in a way that could easily be interpreted to make sense to participants. Furthermore, in other studies, it was reported that even though mothers were aware of the advice to feed children immediately after delivery to provide them with colostrum, some of them could neither understand nor appreciate giving colostrum to their children because not giving colostrum was an ingrained practice within their group (Awumbila, 2003; Appoh and Krekling, 2005).

It is evident that caregivers do not always follow public health recommendations on child feeding despite being mostly aware of and understanding them. It appears that the primacy of local traditions and knowledge over health guidelines in child feeding may need to be further explored. The next section reveals values, beliefs, norms, and participants' perceptions of child nutrition reportedly impacting on child feeding in African communities.

2.16. Traditions, values, norms, community socialisation, and child feeding

Individual behaviours in a society are mainly dictated by the culture of the group (Winkelman, 2008). To act in alignment with one's culture, the individual has to be socialised in a way that equips him or her with the skills for behaving according to the culture's norms (Hammersley, 2007b; Fetterman, 1989). The evidence from this review shows that in most settings, caregivers' child feeding practices were more likely to follow community's normative ways such as, who gets the biggest share of food, who make decisions and what is considered food in groups.

2.16.1 "Good wife" phenomenon

Whilst women were reported to be the central actors in the feeding of children, this role did not empower them to make the autonomous decisions that ultimately determined children's food intake. The mothers' position and role within the household, which was found to be mainly culturally defined, was the main influence on this decision-making role. In (Mwaseba and Kaarhus, 2015) study examining intra-households gender relationships impact on child feeding, it was reported that an element within the socialisation of wives was to engender respect for their husbands and to work hard in their marital homes in order to demonstrate that they were well trained and fit to be wives and home makers. As a result, even though fathers and mothers were both expected to contribute to the production of food, mothers were blamed when there was inadequate food in a household (Mwaseba and Kaarhus, 2015). Consequently, even though mothers worked hard to ensure food security, the purpose of their hard work was not directly aimed at ensuring the adequate child feeding but to signpost their 'good wife' status. Focusing on recommended community child feeding practices and norms was seen as a means to achieve good wife status. In this study, some mothers were reported to have suggested that hard work and ensuring the availability of food were greater priorities for them than managing child feeding. This implied that the variety and quality of food and the processes of child feeding were not priorities. This socialisation of mothers to prove themselves has played out in child feeding in various ways. For instance, (Mwangome et al., 2010) study in Gambia, highlighted that because women had to work and provide resources for the upkeep of households to demonstrate their good wife status, children under five were left with siblings, some of whom were themselves children who might not feed the under five year olds adequately. This appears to be facilitated by gender control socialisation of mothers which impacts on child feeding negatively. It is reported that, in some of the studied communities, men were recognized as household heads (Mwangome et al., 2010; Mwaseba and Kaarhus, 2015; Nordang et al., 2015; Thairu et al., 2005), which is associated with practically absolute decision making power in settings such as Gambia. Mwangome et al. (2010) study in Gambia, exploring factors that determined mothers' choice of children's health and nutrition practices, found that decisions on number of wives, child bearing, and child spacing were solely made by men due to their headship status. However, women were the sole caretakers and family breadwinners, who have to find money for implementing the decisions men make (Mwangome et al., 2010). This places a burden on women, limiting their ability to feed children efficiently. Even though mothers might generate enough income to provide food for their children, they were limited in their ability to decide how the income would be used because their husbands decided how the income was disbursed, and if they chose, they could decide to use the money to acquire more wives rather than to use it for providing food for their children (Mwangome et al., 2010).

The recent economic empowerment of women through the provision of capital to trade and farm by governmental and governmental organisations (Folbre, 2006; Jana, 2011) has had a major impact on child feeding since this may help to ensure income generation and food availability.

However, as shown in this review, the absence of mothers from the household through trading and farming might also impact negatively on their ability to ensure their children are adequately fed by others. Thus to improve the effectiveness of economic empowerment of women as a strategy to mitigate child nutrition, further measures to manage related issues such as cultural barriers limiting the autonomous decision making of younger women, may be necessary.

2.16.2 Intra-household food allocation

Intra-household food allocation was found to be associated with a norm that favoured other members of the family (especially men) more than children. In their study in Niger, exploring the cultural context of child care practices and nutritional vulnerability, Hampshire et al. (2009), reported that food might not be individually served to members of the family after the first year of life. Thus, children from one year onwards helped themselves from food that was prepared and left for all members of the family. However, non-routinely consumed or special foods such as meat would usually be allocated among members of the family when it was prepared, and fathers would usually be given the best part of the meat (Hampshire et al., 2009). Mwangome et al. (2010) and Colecraft et al. (2006) also reported that the best food, which would usually be the protein component, was served to adults and fathers in particular. This excerpt summarises how food was allocated in some of the settings in favour of men rather than children:

‘The men are our husbands, and we respect them and so give them a larger share. They are the leaders, and so, we give them the best parts’ (Mwangome et al., 2010)

Whilst this is how food may be allocated in families, it is growing children who need more nutrients for growth and health. These findings are indicative of cultural practices, which may adversely affect children’s their nutritional wellbeing.

2.17. Authority Figures

Another aspect which affected mothers’ ability to feed children was respect for figures of authority. Mothers’ in law and elderly women were widely reported as important influence on child feeding (Aborigo et al., 2012a; Aubel et al., 2004b; Awumbila, 2003; Baye et al., 2012; Bezner Kerr et al., 2008; Leshabari et al., 2006; Matsuyama et al., 2013; Mwangome et al., 2010). It was reported that most local community knowledge on child feeding was transmitted by grandmothers and implemented by mothers (Bezner Kerr et al., 2008; Leshabari et al., 2006; Hampshire et al., 2009; Matsuyama et al., 2013; Aubel et al., 2004b). Whilst some mothers felt the need to implement the recommendations of grandmothers because they shared their beliefs it was also evident in the reports that some mothers would have preferred alternative ways of child feeding when given the opportunity. For instance, in their study in Tanzania to describe mothers’ perceptions and approaches to child feeding and feeding support Omer-Salim et al. (2007), reported that older women were key sources of information that contradicted health professionals’ advice, and mothers could not contradict grandmothers because they were senior and it was considered disrespectful to oppose their recommendations.

Community originated feeding practices were also perpetuated because of the norm that grandmothers had greater rights over their grandchildren than the children's biological mothers. In (Bezner Kerr et al., 2008), it was reported that mothers felt frustrated at their inability to carry out health professionals' recommended practices because their extended families valued the expertise of the grandmothers and supported them in imposing their practices. Mothers were not able to contest grandmothers' recommendations. Similarly, Aubeil et al. (2004b) reported in their study in Senegal, that there was a high degree of consensus among men, community leaders, grandmothers and even mothers that by virtue of the age and expertise of grandmothers, their recommendations on child nutrition and feeding must not be questioned. Considering this level of socialisation in the various studied communities on grandmothers' expertise and the value of their role in child feeding, it is obviously challenging for mothers to act alone to feed children in ways contrary to grandmothers' recommendations (Leshabari et al., 2006; Thairu et al., 2005).

2.18. Summary of Feeding practices

The review has shown that even though some children within the African continent are fed optimally most children may be inadequately fed. Not only are children under six months not exclusively breastfed, but most of them miss the opportunity of receiving colostrum which is important for their immunity, growth, and development. Children may receive various types of fluids within the first days of their birth as traditional rites or as food because of perception of dirty breast milk. These fluids may be contaminated but also displace breast milk depriving children of vital nutrients.

Child diets were also found to be predominantly of carbohydrates, which limits their intake of essential nutrients. Most children ate family foods, which could be of any variety and consistency irrespective of their age. In terms of frequency of feeding, some children over the age of 6 months were given no supplementary food in addition to breastmilk whilst others ate up to five times a day.

Many factors influenced child feeding. These included sociocultural and economic issues such as poverty, food insecurity, and food production. There were many sociocultural factors at play in the resolution of the conflict between a community's prevalent traditional mores (traditional values, norms, and beliefs in relation to child feeding) and the interpretation and application of scientific dietary advice.

In general, the review appeared to show that a range of diverse factors affects child feeding across Sub-Saharan Africa. What was not clear was how the factors interact to inform child feeding in different settings. Eight of the reviewed studies were conducted in Ghana. However, only two contributed information about child feeding for only children under- 6 months.

2.19. **Quality assessment of studies**

2.19.1 **The appraisal tool**

I assessed the quality of the papers included in the review using a tool designed to appraise primary research articles from across research strategies and paradigms (Hawker et al., 2002). This tool was used because the studies in this review were not limited to a specific design paradigm. The 9-item criteria were used to assess and evaluate the quality of results and methodological rigour with regard to:

1. Abstract and title
2. Introduction and aim
3. Methods/data
4. Sampling
5. Data Analysis
6. Ethics/bias
7. Results
8. Implications and usefulness
9. Transferability/generalizability

The tool allows reviewers to assign a numerical value to the individual criteria to demonstrate the worth and rigor of the various methodology's elements such as sampling and data collection. The numerals represent a summary of the quality of each area on the checklist. The summed scores give an overall picture of the study quality. Nine (representing poor) is the lowest score, and 36 (representing good) is the highest score a study can obtain. The lowest score for the articles reviewed was 21 and the highest was 35. Poorly rated articles had an average of two points for each criterion on the critical appraisal checklist. On the other hand, the articles that scored 35 points had an average score of 3.8 for each of the items on the checklist. This showed that those studies were very robust.

2.19.2 **Quality of the included studies**

2.19.3 **Quantitative design articles**

Ten (10) quantitative studies were included in the review. These consisted of nine cross-sectional surveys and one longitudinal study. The sample included 969 households, 10,934 children-under five and 320 mothers, two health workers and one religious leader. The modal age group range of the targeted population of children under-sixty (60) months was the age group 6 to 23 months.

In addition to the procedural limitations identified in these studies, quantitative design studies are generally not the most suitable for exploring the perspective of child feeding this review sought to understand. Cross sectional studies are a good way of investigating and presenting a snapshot picture of the prevalence of a health phenomenon within a population but may be less suitable for studying habitual feeding practices, the main aim of this review. However, some of the studies in this category explored concepts beyond the question of this study and this allowed them to be included in the review. Cross sectional designs appeared useful tools for studying aspects of the reviewed studies' aims such as the situation of child nutritional statuses, dietary intakes, and association between food insecurity and stunting which were explored alongside feeding practices

in some of the studies (Gibson et al., 2009; Nordang et al., 2015; Nti and Lartey, 2007a; Tessema et al., 2013).

The quantitative studies in this review that explored child feeding practices mainly compared participants' child feeding practices with WHO/UNICEF recommended feeding practices. This provided significant evidence on the level to which caregivers conform to recommended dietary practices. Contrarily, this does not provide us with adequate information on why caregivers choose to engage in specific feeding practices. The evidence from most of the studies suggests that most caregivers had received information on public health recommended feeding practices and some studies which actually explored participants knowledge reported that most participants had knowledge about recommended child feeding practices. Unfortunately, there was a paucity of information on what may inform caregiver decisions to engage in particular feeding practices.

The snapshot nature of cross sectional designs and the standardised nature of their data collection tools limits these studies ability to explore in-depth and obtain data that are required for establishing habitual patterns of child feeding.

Questionnaire, 24-hour dietary recalls, and anthropometric measures were reportedly used in the quantitative review studies data collection. These tools are most appropriate for obtaining data to describe prevalence, frequencies, nutritional status and specific feeding indicators which are measurable. However, some of the quantitative studies reported on specific value based feeding practices such as food taboos, and beliefs (Appoh and Krekling, 2005). The latter which are complex, value based phenomena, and which may explain the rationales for some feeding practices could be better explained using exploratory research designs. For instance, even though 24- hour dietary recall was a common tool, and indeed useful in establishing what food a child ate in a 24 hour preceding the recall, this tool may not be effective in knowing the exact child feeding pattern overtime, feeding pattern may differ according to seasons. Consequently using 24-hour dietary recall to generate data for explaining habitual feeding pattern may be misleading; as 24-hour dietary recall only collects dietary data for 24 hours (Raina, 2013). Thus whilst this tool may be pragmatic in many situations, it may not yield data required for explaining patterns of feeding behaviour.

Indeed, some of these quantitative studies (Appoh and Krekling, 2005; Nti and Lartey, 2007a; Wondafrash et al., 2012) used exploratory data collection tools such as focus group discussions and structured questionnaire to interview participants. However, because positivist traditions underpin their designs, this could limit researcher's ability to explore for a more detail information that could explain underlying issues unknown to the researcher.

Besides the difficulty of using a quantitative approach to understanding the underlying value-based perspective of child feeding, methodological rigour of quantitative studies means demonstrating the reliability and generalizability of research results. Most of these studies assessed against the Hawkers' critical appraisal tool criteria were 'fair', indicating that information on most methodological components was missing. For instance, in a study of 4299 children in Kenya assessing infant feeding practices and determinants (Kimani-Murage et al., 2011), there was limited information on the method of recruitment. Similarly, Baye et al. (2012) stated a sample size

but provided no further information on the sampling. This lack of information makes it difficult to determine the generalizability of the findings to similar population of children. For instance, the nutrient needs of children differ by development age. It is, therefore, useful for researchers to clearly demonstrate recruitment and sampling of children included in a study to make it clear for generalising research results. Some studies (Nti and Lartey, 2007b; Wondafrash et al., 2012), did not explain how data collection tools such as questionnaire were developed and standardised, and others also failed to show the scope of child feeding the studies set out to study. Notwithstanding, the outlined limitations, in the findings, these studies give an important perspective on child nutrition and feeding in Africa.

2.20. **Qualitative design articles**

Sixteen qualitative studies were included in the review. Qualitative designs aim to explore human perspectives on phenomena that are not measurable using natural communication approaches such as observations and conversations style interviews. The type of qualitative design applied in a study is selected based on how well it fits the research aim. All 16 studies had clear aims, which included exploring feeding practices, examining the social and cultural influences on child feeding; exploring caregivers' choice of food, rural and child feeding practices among others. These aims make the qualitative approach appropriate for studying them. However, not all subtypes of qualitative designs used were justified. Some of the internal methods of the qualitative design were not also robust.

It was observed that most articles did not clearly state the exact type of qualitative design applied. It is expected that perhaps the concepts being studied could not fit neatly in one type of qualitative design. However, it is also expected that researchers would explain their rationale for not tying their methods with a particular design, as this demonstrates that rigorous reflection went into the process of designing the study, and provides evidence that the results are authentic. It appears some of the research aims could better be investigated with specific qualitative studies. For instance, in their study to identify existing beliefs and infant feeding behaviours of HIV mothers (Leshabari et al., 2006), it is evident that this study could be explored using ethnography as it involves understanding both behavioural and perceptual disposition of the mothers in relation to child feeding. However, the authors identified their data collection methods (interviews and focus group discussion) without information on the theoretical orientation that informed their decisions. Additionally, it appears aspects of the aims could be best studied with alternative methods. For instance, ethnography was reportedly used in identifying who directly provides food to children, and factors that may predict child feeding (Fouts and Brookshire, 2009). In the case of (Fouts and Brookshire, 2009), even though ethnography appears appropriate, observations, which was the only data collection method described in the report was not specified to show how observer effect was managed. The data was also statistically analysed and presented. Perhaps authors may have explanations for their approach. However, without information, gauging the credibility of the study's results is challenging. Besides, predictive studies are mainly quantitative studies that aim to establish a correlation between two variables and require applying strict quantitative strategies that

ensure that confounding factors are control. This methodological discrepancy, therefore, makes the results of this study difficult to use.

Other methodological issues that limited the credibility of the qualitative studies are the sampling and data collection procedures. One of the issues identified was the number of participants and the duration of data collection. In (Omer-Salim et al., 2007) study, for example, the sample size was 8 mothers, and the aim was to explore and describe mothers approaches to child feeding and feeding support. Though this could be an appropriate sample in qualitative research, there was no adequate information to indicate whether enough data was generated from the sample size since it appears small. This is especially unclear when the interviews were only single interviews with each of the participants. On the other hand, in a study with 93 participants (Hampshire et al., 2009), one month data collection was conducted. Meanwhile, different data collection methods namely participant observation, semi structured interviews and focus group discussion were used, and a heterogeneous group of participants including mothers, siblings, grandmothers, village leaders, traditional birth attendants and traditional leaders and women's' groups. Considering the category of participants', the sample size, and the limited information provided by the authors on the methods, one may wonder how in-depth the authors explored the scope of the phenomena they reported on. This is because data collection reportedly took place within one month period.

Considering the subjective nature of qualitative studies perhaps the weaknesses identified in the study are justified. However, with the lack of information, and the absence of reflexivity, which is an important measure of accounting for biases of the researcher and the influence of the environment on the data generation, it is difficult to gauge the trustworthiness of the results of most of the qualitative studies.

2.21. Mixed method design articles

Ten of the studies used a mixed method design. The mixed methods research approach is a pragmatic strategy for using the two primary paradigms of research (quantitative and qualitative) in investigating one phenomenon (Creswell and Clark, 2007). Mixed methods allow the measuring of phenomena and provide an understanding of underlying reasons, motivations, and opinions that give meaning to phenomena (Creswell and Clark, 2007). Studying child feeding practices with mixed methods may help us understand the meaning of the practices as well as the extent of specific practices. Most studies (Appoh and Krekling, 2005; Kerr et al., 2007; Mwaseba and Kaarhus, 2015; Nti and Lartey, 2007a; Owino et al., 2008; Sellen, 2001a; Wyatt et al., 2015), the motives was to explored a relationship between feeding practices and other concepts such as nutritional status, knowledge of participants or economic status and geographic context. However, none of those studies stated which aspect of the study each method was applied and the rationale. Moreover, there was no adequate information on the different aspects of the studies to help make an informed decision on most of the quality issues. There were no differences between how quantitative and qualitative samples were drawn and which data collection methods were applied in the different methods (Kerr et al., 2007; Owino et al., 2008; Paul et al., 2011; Sellen, 2001a). Analysis and presentation of the result were equally problematic. Without reporting how analysis

was conducted, Mwaseba and Kaarhus (2015), presented results with P-values and Z-scores. Some studies also presented results on one method and not the other (Paul et al., 2011; Sellen, 2001a). In general, most of the mixed method studies were not robust. Each study had some poor and some fair elements. The quantitative aspects of most studies did not meet the validity and reliability criteria, and could not be generalised for the populations from which they were drawn. The reports also placed doubt on the trustworthiness of most of the qualitative studies, which meant that they might not be helpful in informing practices among the populations from which the samples of these studies were drawn. Nonetheless, the studies provided opportunities for the reviewer to reflect.

2.22. Summary of methodological rigour of studies

The overall rigour of studies methods was fair. However, most studies could score better if there was adequate information on the field procedures. The studies either explored all the concepts or the main concept of the review study in addition to other concepts. The main concept was the feeding of children under-five years of age. Some of the studies explored other concepts such as the nutritional status of children, which is not an aim of this review even though relevant. Therefore, whilst some of the methods were inappropriate for exploring the review question, those methods were justified because of the addition of the studies' other concepts.

The aim of this review was to examine the existing evidence on cultural feeding practices. Practices are hands-on activities guided by specific principles. Culture, on the other hand, is a qualitative, context specific concept. Feeding and culture are value-laden subjective concepts and understanding people's perspectives about them require using natural means of communication such as observing and asking questions. The most appropriate way of understanding the nature of these two concepts is the qualitative explorative approach since it allows researchers to interact directly with participants. However, it may not be the best way of knowing the nutrients children consume or their nutritional status. Some of the review studies used a qualitative approach to explore these concepts implying that the choice of methodology was consistent with the philosophical perspective. However, some of the studies did not apply the philosophical perspective in their choice of methodology. Whilst there may be rationales for not using the most appropriate methodology, some studies did not provide adequate information to justify this.

Research methodology and methods must be consistent. The methods such as sampling, data collection, and data analysis were largely of fair quality with a few being of good or poor quality. No study was of very poor quality. Studies with good quality methods used appropriate methodologies and provided clear and adequate information about the procedures. Fair quality studies, on the other hand, employed appropriate methods with scanty information on how researchers applied them. Poor quality studies used methods that were not appropriate and provided inadequate information to justify the use of such methods. Specific weaknesses of the studies included using pre-determined questionnaires to generate data for habitual feeding behaviours, which were not appropriately defined, and analysing semi-structured interview data statistically. Additionally, the reliability and validity of some of the questionnaires were not

reported. Other issues included neither mentioning ethical issues nor analysis processes in the reports.

In qualitative studies, in particular, reflexivity is an important tool for accounting for researcher and participant influences on the study. This tool was not mentioned in any of the 16 qualitative studies. In quantitative studies, generalisation is dependent on sampling, however, some studies did not account for their sampling processes. There were examples of both poor and good quality presentation of results from all three categories of study designs. Although some studies did not use quantitative methods to generate their data, some of the data were presented quantitatively and vice versa.

In generally, the findings presented by most papers were aligned with the aims of the paper. However, it is not clear whether all the results represented the perspective of participants on child feeding since the quality of some of the methods were not verifiable in the reports of the studies. This was reflected in the discussion sections of poor studies. Discussions of some of the results were speculative. Even though cultural factors emerged as prime influences on child feeding, the information on how data was generated was not clearly stated.

A study of feeding practices using a methodology that aligns with the philosophical perspective that feeding practices are behavioural and informed by peoples' culture requires dialectic means to generate information whereas five of the eight studies used quantitative approaches. Quantitative approaches do not allow the opportunity for participants and researchers to engage dialectically to co-construct the issues surrounding child feeding, to provide deep understanding. This limited the rigour of the studies.

2.23. Gaps and Conclusion

The review revealed knowledge gaps in the practices of child feeding and some flaws in its study mainly due to methodological difficulties. In most of the studies, 'practices' was the concept used to denote the perspective of child feeding the studies aimed to investigate, which resulted in such studies being included in the review. In describing the methods and background of the studies, however, some authors indicated the studies were investigating a cultural or economic or some other perspective of feeding practices. Other studies actually indicated they were investigating specific feeding concepts such as dietary intake, diet diversity or quality. In addition, some of the results were structured consistently in relation to the infant and young feeding practices recommended by (UNICEF, 2012). Two out of the 36 studies had 'culture' as a term in their titles, showing that most of the studies did not specifically address culture. A few others studies which had 'context' as a focus in the background also mentioned culture or some cultural elements as concepts that were explored in their studies.

Although understanding a culture's role in child feeding was not a primary aim of most of the studies, cultural elements were reported by most as major factors influencing child feeding in the studies' communities, demonstrating the significance of culture in child feeding. The findings from the studies suggest the importance of culture but there has been limited specific study. This suggests the need for a culture-specific study.

All the studies conducted in Ghana mentioned culture related influences on child feeding. However, only three of the studies used the qualitative approach, which is adjudged the most suitable for exploring subjective phenomena such as culture. None of these Ghanaian studies directly targeted culture as their main objective. The two studies conducted in northern Ghana had same cultural themes and used qualitative methods. Nonetheless, the nature of the studies rendered their findings limited in representing cultural feeding practices of children under five in rural northern Ghana.

Firstly, Northern Ghana has a high concentration of different ethnic communities with unique cultures and languages. Rural northern Ghana is characterised by the presence of a distinct ethnic group approximately every 4 kilometres. The two studies conducted in the upper east region of northern Ghana were conducted with two different ethnic groups between which lie three other distinct ethnic groups. There was insufficient data in either study to describe and explore the practices relating to these different ethnic groups.

Secondly, one of the studies was limited by the use of a single tool, interviews. Even though, the other study reportedly used direct observation, focus group discussion and interviews, there was little information to verify how this was done.

Finally, in one of the studies, the age group was under- 7 days and in the other under 6 months. These groups were too narrow to provide sufficient information to cover the whole age group 0 to 5 years. Meanwhile, existing evidence showed that undernutrition in the under- five year age group was common after 6 months of age (Dewey and Brown, 2003). During this time, there was usually an increase in physical activity, increasing the need for nutrients to provide energy. Children at this age also directly interact with the environment, and this exposes them to microorganisms. This necessitates a strong immune system, which depends on nutrients. Thus with the age limits of the two studies, their results might not be transferable to all children under five years of age.

2.24. Summary

The review has clearly shown that culture plays a significant role in child feeding. However, the review has also shown that there is limited evidence on local child feeding practices which are based on cultural values. The latter, the current state of undernutrition especially in the north of Ghana, and the suboptimal child feeding practices demonstrated in chapter one, inspire the current study. Even though there were challenges with the methodologies of some of the studies, others studies applied rigorous methodological process. The lessons from the review, therefore, helped in the choice of methodology and the conduct of the field work. The subsequent chapter presents the methodology applied in the study.

CHAPTER THREE
METHODOLOGY

Chapter 3: Methodology

3.1. Overview

This chapter presents the theoretical basis for the methods that were used to complete the fieldwork of this study. The aspects of the methodology that will be explained and justified here include the research aim, the rationale for the methodology chosen, the qualitative research design and the ethnographic approach.

3.2. Research aim

The aim of this study was to explore and describe the cultural child feeding practices in rural northern Ghana. The study explored questions such as what constituted child food, how food was prepared, what factors influenced the food selected for a child and child feeding, and the main players in child feeding.

3.3. Rationale for choice of methodology

The selection of a scheme of principles to guide the practices of this study was an essential part of the study's design. The aim of this study was the primary determinant of the methodology. Regarding the aim of this study, the key context is cultural and the main phenomenon is child feeding. These two concepts, therefore, guided the choice of the methodological approach, and are explored as a way of showing the rationale for the choice of methodology.

Analysis of study concepts

3.4. Child feeding

Feeding is a hands-on physical activity with intended biological outcomes, namely optimal nutritional status. The feeding activity is a single direct activity but it is preceded by several earlier processes and influenced by several factors. Choosing and preparing food are examples of processes, and the possession of appropriate information and physical abilities are examples of enabling factors. One may find food through personal production from one's farm or through purchasing. However, factors such as good rainfall pattern, a farming technology that ensures a good harvest, and income generating activities that provide money (either for farming or purchasing food), may influence the acquisition of food (FAO and WHO, 2014).

Information which influences an individual's food choices, food preparation, and child feeding may come from several sources such as health systems or the individual's culture. Guidance in relation to recommended child feeding practices to ensure optimal nutrition is widely and frequently delivered by health professionals in Ghana (GHS, 2010; DGHS, 2015). There is evidence available on the extent to which children under five in Ghana are fed according to these recommendations (DGHS, 2015; Gyampoh et al., 2013b; Gyampoh et al., 2014; MICS, 2011a).

The literature also indicates that local cultural understanding underpins child feeding in many African countries including Ghana. However, the existing evidence on the influence of culture on feeding practices in Ghana is sparse and unclear. Learning more about this requires engagement with the people carrying out the practices to better understand their impact. Since underlying

traditional practices are based on cultural values, exploring the culture more broadly will lead to a clearer understanding of the factors at work. This is the rationale for exploring culture in this study.

3.5. Culture in Context

Different aspects of culture exist and new aspects continue to emerge. In this thesis, only those aspects which help to explain feeding practices and justify the choice of the methodology are explored. An anthropological perspective which considers culture as an element of knowledge that guides a group's way of life and how the group generates knowledge was useful. The elements here refer to the material and ideational constructs of a group's social behaviour (Keesing, 1974; Geertz, 1973; Wagner, 1981). Building designs, cuisine, dress, and works of art are examples of the material elements identifiable with specific cultures (Whitehead, 2004; Winkelman, 2008). Values, beliefs systems, language and customs illustrate the ideational aspects of culture (Whitehead, 2004; Winkelman, 2008). These ideas and physical elements of culture are passed down through generations using a culture's learning system (Helman, 2001). It is argued that culture cannot be distinct because it develops and changes with time and space (Ellwood, 1918). However, functionalists, a group of cultural theorists maintain that the distinctiveness of a culture lies in the meaning some elements of it have for a group. Therefore, even if a culture's traits mutate, those aspects of it which remain meaningful to a people would be preserved and passed on to future generations (Helman, 2001).

A typical cultural phenomenon that is arguably difficult to mutate is the cuisine (Mintz and Du Bois, 2002). Foods are one of the cultural materials that contribute to the creation and maintenance of social relations. Maintaining a group's food norms and food sources may, therefore, be a way of endorsing customs. Group members do this by using their culturally acquired learning system to interpret and generate the norms that fit in with those of their culture. The cultural learning system involves the processes of adapting, modifying and reproducing experiences and the knowledge acquired through interactions with one's compatriots and older generations of their society (Wagner, 1981; Geertz, 1973; Helman, 2001). The influence of culture on all aspects of food norms makes it valuable in understanding child feeding. Cultural principles inform the meaning of food, the cultivation, and storage of food, food preparation, and its distribution. To illustrate, whereas nutrition scientists may define nutrition mainly in relation to food nutrients and their use by the human body for physiological purposes (Fieldhouse, 1995), culture may classify food in terms of food or non-food, sacred or profane, hot or cold and medicine as food or food as medicine (Winkelman, 2008; Helman, 2001). Cultural factors also influence food preparation and storage (Winkelman, 2008, Helman, 2001). Food may also be classified per social status and gender. These classifications suggest that some foods of high nutrient value may not be eaten if individuals do not meet the appropriate criteria.

To understand feeding practices from the perspective of the participants, a sensitive methodology that allows information to be generated in a natural and ordinary way to share ideas is required.

3.6. Qualitative design

Techniques which stimulate social interaction are useful in uncovering phenomena embedded in social interaction (Guba and Lincoln, 1994; Bernard, 2011). Qualitative research which is exploratory and has the quality of helping researchers to understand people's motivations and experiences was identified as the appropriate approach for this study. The aim of this study was to know and understand the feeding practices of a group of people; therefore, a qualitative research approach was applied in the fieldwork. Procedures included the use of social interaction strategies such as verbal communication, observation and the sharing of ideas and actions, and engaging with the participants in their own environment. Reviewing the philosophical origins of qualitative research provides an understanding of its value in this study.

3.7. Philosophical framework for qualitative research

The methodology was selected based on the understanding of the social world, what human beings regard as knowledge and how this knowledge is acquired. Qualitative research is underpinned by the naturalistic viewpoint, a group of interrelated principles about the form of knowledge and approaches to acquiring knowledge (Parahoo, 2006). The naturalist ideologies are the constructionism and the interpretivism paradigms which mainly informed the choice of a qualitative approach for this study. A third theoretical principle, symbolic interactionism, was also employed as a guide because of its closeness to the concept of culture.

3.8. Constructionism and interpretivism

Constructionist and interpretivist paradigms consider phenomena to be created by humans and to exist in multiple contexts and specific realities (Guba and Lincoln, 1994; Parahoo, 2006). The arguments advanced by these philosophies are that reality or the existence of a phenomenon is created during social interactions and stored within human minds. This consequently informs people's daily activities and their reactions in given situations. Thus, in as much as humans differ on an individual and group level, and in time and space influence human opinion and behaviour, so are the numbers of realities.

The constructionist epistemology was chosen as a guide to this study as the meaning of child feeding practice to the study community and to me (the researcher) may differ. Sociocultural phenomenon are believed to be multiple and based on the context (Fairhurst and Grant, 2010). Since context essentially determines how we make sense of phenomenon from the social realm (Lincoln and Guba, 1985), I also drew on the interpretivist perspective as a guide to this study. Interpretivism is open to the interdependent processes between the researcher and participants. In so doing the researcher captures the meanings that occur during the interaction and work with participants to making sense of their reality of child feeding. Interpretivists' goal is to understand and make sense of the behaviour and since the aim of this study was to understand the meaning of child feeding from the perspective of the study community, the interpretivist perspective was employed. In applying the interpretivist approach, researcher captures the meanings that occur during the interaction and work with participants to making sense of their reality of child feeding.

Hermeneutic and dialectic processes between researchers and the studied group are therefore considered the most suitable approach to creating an understanding of participants' perspective of the phenomenon being studied (Guba and Lincoln, 1994). It also allows the researcher to interpret the phenomenon from the perspective of the participants and to clarify any misconception resulting from the researcher's existing notions of the phenomenon.

This philosophical consideration of knowledge shares similarities with the cultural anthropologists' view of cultural knowledge acquisition and, since this study's aim was to have a cultural viewpoint on child feeding, this further pointed to the use of a qualitative approach. To anthropologists, a blueprint of constantly changing principles is imprinted in the minds of individuals, informing how they act in given situations and guide their daily pattern of behaviour as they interact with others in their culture (Geertz, 1973; Wagner, 1981). This reinforced the choice of an explorative qualitative approach because it guides the researcher to live like the individuals in their community and, using their ordinary daily interaction strategies, learn about their way of child feeding as a member of the community would do naturally. However, relevant questions were also asked more purposefully since the fieldwork was time bound and not all issues would emerge naturally. This mechanism of cultural knowledge acquisition shares features with symbolic interaction. Symbolic interactionism is one of the naturalist theories (Applefield et al., 2000; Spradley, 1979). To enrich my understanding of cultural knowledge acquisition and the application of ethnography procedures in this study, the assumptions of symbolic interactionism were also reviewed.

3.9. Symbolic interactionism

The argument of symbolic interactionism is that people act toward things based on the meaning those things have for them, and these meanings are derived from social interaction and modified through interpretation (Blumer, 1986). Human experiences, behaviours relating to those experiences and information that is meaningful to individuals in their daily lives create a culture (Spradley, 1979). As individuals conduct themselves in their society, they interpret and create meaning from actions they observe, words they hear and things they see (Clifford and Marcus, 1986; Spradley, 1980; Vasilachis de Gialdino, 2009). These elements are significant symbols of cultures and have unique meanings to people in different cultures (Spradley, 1980 & Geertz, 1973). During the interaction and interpretation processes, when people make meaning of things they encounter, they develop shared principles, values, beliefs, knowledge, and ideals. These are modified, adopted, and maintained as a pattern of behaviour in line with the shared acceptable behaviours (Geertz, 1973; Winkelman, 2009; Fetterman, 1998 and Smith, 2000). Whilst being modified, redefined and adopted within generations, some aspects of the culture are also passed down to or received from other generations, which may either be modified or maintained through interpretation (Spradley, 1979; Helman, 2001). This interpretation and creation (construction) of cultural knowledge is self-directed at the individual level where the cognition takes place. However, interpretation of it, which eventually informs a people's way of life, is communally invented (Wagner, 1981 & Vasilachis de Gialdino, 2009) based on the society's cultural blueprint.

In this process, which could also be described as enculturation, where the individuals learn the obligations of their culture (Wagner, 1981 & Smith and Riley, 2011), the individual obtains a cultural 'lens' through which he or she perceives things in line with the perspective of their social group (Helman, 2001). This learned cultural knowledge is then passed down to other generations in a similar manner (Helman, 2001) and informs behaviours in the cultural group. These principles, which underpin qualitative ethnographic research, informed the choice of methodology for this study.

3.10. Ethnographic design

Ethnography is a subgroup of qualitative research design. The premise of ethnography is that the ethnographer lives with the people in their natural environment, participating in their daily activities asking questions, eating their food and interviewing key people who are knowledgeable about the culture (Silverman, 2013; Polit and Beck, 2012; Ellis, 2016; Hammersley, 2007b). In this way, the ethnographer learns people's way of life from the people's own viewpoint. Even though there are arguments that ethnography could be conducted using quantitative approaches or mixed methods (Whitehead, 2004), for the purpose of this study, a purely qualitative approach was adopted. The primary focus of ethnography is the meaning that people give to their way of life and the best way to learn the meaning of phenomena is to learn from the participants who give the phenomena their meaning (Hammersley, 2007b; Spradley, 1979; Spradley, 1980). The processes of living with the cultural group, participating in their activities, asking questions, and interviewing key informants utilise the same processes of cultural knowledge construction outlined in the naturalist paradigms. Thus, as cultural knowledge is communally constructed through social interactions (Vasilachis de Gialdino, 2009), the researcher needs to engage with participants (Malinowski, 1922; Spradley, 1979). In this case, such engagement would advance my own understanding of how the knowledge of children's food and feeding practices is constructed and the same processes would be used to interpret and construct knowledge of the cultural phenomena. When this happens, ethnographically generated knowledge leads to the development of cultural evidence devoid of pre-conceived ideas, when reflexivity is applied. This is because ethnography fits with the constructivist argument of "multiple realities" which results from the co-creation of knowledge in a specific context (Nurani, 2008; Parahoo, 2006).

Traditionally, anthropologists studied cultures other than their own, using ethnography. This generally earned ethnography the definition of being a culture studying method. The fundamental tenets of ethnography make it unique for understanding culture. Ethnographic researchers are expected to spend extended periods living with participants in their natural environment, immerse themselves in participants' daily routines and, in the process, observe the phenomena being studied, ask pertinent questions, and learn and document details of the culture. The essence of this approach is that aspects of a people's way of life could be taken for granted by the people themselves and questions must be asked based on the observed behaviour, at the time of the behaviour, for understating the related behaviours.

3.11. **Limitations of Ethnography**

The usefulness of the ethnographic approach is in learning about cultural phenomena like the practices involved in child feeding. However, the approach is not without limitations. People may not readily give intimate information about their culture to strangers and individuals and may act out or tell researchers what they think researchers want to know rather than the truth about the culture (Ellis, 2016). In order to address this, a long period of engagement with the community is needed to win participants confidence and make them open to sharing the real information. For instance, at the start of this study some participants initially explained their behaviours or activities in one way, but then changed or modified their explanations following a lengthier period of interaction and observation.

A further challenge with ethnography is the tendency for researchers to 'go native'. Going native is a researcher becoming too immersed in the culture to the point of taking for granted the knowledge generated, and missing the emic perspective of the culture.

Another challenge is the tendency to interpret data based on the researcher's personal biases. However in this study reflexivity and triangulation were used to mitigate these challenges during the fieldwork.

3.12. **Summary**

This chapter defined the main concepts regarding feeding practices and culture, the research design and the philosophical framework that informed the choice of the design. Qualitative ethnographic design, which was employed in this study, has been described and the reasons for choosing it presented. The naturalistic interpretivist and constructivist traditions, which guided the choice of the methodology, are explained. In addition, symbolic interactionism, a theoretical framework which falls within the naturalistic paradigm's domain and shares similarities with culture have also been discussed as an additional justification for the choice of ethnography for learning about child feeding practices. The next chapter will describe the ethnographic procedures that were applied in the field to generate knowledge of child feeding practices.

CHAPTER FOUR
METHODS

Chapter 4: Methods

4.1. Overview

This chapter describes the procedures that were used in generating and interpreting data for describing the culture of child feeding in a village in rural northern Ghana. Semi-structured and informal, conversation style ethnographic interviews and participant observation were employed for generating the data in the field. The chapter describes the participants, outlines how the field was accessed and how the interviews and participant observations were carried out. In addition, the management and analysis of the data, with the help of Nvivo qualitative data analysis software and framework approach is described. Finally, the ethical and quality measures that were applied in the study are also described.

4.2. Study aim

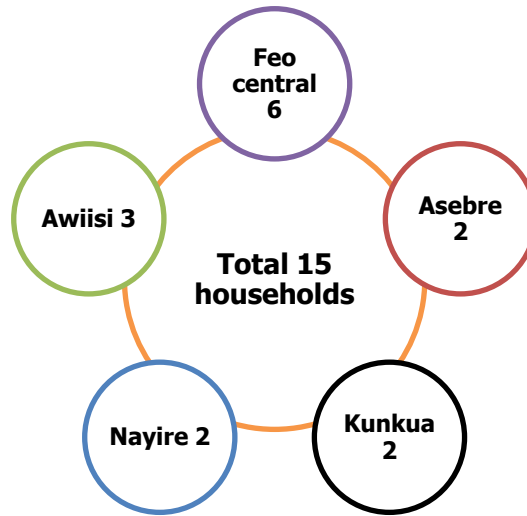
This study explored local child feeding practices and the influences on these practices in a rural community.

4.3. Data collection Sites

The choice of the study site was based on convenience. At the time of the fieldwork, there was no community specific child nutritional status statistics which could inform the choosing of the study site. There was also no evidence of this kind of study conducted in this community's ethnic group. Thus, since malnutrition in rural northern Ghana was generally reported as high, this community was purposively chosen.

The community was made up of five sections. A section here means an area of the village. At the time of this data collection, there was no documented evidence of the size of the various sections. The community's midwife and members estimated the size of the community's sections. They guessed based on household's densities of the sections. This information guided my decisions on the number of households that were recruited from each section. My own observation during the initial stages of the field work confirmed the estimated sizes and determined the number of households recruited from each section. This was to ensure that the maximum possible variety of characteristics within the community's culture was represented thus ensuring that diverse perspectives within the community, about child feeding, were discovered. Figure 4.1 shows the number of households selected from each section.

Figure 4.1: Data collection Sites



4.4. Data sources and study participants

In ethnography, as in most qualitative studies, participants are the individuals who possess the characteristics that are necessary for generating the data that best describes the phenomenon under study (Marshall and Rossman, 2010). Thus, households with children under-five years of age were identified as the source of data for describing the indigenous child feeding practices which this study aimed to understand. To find these households, the primary caregivers of children under five years, mothers, were identified as the first category of participants from the outset of the study. Other participants were subsequently included in the study based on their contribution to child feeding. These household members made physical contributions to or made decisions that influenced child feeding. The general criteria for included and excluded data sources are outlined below.

4.4.1 Inclusion Criteria

The purpose of inclusion and exclusion criteria is to arrive at decisions about the geographical boundaries, the specific participants in the population group and the topic perimeter from the outset of the study. These criteria guided participants' recruitment and directed data collection within the relevant areas of the study. Participation in this study was limited to households with children under five years, any person who prepared food for or fed those children, and any individual who made decisions about a child's feeding within the household. The participants who were relevant in this study included mothers, fathers, aunts, grandmothers, grandfathers, and diviners.

4.4.2 Exclusion criteria

The exclusion criteria included households with children, who were exclusively breastfed, children who are being managed for acute malnutrition and children who were on medically prescribed feeding programs. These groups of children were excluded because the study sought to explore only indigenous cultural feeding practices following exclusive breastfeeding.

4.5. Gaining access to the field site

In this study, direct interaction with participants in their homes was the strategy for collecting data. Rapport and sustained positive relationships were essential interpersonal tools to ensure productive fieldwork. The need to establish and maintain appropriate informal relationships with key stakeholders in the research setting was a key ingredient to accessing and obtaining the right data (Hammersley, 2007b). Establishing these relationships promotes participants' autonomy as they are able to engage with the researcher to express their stance without boundaries (Bourgois, 1990). Additionally, the nature of the interaction in ethnographic research touches on sensitivities which require establishing and maintaining appropriate relations with members of the community to allow researcher and participants to understand each other as the relationship develops. Power relations are one of these sensitivities. Hierarchy is very important in the Ghanaian context. Thus, by establishing appropriate relationships the researcher gains information for understanding the undercurrents so as to be able to meander through them without stepping on nerves and creating conflicts that could negatively affect data collection (Hammersley, 2007b). Contacting the appropriate organisations and persons was, therefore, an essential activity in the field work. Due to the importance of gaining access appropriately, one month of the fieldwork was used for this purpose. The gatekeepers who were used for accessing the site included the health service administrator, the health workers in the community and the local chief.

4.5.1 Regional and District Health Level Procedures

To increase the chance of gaining access with ease, the health service administration was first contacted, and the study outlined verbally to the Regional Director of Health. At the request of the Regional Director of Health, a letter of request to carry out field work was sent to the directorate. A letter of approval and introduction to the Director of Health Services for the Bongo district, the district capital of the research community, was issued by the Regional Health Directorate.

The Bongo District Director upon receiving the letter informed the midwife of the community-based health planning and service (CHPS) compound in the community chosen for the fieldwork, of the study and requested that she offered me assistance in the recruitment of participants. A CHPS compound is a first level health facility in Ghana and was the point where initial contact with participants was made.

4.5.2 Contacting the Chief

During the initial interaction with the midwife in the CHPS compound, I requested assistance to meet the leadership of the community and to ask for permission to conduct my study. However, the midwife advised me that there was no need for any other persons to be contacted since household heads were directly involved. Nevertheless, based on my understanding of the nature of northern culture, I explained to her the importance of recognising such key people in the community. Even though I was concerned about the midwife's reaction to my resolve to see the chief, in my opinion, it would be easier to handle the midwife's reaction than the consequence of the chief finding out about the project from a source other than me. I, therefore, encouraged the midwife to enable me to greet the chief as was customary and she accepted my request. I

anticipated the need to overcome from the start the tendency of health workers to develop paternalistic attitudes towards communities that they serve and thus overlook the autonomy of individuals and groups to make their own choices.

Hammersley (2007b) has indicated that the inability to anticipate and find the right powers and persons who have a strong influence over participants in a field site may affect the sustaining of relationships established for data collection. It is, therefore, important for the researcher to be aware of such issues and ensure that inappropriate communications and actions do not create displeasure and undermine the fieldwork.

I recognised from the midwife's utterances that she saw me as being in the same position as herself and assumed me to be seen in the same light as her by the community members including the chief. I, therefore, explained to her that the chief might not be concerned if she was directly carrying out the study, but may be upset if an outsider was found roaming from house to house and observing activities in a village without the chief's knowledge. As a result, she suggested that a porter in the clinic take me to the chief's house after a child welfare clinic. She advised me that, since it would be another week before another group of women came to the child welfare clinic with children under-five, I needed to begin the recruitment process that day.

I visited the chief after the welfare clinic in the company of the male porter working at the CHPS compound. After exchanging greetings, the porter introduced me as a nursing student who was in the community to learn about child feeding as part of my studies. I then explained the nature of the study using the participants' information sheet. I could not speak directly to the chief. A young boy, acting as a translator sat at the feet of the chief and referred every statement that was made to the chief by asking, "Have you not heard what the visitor has said?" The chief was a professional secondary school teacher and so indicated that he had understood the study and was happy that I was in the community to conduct the study. I left him with a participant information sheet as seen in appendix 5 and, speaking through the translator, the chief pledged that he was ready to support me if I needed any help to conduct the study successfully.

4.5.3 The CHPS compound and community level procedure

Upon the advice of the midwife, I visited the CHPS compound on the 24th of October, 2014, when a child welfare clinic was underway, and mothers with children under-five were in attendance.

Contrary to the pre-field proposal for health workers to approach each potential participant individually, to explain the study and to ask them to contact me at a space within the clinic, the midwife decided as part of her introductory remarks and health education talk to the participants, to introduce me and asked that I talk directly to the group of women in the CHPS compound waiting area about my project. The midwife also asked the participants to contact me after staff had attended to them. After the midwife had done this, she apologised and explained she had changed the plan at the last minute because she thought it would be a waste of time to talk to the participants individually. Similarly, because I was fluent in the local language she thought it was

better for me to introduce the aim of the study to the potential participants. This initial deviation from the agreed plan by the gatekeeper was an indication that gatekeepers could alter strategies in research without the consent of the researcher. It made me alert to the possibility that similar things could occur during the fieldwork. However, nothing of such a nature occurred again since the gatekeeper's work was limited to introducing me to the study population.

In fact, the gatekeeper's strategy potentially prevented "cherry picking" of participants which could compromise the maximum variety of participants recruited. It has been established that a major challenge in the use of health workers to recruit their participants for research is this tendency for them to "cherry pick", by selecting specific participants who may not possess a sufficiently wide variety of characteristics within the eligible population (Patton, 2005). This was therefore avoided as the midwife did not have to direct participants to me. Participants chose to contact me to find out what the midwife meant. And so, the sampling process began.

4.6. Sampling

4.6.1 Sampling the initial contacts

On the first contact with the participants at the clinic, mothers present were given information about the study, and an invitation made to mothers who were willing to be part of the study to contact me for further information about the study when they had finished receiving their child's care. Out of the 26 mothers who attended the clinic on the first day of recruiting the initial participants, seven mothers came forward to the clinic and were given further information and participant information sheets. Some participants indicated that they were not sure if everyone in their households would be happy to be engaged in the study but that they were personally certain about their own decision to participate. All the mothers who contacted me were encouraged to consult other members of their household before finally making up their minds and returning feedback. As agreed, 3 days later, I visited all the households of the mothers who had received the information sheets. These women had all fully informed their households' heads, other women in those houses with children under five years and the grandmothers. As a result, most people were around during the visits. Six (6) of the households gave outright consent. Nine households remained to be recruited after the initial households gave feedback on their decision to participate.

4.6.2 Sampling outstanding informants

The sampling plans were focused on getting representation from all the five (5) sections of the community. Three of the initially contacted informants came from the largest section of the community, while the remaining three were from another two sections. Two sections of the community were not represented in the sample. Having been informed that there were two women from another household prepared to participate, the remaining task was to recruit 8 women from different households to make up the 15 households set out in the recruitment plan. Snowball sampling was therefore used to recruit the rest of the participants. The six women were asked to recommend other women with children under-five years of age that lived in the various sections of the community in the study. Due to the semi-dispersed nature of the settlement, in order that the

initial informants did not out of convenience recommend women who lived closer to them so that the participants were concentrated within a particular area, those initial participants were encouraged to find mothers who lived more than 3 houses away from their houses. This snowball sampling resulted in identifying and recruiting all the remaining nine (9) households. Three of the initial contacts brought in three (3) more participants and two (2) of these new participants identified two (2) more participants. One of these two participants also brought in another participant. This brought the number of households to fourteen (14) leaving only one (1) household to recruit. Initial contact with the final household was at a child welfare clinic day. Table 4.1 shows the sampling techniques used in recruiting households into the study.

Table 4.1: Sampling techniques & Recruited Households

Sampling level	Sampling techniques	Household recruited
1 st	purposive Convenience	6
1 st	Snowball	3
2 nd	Snowball	2
3 rd	Snowball	2
4 th	Snowball	1
2 nd	Convenience	1

4.6.3 Sampling other informants

I included in the study plan the potential to recruit other categories of participants who might be rich sources of information regarding child feeding. The initial participants in the study were mothers since they were identified as the individuals who would usually cook for and feed children. The fifteen mothers' recruited represented 15 households, the basic sample in the study. Later, Fathers, grandmothers, grandfathers, and diviners were recruited using theoretical, purposive and convenience sampling. At the beginning of the study, accessible members of households' had been informed of the potential of being invited to participate in the study at a later stage. This facilitated the recruitment of these subsequent participants when the time came for them to be involved. Most participants in this category who were contacted did not hesitate to join the study. They were identified during the initial participant observations and interviews as themes emerged from the initial data and it was proved that such individuals' information were necessary. Willing individuals were invited and interviewed. The nature of the study was explained to these individual participants and their consent obtained. This process was achieved smoothly as many of the households' members as possible had been told they might be invited to become participants at

the earliest stage of the fieldwork. One grandmother who had a toothache was removed from the sample because of distress during the period of the study.

A further group who had been considered as possible participants were the siblings of under-five years old who took part in the feeding of young children. However, most of these siblings were below 14 years and were generally at school during the daytime observation period and could not be interviewed. During the observations and the interviewing of the parents, the parents reported on the contributions of these older siblings.

One of the challenges in recruiting fathers was that most of them had travelled to other parts of the country to work as was the norm during the dry non-farming season. The households' resident grandfathers or grandmothers were interviewed. Indeed most of the grandparents' daily routine during the fieldwork was to sit around the household chatting with others who passed by, go to funerals or to visit and greet sick people. These were the commonest activities for them during the dry season when farming was not taking place.

4.7. Obtaining consent

Obtaining consent from participants before carrying out research ensures that participants independently decide to be involved in the study (Robinson, 2011). It also suggests that the researcher complies with ethical principles such as the autonomy of the individual and that participants have not been coerced to participate in the study (Kass et al., 2007). It is required that participants would be well informed about a study before deciding to participate, and signing the consent form becomes documented evidence of the voluntary informed decision of the participant.

In this study, a two level consent was obtained from the participants during the fieldwork. Household heads gave both verbal and documented collective consent before the commencement of the data collection in each household. This consent was to cover the whole data collection exercise in each household and the participant observations in particular. Individual participants also gave consent prior to being interviewed. Mothers were the planned initial contacts and the gatekeepers to households. Therefore they were the first to give voluntary consent.

Following interaction with the initial contacts (mothers of children under-five) at the clinic, household meetings were held with all members of the household who were resident at the time. At the meeting, information about the study was thoroughly explained to all. I also conducted a question and answer session and answered participants' questions. It was at these meetings that I informed members of households that the giving of consent was the explicit seal of agreement indicating their voluntary willingness to participate in the study. In order to ensure that the household level consent came from the appropriate person, I asked which individual would sign the consent forms at the end of information giving sessions. This had to be carefully done to avoid undermining the leadership of the households. Power relationships in rural Ghanaian societies are complex (Salm and Falola, 2002), and make it difficult to discern how people may react to some suggestions such as who should give consent for participation in research. It was, therefore, helpful to allow the decision about who should give consent to emerge from members of the

households. Coincidentally this was made easier on some occasions when during question time someone would ask who should sign the consent form. This provided more opportunity to explain the nature of the observation of participants which would take place and link it to a suggestion as to how signing the consent should be done. The suggestions were in line with the fieldwork plan for obtaining informed consent.

This plan, as explained to the households, was that the head of the household signed one consent form for the whole household and then individuals who were selected to be interviewed also signed consent form each prior to being interviewed. This was generally agreed after some discussions. In some households, participants did not see the need to sign a consent form. However, others who had been involved in research indicated that they had done that before and saw no reason why people should not choose to give their thumb print to indicate their consent.

There was documented consent for everybody who was interviewed. Eventually, most participants wanted a sheet of the paper to keep. Most participants were generally welcoming and voluntarily wanted to be involved in the study. One woman said she would keep the consent form so that when the child grew and went to school she would give it to the child to read about the woman who went around watching what was being cooked for them. Another lady whose husband had migrated said her husband could read and write so she would keep the information sheet for him to read on his return.

In obtaining the consent, participants would verbally answer all the questions on the consent form, which I ticked and the participant would then thumbprint using ink from a stamp pad. Two copies of the consent form were usually completed, one retained by me and the other kept by the participant. Appendix 6 is a sample of the consent form. Even though most participants were willing to be part of the study, a father of one of the children was concerned that there had been a spate of frauds and he did not want me to finish and then ask them for money to offset some of the cost of my activities. However, with further explanation from me that there was no cost and a neighbour who was around during the information reassuring him that he could verify who I was with the community nurse, this man was convinced. Another potential participant, however, did not consent to participate in the study unless he was paid. This man (a diviner) refused to participate when I explained to him that, I could not pay him.

4.8. Data generation

The aim of the data collection in this study was to explore and describe the content of food given to children, the context of children's food preparation and child feeding, and also to illuminate and explore the connected factors and practices in relation to child feeding. Semi-structured and conversation style ethnographic interviews were used alongside participant observation to elicit information from the members of the households who were involved in cooking food or feeding children or who could influence decisions that affected child feeding. Participant observation was mainly used to gather details about practices and the interviews were used to establish rapport and to explore the meaning related to feeding practices and decisions. The data collection was

therefore completed in an iterative manner, starting with participant observation and informal interviews and leading to semi-structured in-depth interviews. The ensuing paragraphs outline the activities of the fieldwork.

4.9. Participant observation

4.9.1 Justification for the choice of technique

Participant observation was a data collection tool which allowed me to observe participants and partake in their activities whilst noting and describing the cultural phenomena associated with child feeding. Some originators of the anthropological method regard participant observation and ethnography as identical (Whitehead, 2004; Spradley, 1980). In ethnography, researchers tend to directly interact with participants in their natural environments, and in the process generate data (Spradley, 1980; Fetterman, 1989). The data are used for describing a phenomenon (Fetterman, 1989). Thus, whereas ethnography is the product of research that describes a culture or cultural phenomena (Fetterman, 1989), participant observation is the process by which the essential data required to write about the culture is generated (Whitehead, 2004).

The proposal to use participant observation was first of all founded on the type of phenomena (feeding practices) and the context of the phenomena (local culture). Cooking and feeding children are hands-on activities that require a learner to see, experience and clarify the viewpoint of the people doing the cooking and feeding the children to be able to give a full account of the perspective of the participants. In studies of nutrition, the sources of food products and the preparation of those products have been established as having an impact on the adequacy and quality of the nutrients consumed in a diet (Rao and Beckingham, 2013). There are recommended strategies for deciding upon the sources of food products, and the preparation methods of different food to ensure that the food remains nutritionally adequate. However, there is also evidence that nutritional knowledge alone does not influence these decisions and that culture also plays a role (Helman, 2001; Winkelman, 2008). Both practical and symbolic actions form part of the processes of cooking for and feeding children. Therefore observing the way these things are done is a valuable tool in developing an understanding of how the study community organises and carries out child feeding. For instance, to be able to ask context specific and culturally sensible questions about the ways of cooking and the arrangements related to child feeding, first-hand observations of how these activities are conducted gave me the opportunity to form my views and develop questions that made sense in the context of the culture. Additionally, 'being there' and seeing what happened gave me a better understanding of the significant issues that informed decision making and prioritising in relation to child feeding and food choices.

Every researcher has some hunches about the phenomena they set out to study, as these are usually what motivate them to research a phenomenon. This is especially true for me, as the study site shares some similarities with the culture in which I have spent part of my life. Again, child feeding is a phenomenon that I know about as I have experienced working with children and mothers and I am a mother myself. This raised the potential of me making assumptions and

therefore interpreting data that would be obtained by other techniques, such as interviews, within my own understanding of the culture. This could reduce the opportunity to unearth the tacit knowledge of child feeding which is not even in the consciousness of the participants until this is probed at the time of the action. Participant observation in this study was used to avoid or reduce interpretation of data from participants based on these issues outlined. However, the benefit of unearthing the tacit knowledge was enhanced by reflexive diary and the discussion of some of the issues with my supervisors which helped me to challenge my preconceived ideas. This was always prompted by seeing the behaviours and countenances of participants in a way that could not be possible if I was not placed at the scene of the events of cooking and child feeding and the discussions that arose.

Research methods advocated by the naturalist inquiry paradigm are vulnerable to 'reactivity' or self-reporting bias by participants as they may not be comfortable divulging some information about themselves (Bernard, 2011). This may conceal vital information that could be essential in giving a detailed description of the phenomenon under study. Therefore to reduce this, using more than one data collection tool, and especially a tool such as a participant observation, allows the researcher to assess the physical manifestation of the phenomenon, as well as the information associated with it. In this research direct human interaction was the main method of data generation; participant observation was essential in reducing the challenge of self-reporting bias which was highly likely. This is because it has long been established that human beings may not be able or willing to give accurate information about their behaviour verbally (Oeye et al., 2007; Emerson et al., 2001).

4.9.2 Type of Participant observation used in this study

Complete participant, participant as an observer, and observer as participant and complete observer are the four main participant observation roles outlined by (Gold, 1958). In this study, the participant-as-observer role was used to complete the data collection. I identified my role as a researcher and participated minimally in the day to day activities of the participants. The participant as-observer role was used in this study because it offered me the opportunity to respect the autonomy of participants by acting overtly and allowing participants to decide to participate or decline to participate in the study through the disclosure of my role as researcher. Again the need to reduce reactivity based on participants' knowledge of me observing the child feeding-related activities was a reason for choosing to assume the participant-as-observer role. My interaction with them on the level of participant shifted their attention to acting naturally in preparing children's food and in feeding them as part of our mutually less intimidating relationship. The relationship between the participants and me became informal after a few interactions, allowing me to quickly immerse myself in the setting and the activities of the participants. These attributes of the role made the uneasiness of the participants melt away quickly so that they acted normally and revealed the data I needed to obtain.

One drawback of this role has been identified as over-familiarisation, which could have caused me to miss the opportunity to observe important happenings. However, from my experience in this fieldwork, it appears this disadvantage could occur if the researcher was engaged in observing the whole culture whereas, because my study targeted a specific phenomenon and I had a schedule of places to visit, I did not find myself losing sight of my objective. I blended the observation with their natural way of living by being around households throughout the day and engaging in every routine. I did notice signs of participants attempting to act out. For instance, from the utterances of some participants, I perceived that, if they had the means, they might act out by preparing foods close to what health professionals had recommended. However, for such participants, it appeared that the nature of their culture, as well as poverty, made it difficult for them to act out to me. The culture in the community is naturally public because the food is prepared and eaten in open spaces, and it appeared to me that people might find it difficult to act out. Besides, due to the level of poverty, households could not hide their activities. Additionally, during interviews, some participants attempted to report their knowledge instead of their actual practices of child feeding. However, this became less evident as our interaction progressed and participants felt comfortable to open up.

4.9.3 The topic guide for Participant Observation

Prior to going to the field, a topic guide was developed to help me focus on the perspective of the feeding practices that I set out to uncover. The physical setting, the interactions, the verbal and non-verbal communication, the activities surrounding the phenomena I was researching and the context in which it occurred were the focus of the topic. As suggested, in the heading in appendix 7, the guide was used to kick start the process and help me focus on the specific aim of the observations. Natural settings have other activities going on that could distract from my main aim, and result in eliciting inadequate and superficial data. To counter this possibility, the main content of the topic guide was developed around the preparation of food and child feeding. In the field, there was the need to add some other topics to the guide. Thus the topic guide was slightly modified to capture the additional topics. Appendix 8 is the modified version. The major topics included in the guide were child-specific food, preparation of children's food, child feeding and cultural activities related to feeding. The additional topic added to the guide during the data collection was the physical setting.

4.9.4 Conducting the observations

Participant observations generally involved observing the preparation of food ingredients and the cooking of food and observing child feeding and asking questions in between. Participation, on the other hand, included the researcher in performing activities such as carrying a child whilst the mother cooked, assisting in picking up items for the mother who cooked and sometimes performing some of the cooking tasks, such as stirring the TZ so that the participant could reach out for something.

4.9.5 Pre-observation interactions with household

At the beginning, I stayed around and conversed with members of the household and was introduced to visitors who came to the household. This pre-observation interaction was to allow the opportunity to reduce uneasiness in me and household members before the actual observation days. From interacting in this way, most members' of other households became used to my presence in the community and this made it easier for initiating observations. I used the times in the day, especially the afternoon, when there were no activities going on in the household being observed, to visit and hang around other recruited households as a way of immersion to reduce the reactivity of the participants when I eventually started observation in those households. This offered the same opportunity as it did for the initial households observed.

4.9.6 The Observations

At the beginning, I observed and talked with participants while they cooked and fed children without participating in any activity. Initial conversations were not related to the activity being observed. This was to gradually draw participants into the whole data generation process without priming them too much for the process. This was part of the strategy to prevent the artificial creation of responses and action, instead of allowing information to emerge naturally from the interaction. Additionally, to make the Participant Observation as natural as possible, I used the community's model of social interaction to engage participants. In their social interactions, a friend could come around and sit by the person cooking to chat while the cooking went on. In keeping with this model, when I entered a household, I greeted members of the household present and went close to the person cooking and engaged this person in a chat. I shared thoughts with the participants on issues like the weather, funerals or a child's birth or discussed other issues of interest to community members. Then, I would gradually but deliberately redirect the conversation to centre on the purpose of the observation which was the cooking. During the chat on general issues, I intermittently asked questions relating to the cooking. For instance, even though I would see and recognise an ingredient, I would ask the participant about it, and this would lead to other issues related to the cooking or feeding.

I had planned to start every observation by noting the physical surroundings of the cooking area before moving on to the activities and interactions related to the cooking and child feeding. However, in the field, I realised that in order not to miss some of the activities that went on, I had to focus all my attention on the main activities that were immediately available. For instance, if I arrived when a child was being fed, that activity was my initial focus before I went on to note other relevant things.

During the observations I noted the ingredients used in the dishes, how these ingredients were prepared, how these were combined in the cooking, the utensils used in cooking, the source and storage of water, the hygiene practices such as handwashing, washing of utensils, the cook's interaction with other people and things while cooking and how long the food was cooked. Other

things that were observed included how the food was served and what was put in each person's bowl in the household.

The observations of feeding included the quantity of food; how the child was fed, either independently or fed by someone; where the child was seated to eat; child interaction with the food and their immediate environment; hygiene during eating such as hand washing, holding other things while eating; whether cutlery was used and the hygiene state of the cutlery; the quantity of food served to the child and what quantity was eaten; the variety of meals; how left-over food was stored and prepared for the child among others.

The verbal interactions that occurred during observations were usually around why some activities were done, why they were done in particular ways and the meaning of activities. For instance, I would ask a question as to the purpose of each ingredient, such as why saltpetre (locally prepared potassium nitrate) is put in a particular soup or why sour water instead of plain water was used to prepare Tuo Zafi (TZ), (a thick mushy gruel made of corn or millet flour), and the difference between millet and guinea corn TZ. Sour water is a mixture of plain water and guinea corn, millet or maize flour which is left mostly over to ferment, and used for preparing TZ. Other questions that I asked during the observations relating to child feeding included what the parent did when the child did not eat as they should; whether the child would eat differently if the food was a different one; what the child's usual eating pattern was, especially when it was observed that what was said was different from what was observed; whether there were some food restrictions and what their interactions with the children had been during feeding, when the children were younger.

Besides the observation of the cooking of food and child feeding, during the familiarisation interactions, I realised that describing the settings was important in helping to set the scene for discussing other aspects of the study's objectives such as food storage and hygiene practices, as well as how the setting influenced interactions and child feeding. The compounds of the households were therefore observed during the familiarisation phase. The settings were usually initially scanned and a mental note made of surroundings. The interior of the compounds was usually noted and it was easy to determine how many rooms were in a compound. Particular note was taken, of the cooking areas and kitchens if there were any. The things that were noted about the kitchens included their location in the compound, the type of fireplace, the radius considered as a cooking area and the kind of things that indicated that those areas were cooking areas.

The position of the main actor, the woman cooking was another aspect that was observed. Even though proximity has been discussed as an issue that can increase participants' uneasiness during observation, this was not a problem in this study. Cooking in this research community was a social process which allowed other individuals to stay around and chat with the person cooking. However, to ensure that I did not miss anything about the cooking of children's food or child feeding, I tried to sit at an angle that allowed me to see the activities as these were being carried out. Most participants regularly invited me to get closer so I could see what they were doing. Additionally, I started participating in the households' activities, occasionally sitting in a similar

position to the main cook. Figure 4.2 shows the usual positioning of the participant and me during observation. My choice of position was informed by the location of the cooking area in the yard.

Figure 4.2: Typical participants and participant observer position



My level of participation in the activities differed from compound to compound. However, participation generally involved assisting participants in the cooking process. An attempt to feed a child of less than one year old was unsuccessful as the child was not familiar with me. In the cooking, the participation included holding a child while a mother performed a task, fetching millet stocks for the fire, sweeping a compound, pounding ingredients, picking unwanted substances from grains and picking things up for the participant who was doing the cooking.

4.10. Recording field notes

The strategy for recording field notes was to inform participants of having to write what observations and interactions I had with them. However, it was initially challenging for me to pull out my notebook and start writing. I, therefore, depended on my memory at the beginning and spoke into my audio recorder immediately; I was out of the sight of the participants. Subsequently, I jotted brief notes, took pictures and still spoke into my recorder during and shortly after the observations. Elaborate field notes were written after an observation schedule. The jotted notes, the audio tapes, and pictures were used to write up the field notes. The field notes mainly comprised of detail description of the issues observed, and the analytic link of the relationship between the various issues and personal reflections. The field notes ranged from general issues such as scenes to more focused issues such a child's feeding as seen in the previous section 4.9.

4.11. The interviews

Justification for interviews

Interviews are the main data collection tool in qualitative research (Jacob and Paige Furgerson, 2012). In ethnography, interviews aid the researcher to create and describe the cultural reality of a people by allowing the ethnographer to explore the meaning of phenomena from the perspective of participants (Spradley, 1979). Participant Observation is often regarded as synonymous with ethnography (Whitehead, 2004). However, participant observation alone cannot accurately convey the emic meaning of a sociocultural phenomenon without interviews. Interviews are an essential tool in ethnography because interviews make it possible for ethnographers to learn about a community's culture from its members. Creating a rich description of a cultural phenomenon requires understanding the meaning of that phenomenon as it is understood by the people who live the phenomenon (Spradley, 1979). This makes interviews an essential tool in the study of a culture as it helps researchers to adequately elicit data from participants. Thus whilst interviews are secondary in ethnography they are necessary for the generation of meaningful ethnographic data that presents the emic perspective of participants. The nature of a culture, which is both the material and principles of people's ways of life, makes it essential to explore how participants think, interpret and categorise cultural practices, beliefs, values, and traditions relating to a phenomenon like child feeding.

The use of interviews in this study was to help understand the common meaning of child feeding in the study community. Interviews allow the generation of data, and the blending of the emic and etic perspectives of the phenomenon to construct a rich description of the real meaning of feeding-related activities and ideals. The use of interviews in this study was particularly helpful because of the nature of the subject as observed by (Malinowski, 1922). Cooking and eating are daily activities that are almost automatic, and even though some principles may be guiding them, people who perform them may not reflect critically on a daily basis on the reasons for their actions before performing them. Hence, to draw people's attention to their actions for which a rationale may not be in their consciousness, interviews are a good complement to participant observations in ethnography to provide the rich data needed for describing cultural practices and the factors that influence them.

4.11.1 Types of interviews

Several interview types, ranging from the positivist-oriented, structured interviews to informal conversation style interviews are used for collecting research data (Silverman, 2013). In ethnography, semi-structured to very unstructured informal conversation type interviews are recommended (Hammersley and Atkinson, 2007; Spradley, 1979) and were used in this study. These interviews have been described as ethnographic interviews (Spradley, 1979) because of their distinctive usage in ethnographic methods. The distinctive features of ethnographic interviews rest in the duration and frequency of contact with participants, as well as the environment of the

interviews (Whitehead, 2005). Ethnographic interviews are generally allowed to emerge from an ordinary conversation with participants even if there are scheduled interviews. Besides, ethnographic interviews also emerge during participant observation in addition to the scheduled interviews between researcher and participants. This was the typical nature of the interviews in this study.

Informal, casual conversational style interviews have the implicit value of helping to establish rapport and reveal tacit knowledge (Spradley, 1979; Fetterman, 1989). This approach was used in this study to establish rapport prior to the main data collection. The establishment of rapport in ethnography is one essential component of the data collection, as it is a way of making participants open up to answer questions truthfully when the main interview develops. When rapport is well established, participants' uneasiness about the stranger effect and the suspicion of what the researcher is up to dissipates. A relaxed relationship develops between researcher and participants facilitating genuine communication (Hammersley and Atkinson, 2007).

Semi-structured and in-depth interviews were also used to elicit the required information about the phenomena. This type of interview was added to allow me to use a topic guide to provide consistency in the scope of the information generated from the participants, whilst still allowing an exploration of the phenomena in-depth. The combination of the semi-structured interviews and the ordinary conversation style interviews provided an opportunity for obtaining in-depth information, including any information that could otherwise have been missed. The conversational style interviews were mostly used during participant observations. Open-ended questions and follow up questions that were not necessarily in the guide were also applied.

4.11.2 The topic guide

This guide was specifically developed to guide the direction of the conversation between me and the participants and to ensure that the scope of the information collected from all interviews was similar. As indicated earlier, even though the study was designed to find out the participants' perspectives on child feeding, it is common knowledge that researchers will have some conceptual and theoretical notions of the subject matter being explored in the study. This was the basis for setting the interview agenda. The guide allowed me to ask key questions and follow up with probing questions which allowed the participants to express themselves adequately so that the necessary information was revealed. Appendix 7 shows the interview guide.

The guide was developed prior to field entry in keeping with ethnographic principles and included questions to elicit potential data such as the type of food, the preparation of the food and the factors related to the feeding of children. However, the guide was modified in the field to capture aspects of the study that could not be pre-empted a priori.

4.11.3 Setting of interviews

In ethnography, the site of the interview is the participants' natural environment. To achieve the most out of the interview in this kind of setting which is controlled by participants and their

relations, researchers have to respectfully negotiate for a comfortable place where interruptions would be minimised. Different places within the households were used depending on the time of the day and the availability of spaces acceptable to participants. Cooking areas, huts in front of the household, under trees and any shady place in the compound, such as verandas of rooms and room shades, as seen in Figure 4.3 were some of the places where interviews took place. On one occasion, the room of a participant was used. This was upon the insistence of the participant who thought there were too many interruptions during the interview. It was very challenging to find a private place to avoid complete interruption. This is because even when an interview was taking place out of sight, members of the community and household would seek out the interviewee and me to chitchat. Moreover, it was noticed that most participants wanted to be seen with me as some of the participants would shout out the name of a passer-by at a distance and passers-by would then interrupt us for a chat. Even though this was not expected, I accommodated it because my culture shares similar traits with that of the study community, and people in my own culture would behave similarly. Even though the community appeared not to be bothered by the use of rooms, as part of my strategy to prove to participants that I was not interested in prying around and had no hidden agenda other than child feeding, I did not encourage the use of participants' rooms as sites for interviews. During the information giving, I had told household members that I was not interested in other aspects of their lives and wanted to maintain that stance to increase participant trust.

Figure 4.3: Interview sites



4.11.4 The interview process

The strategy was for sampled household members to be interviewed from the third day of the participant observation. This plan was altered from the fourth week of data collection in keeping with the field dynamics. Interviews were initially carried out between the second and third day of starting participant observation in a household. However, interviews were later conducted on any of the 5 days of visiting a household depending on the availability of the key informants. The main reason for this change was the community culture of interacting, which is explained below.

4.11.5 **Context of participant: researcher interaction in data collection**

The first interviewee in the fieldwork arrived home 30 minutes after the scheduled interview time. She explained how she had had to go and greet people at a funeral, and thought that she would have returned earlier for the interview, but had decided to see some other family near the funeral house and forgot to hurry home to meet me. Then she added unapologetically "*but madam, you know how funerals houses are. You can never tell what will keep you*" She then requested time to start her cooking before the interview was conducted. This was agreed as ethnographic interviews are actually contextualised interviews and the cooking could give me the opportunity to ask direct context specific questions. This interview was started an hour after the participant returned from the funeral. Then some people came around to chat with the participant whilst she prepared the ingredients for cooking. When the interview finally started, two more people came at different times and the interview had to be interrupted to allow me and the participant to communicate with the visitors before continuing with the interview. The first person was passing by from another compound and, as part of local custom; she had to exchange greetings with me as a visitor to the community. This female visitor did not leave until she was asked by the interviewee to leave so that the interview could be continued. The second person who passed by sat down to chat after we exchanged greetings, whilst encouraging us to carry on. However, the interview was postponed after a few more questions were asked. I used the excuse that another person was waiting and that we could continue this interview at a later date. I used this strategy because the visitor continually interrupted the interview by intermittently talking with the interviewee, who then had to excuse herself to answer the visitor before paying attention to me. Indeed when the interview was postponed, the interviewee explained that she was happy about this and had actually wanted to suggest that the interview is postponed.

On another occasion, while an interview was on-going, the interviewee suggested a change of site from the compound to a shaded place in a shed in front of the house. Four people came to look for the interviewee, to chat with both the interviewee and me or to seek a person in the household. The usual extended greetings were carried out and then there were a few minutes of information sharing between the participant and the visitors before the interviewee requested the visitors to leave so that the interview could continue. This indicated that the people who interrupted knew about the interview but perhaps did not find it inappropriate or intrusive to hang around to share greetings and chat with the interviewee and me. Indeed, a member of the community would pass by even when I was with an interviewee in a secluded place, and indicate that they had either heard the talking or asked for our location and had passed by to say hello or to leave a message. Sometimes members of the household who remained near the interview venue and who were aware of the interview would actually get closer and begin to make contributions to the interview without invitation.

4.11.6 **Strategies to overcome the interview interruptions**

Following the above encounters that interrupted the interviewing process, I subsequently decided that even though interviews would be planned and schedules made with participants, I would keep

an open mind going forward. This enabled me to postpone interviews without disrupting the data collection schedule significantly or offending participants by insisting on appointments. Interviews and observations were blended and went on concurrently for some of the participants. There were occasions during these times when household members were around the cooking area but did not interrupt as much as when they saw me and an interviewee having a conversation alone. There were fewer intrusions during evening cooking time because other women were at their homes engaged with their own food preparation or other activities. Additionally, people knew from the outset that during the observations, the conversation may not centre on the research but on the cooking and so passers-by were not curious to listen, and intrusions were markedly reduced.

A few participants asked to be interviewed at specific times when they were informed about my plan to interview them. For these individuals communication of the impending interview was done days before the interview day. Participants were encouraged to decide on an actual day to be interviewed. These participants were reminded of the interview during the observation days and encouraged to keep the interview day free. This also improved how participants acted towards the interviews and they actually kept intruders off most of the time during interviews by gesturing to them not to intrude. However, most participants did not regard the interviews as private even though I made attempts to ensure privacy.

4.11.7 The interviewing

Interview sessions lasted from between 20 minutes and one hour. Many of the shorter interviews were those which had been interrupted by neighbours or relatives and required more than one interview slot to complete. The average time for interviews was 45 minutes. The length of interviews depended on participants' time and how much they had to say. Individuals whose interviews were very short appeared to have little to say about child feeding. These participants often provided very brief answers to questions, and in some cases would indicate that they did not have a particular view on the subject being raised. However, for other participants, their interviews were short because they would have had a series of conversational style discussions with me during participant observations. For those participants who were essentially not knowledgeable about cultural child feeding practices, the use of multiple data collection sources and the interim data collection process overcame the problem that their lack of input may have posed.

The interviews normally started by reminding participants about the study topic and their consent to the interview. Participants were then asked to confirm whether they were still willing to continue with the study. Participants were also invited during this introductory phase of the interview to ask any questions they had about the project for clarification. They were also informed of their right to decide during the interview to withdraw from the interview if they felt they did not want to continue.

When participants confirmed that they understood everything discussed and consented to the interview, a 'grand tour' question (Spradley, 1979) was asked to gather general information about child feeding and the response to this question informed subsequent questions. As suggested by

most authors (Kvale, 2008; Silverman, 2013; Guest et al., 2012; Marshall et al., 2006) most of the initial questions started with *" can you tell me? ...could you explain how... how have you been....etc?* These questions were then followed by gradually narrower and more probing questions that allowed participants to discuss their answers in more detail. There were usually up to four questions emerging from the initial question. These questions were either for clarification or for more information or to explain how something is done or to elaborate on the issue being discussed. Further questions were generated from these questions to explain the meaning of a practice as it was understood in their culture. Questions like that would usually start with *why will you...? What does mean? How does that ...?* The questioning continued until all major topic areas in the guide were covered and any questions which emerged were answered. This mostly occurred naturally as the intensity of our discussion began to cool-off especially with participants who were culturally assertive about the phenomena and responded to questions fluently. When all the topics in the guide had been discussed I would find out from the participant if they had something else to add that they had not been asked about relating to child feeding and which they thought was useful to the discussion. Those who had something to say would carry on and then prompt me when they had nothing to add or had no further questions. However, for a few participants, I had to probe repeatedly to obtain information. These interviews were usually postponed or ended without any additional points being raised. When an issue was raised but the participant was unable to clarify the issue other participants were asked for clarification during subsequent interviews. Appendix 7 shows the question prompts showing the roots of the questions as described and Appendix 9 is a sample of a transcript from a participant showing how the questioning would usually be done in the interviews.

4.12. **Analysis of the data**

A framework approach (Ritchie et al., 2003) was adopted in this analysis to assist me in organising the data, to make meaning of participants' responses and actions concurrently and to foster transparency of the analysis. This is a case-theme based approach to interpreting, summarising and representing qualitative data. It includes a matrix display of themes that emerge from the data and the cases (participants) from whose responses such themes emerge. The transparency ensures that readers are able to verify how the themes emerged from the data and whether interpretations correspond with the dataset.

The framework analysis was completed in the Nvivo qualitative data analysis software. Using Nvivo facilitates easy retrieval of the data. Codes generated in Nvivo are linked with data. Data and corresponding codes are easily located within the software. This is especially important since in analysing qualitative data, the researcher usually needs to return to the data to cross check if they had actually captured the true meaning of the text they interpreted. Nvivo also allows the generation of a framework matrix consisting of the participants' responses, the themes generated from those responses and the summary interpretation the researcher made of the responses. This feature of Nvivo works well with the framework approach, by ensuring the transparency of the

analysis process, and also make the analysis systematic. In the following sections, the use of the Nvivo tool and the framework in analysing the data of this study are discussed.

4.12.1 **Nvivo**

This is essentially a qualitative data management tool and analysis aid. It helps the researcher to quickly use the framework approach to fragment textual data, which is usually difficult to manage in a transparent manner. The software has various utilities that can be used to explore the data depending on the wishes of the researcher or what output the researcher wants from their data. In this study, the functions that were utilised were mainly basic data organisation and easy coding of the data that would otherwise have been a lengthy task if I had carried it out manually using either paper, highlighters, pencils and pens or Microsoft word. The role Nvivo played in this data analysis included;

- Providing one place for all the data
- Allowing easy linkage between the data and the themes
- Allowing easy charting of the data
- Creating a framework matrix with ease
- Promoting transparency of the data
- Increasing the speed of the process
- Helping to see quickly the contributions of different participants to a theme and their perspectives in a smart manner.

The data (field notes and interviews transcripts) was quickly uploaded into the software. Nvivo provided the opportunity to link the label (node) of the data electronically with the themes that were developed during the stage of identifying the thematic framework; this will be discussed in detail later in this section. All the data with their labels were then coded within Nvivo as themes and nodes. The data sources (transcripts and field notes) were then created as cases, and linked through the creation of node (codes or themes) and case (participants) classification to the codes. Creation of the latter allowed me to generate a framework of cases and themes displayed as seen in Table 4.3, where the case nodes (participants' identity), containing the transcript of their interview and the themes (meanings) are contained in the rows or columns of the cells of the table. The case nodes automatically link the data from each participant with themes nodes developed for indexing the data. When a sentence or paragraph in particular transcript, which is usually in the sources section of the Nvivo is indexed to a theme node, the source of the sentence (participants identity or case node) applied to it are linked, and an individual is able to access the data source which is the particular case node from the theme node and the vice versa within the software. In addition to displaying the raw data from participants, it also allowed me to summarise the interpretation of the text of transcripts in the same manner and link the summaries with the data sources through the memo and annotation functions in the software. This creation is then exported from Nvivo displaying all the detail links for others to view and make their independent evaluation of the interpretation of the data by the researcher. The data in this study was in the

form of transcripts and field notes in Microsoft word files which were labelled with the pseudo-names of the households that were observed and the individual participants whose interviews were transcribed.

4.12.2 The framework analysis process

The framework approach consistent of five main phases through which one manages and interprets the data concurrently to arrive at main themes that explain the phenomena studied.

4.12.3 Familiarisation

The main purpose of this stage in the framework analysis is to allow the researcher to immerse themselves in the data so that they have a good sense of its depth and breadth (Gale et al., 2013; Smith and Firth, 2011). It allows one to gain initial knowledge of the emergent concepts before they begin to organise it. Familiarisation with the data in this study started in the field, as part of the data generation and interpretation process. During this early phase, I listened to the initial audio recordings of interviews and read field notes from observations repeatedly. In this study, the process was also used to guide the course of data collection to meet the objective of the study. The plan of the fieldwork was to recruit any member of the household who had a role in the feeding of children. As such, besides acquainting me with the data, the process also helped me to identify other members of the community who were rich information sources. A typical example of a category of participant which was identified through familiarisation was the Diviner (spiritual leaders). During the initial stages, of the fieldwork, it emerged that household members might consult diviners on child feeding related issues. Participants revealed from initial interviews that some taboos and child feeding practices such as newborn rituals, which included oral feeding of children with herbs, were prescribed by diviners. All the data (field notes and audios) were read and listened to and summaries of the data including that relating to the diviners were then made. It became evident after familiarising myself with the data that diviners needed to be recruited and interviewed to obtain their perspective on their role and influence on child feeding.

Familiarisation with the data also helped to develop the topic guide for interviewing diviners. A common suggestion from previous users of a framework data analysis approach is to select data generated from the mix of the data collection methods used, if applicable, from different categories of participants included in the study, and from different time periods if the data was collected over different time periods (Gale et al., 2013; Srivastava and Thomson, 2009). In this study, data generated from all categories of participants was reviewed to ascertain a sense of their perspectives on the topic. During every stage of data generation and analysis, such as familiarisation, memos of issues emerging from the data were written. Up to eighty percent of the data was reviewed before the next stage of the data collection. This included listening to the audio recordings of interviews, reviewing the reflective memos and journal notes made during interviews and observation field notes. Appendix 10 is an example of observation field notes. My familiarisation with the data was further enhanced transcription of the interviews.

4.12.4 Transcription

Transcription was a useful tool for achieving familiarisation with the data. Transcription and reviewing of some interviews were bases for future questions and observation during the fieldwork. Transcription of interviews was therefore interconnected with familiarisation. Most of the interviews were transcribed during the fieldwork, and remaining interviews completely transcribed upon completion of fieldwork. The data were transcribed and translated verbatim into English simultaneously from the local language (gurune) in which the interviews were conducted. The transcription was done word-for-word with all nonverbal expressions such as pauses, sighs, exclamations and laughter captured. I, the primary researcher, mainly did the transcriptions. This was partly to familiarise me with the data. However, as part of the process of ensuring the integrity of the data, and to preserve transcriptions as reported by participants, a second transcriber, with an academic qualification in the local language in which the interviews were conducted, verified and validated the data. This person, who did not know the setting of the interviews, transcribed five of the interviews that I had also transcribed. These two different sets of transcripts were then compared to identify any discrepancies for correction. There were less than ten percent differences in words used by the two translators. Determining similarities was done by comparing the soft copies in Microsoft word and reviewing audio copies of transcripts simultaneously. Most differences were clarified as alternatives but not necessarily differences. The process showed that the meaning of the data remained the same. Appendix 9 is an example of transcripts. All the transcripts were reread critically and more notes made. The data was then exported into the qualitative data analysis software Nvivo for the continuation of the analysis process.

4.12.5 Identifying the framework

In this study, even though a guide was used in the data collection, the data analysis was not dependent on an a priori framework. The framework is a list of themes that identify the meaning of a participant's response or the text of an observation. Themes were allowed to emerge from the data. The framework was therefore created using the initial coding of two transcripts, two field notes from the participant observation and the themes that emerged from the familiarisation process. In developing the frames, Spradley's principles of universal semantic relationships were employed.

4.12.6 The concept of semantic relationship

Meanings of cultural symbols depend on their relationships. The connections between the meanings of words, phrases, and sentences in texts and other symbols of communication represent semantic relationships. Even though there are contextualised semantic relationships, universal semantic relationships have been proposed as useful for ethnographers to make meaning of the cultures they study (Spradley, 1980). The principles of this semantic relationship were used to code the data. Table 4.2 is a list of the universal relationships.

Table 4.2: Universal semantic relationships

	Domain	Semantic relationship
1	Strict inclusion	X is a kind of Y
2	Spatial	X is a place in Y, X is a part of Y
3	Cause-effect	X is a result of Y, X is a cause of Y
4	Rationale	X is a reason for doing Y
5	Location for action	X is a place for doing Y
6	Function	X is used for Y
7	Means-end	X is a way to do Y
8	Sequence	X is a step (stage) in Y
9	Attribution	X is an attribute (characteristics) of Y

Source :(Spradley, 1979)

The framework is the collection of initial codes or themes that represent the meaning of the relationships that exist in the data. The semantic relationships show the meaning of text within a sentence or phrase such as the characteristics of something, the reason for something, the result of something, and the cause of something among others. Accordingly, in reading the sentences within the data, these principles were observed, and sentences or phrases identified to make meaning were used as a particular name of a frame's label. Since the data had been uploaded into the Nvivo 10 software, the initial codes or themes were the labels of the framework to which all the data was applied during the indexing. The framework was then reviewed, and more codes added as more of the data sets were applied to the frames in the indexing. Indeed, as noted by (Ritchie et al., 2003; Smith and Firth, 2011), this process was on-going throughout the analysis process until all the data was indexed. Unlike the manual processes, where one may be required to complete this stage before reviewing it and going to the next stage, in the Nvivo 10, developing the frames and indexing the data occurred concurrently. Figure 4.4, appendix 11 and 12 are examples of initial coding frame and the final frame to which the data were applied.

4.12.7 Indexing of the data

At the next stage, all the transcripts were applied to the labels of the framework developed in the previous stage. In this process, the data (transcripts and field notes) were critically read one after the other and using the semantic relationships principles, chunks of data in both sentences and paragraphs were applied to frames based on how these were interpreted. Table 4.3 is an example of codes exported from Nvivo showing how a transcript was indexed, and the data that was used to label codes. The interpretation of the data was based on the context of household's child feeding practices as well as the factors that influence child feeding in the community as reported by participants and as observed.

Figure 4.4: initial codes

The screenshot displays the NVivo software interface with the 'interviewcodes' search filter applied. The main window shows a list of nodes with the following columns: Name, Sources, References, Created On, Created By, Modified On, and Modified By. The nodes are organized into a hierarchical tree structure on the left side of the main window.

Name	Sources	References	Created On	Created By	Modified On	Modified By
activities&issuescompetingwith children feeding	10	23	03/07/2015 12:22	MK	03/10/2016 09:58	MK
advocates for meatgiving	3	5	03/07/2015 18:42	MK	13/07/2015 13:26	MK
ages of included children	9	11	03/07/2015 11:47	MK	26/03/2016 13:20	MK
children food behaviour and perceptions of households	15	42	22/06/2015 13:11	MK	03/10/2016 09:55	MK
foodrefusal&itsmanagement	15	45	07/06/2015 21:08	MvK	03/10/2016 09:55	MK
difficult to code	9	22	20/06/2015 21:50	MvK	03/10/2016 09:55	MK
Feeding	38	346	02/12/2015 09:48	MK	30/10/2016 15:08	MK
age of weaning children	17	20	26/06/2015 17:51	MK	03/10/2016 09:55	MK
Breastfeeding & childweaning	35	221	07/06/2015 10:51	MvK	03/10/2016 12:12	MK
weaning foods&feeding	9	13	06/06/2015 23:16	MvK	03/10/2016 12:12	MK
weaning relatedissues	31	142	07/06/2015 10:55	MvK	03/10/2016 12:12	MK
breastfeeding, weaning and couples sexual relations	22	76	07/06/2015 23:23	MvK	03/10/2016 09:58	MK
familyplanning&breastfeeding	10	22	08/06/2015 00:14	MvK	03/10/2016 09:55	MK
feeding initiation	13	18	06/06/2015 22:05	MvK	03/10/2016 12:12	MK
feedingbefore6months	9	15	24/06/2015 10:13	MK	28/10/2015 10:03	MK
feedingschedule	17	28	05/09/2014 09:42	MvK	26/03/2016 13:20	MK
number of feeds a day	21	27	06/06/2015 14:27	MvK	26/03/2016 13:20	MK
ways of child feeding	15	29	26/06/2015 17:48	MK	03/10/2016 09:55	MK
weaning	8	15	18/11/2015 13:32	MK	03/10/2016 12:12	MK
food	40	356	02/12/2015 09:47	MK	02/12/2015 09:52	MK
breastmilk	14	25	17/11/2015 12:30	MK	03/10/2016 12:12	MK
complementaryfoodintroduction	27	48	06/06/2015 14:32	MvK	03/10/2016 12:12	MK
reasons for rites	2	3	29/06/2015 10:25	MK	11/07/2015 13:39	MK
food given to children	40	214	06/06/2015 14:02	MvK	03/10/2016 12:12	MK
food ingredients	4	6	06/06/2015 14:33	MvK	03/10/2016 09:58	MK
foodfoodingredients	13	21	06/06/2015 14:34	MvK	03/10/2016 09:58	MK
soup ingredients	19	35	06/06/2015 14:34	MvK	03/10/2016 09:58	MK
quantityofchildrenfood	17	29	06/06/2015 14:17	MvK	26/03/2016 13:20	MK
sources of childrenfood	19	40	20/06/2015 22:28	MvK	03/10/2016 12:12	MK
food preparation	27	59	06/06/2015 14:04	MvK	26/03/2016 13:20	MK
food taboos	14	22	29/06/2015 19:52	MK	03/10/2016 09:58	MK
socialandculture ofmeat	18	85	27/05/2015 16:37	MvK	04/10/2016 10:47	MK

During this indexing, new frames which did not fit in the existing frames were found and added. Data from previously indexed transcripts were then reviewed to ensure that data relating to such frames was not overlooked. All transcripts that had related data were applied to the new frames. This made the whole process iterative as there was a 'back and forth' movement from initially indexed data to the finally indexed data. Meanwhile, as with the two previous stages, memos of the interpretations formed on aspects of the data were written and linked with the frames.

4.13. **Charting the meanings**

This process followed the indexing or coding of the data to the framework. During the coding verbatim texts were selected from transcripts and field notes and placed or linked with specific themes. At this stage, interpretation of the transcripts and field notes were reviewed and summaries of the meaning construed and placed in the framework matrix. Appendix 13 is an excerpt showing the summary and the source of text of the themes, the cases or participants. The anonymised names of participants are situated in the rows whilst the themes are situated in the columns and the summaries of participants responses are placed in the cells. The benefit of Nvivo at this stage is that it allows for a direct link between the transcript and the framework matrix and one is able to view quickly summary of the individual participants' responses making a theme.

Table 4.3: Example of indexing of data: Major Theme: Discourses in the feeding of children:

Randomly selected codes	Transcript of Participant: Asam's Household Aruko, GM
Breastfeeding, weaning and couples' sexual relations	<p>What this does to the child is that it prevents them from taking breast milk for a long period. No woman will naturally do that but because the men always go out and it worries the women. That is why they too decide to do that. You know when you have a child you are not expected to sleep with your husband. When the men decide to go out, the women will also consider that the child is grown and then she will start sleeping with him. The child will obviously become sick if you have sexual relations while the child is still sucking. You know as you and your husband sleep the dirt, the child's spirit does not like it and this will make the child sick by all means. It is the pregnancy and the sickness that the child will contract, that is why you would not want to have sex with your husband.</p>
Complementary food introduction	<p>When the child is about 1 to 2 years</p>
Culture of religious & traditions & other activities	<p>That is how it should be, that is what I have always known. We are a family that is why we live in the same house. You know in some houses first born are not expected to eat some foods until they reach some age and they pour libation to pave way for the child to be able to eat that. so for instance in some houses first born females cannot eat hens and for some, after some time, they can break that taboo but it depends on what the diviner will tell the household heads.</p>
Poverty & food availability & food quality & community self-perception	<p>When we do not have the soup 'ingredients' and we have the 'foodstuffs' we still cook like that for the children if you do not have soup ingredients will you say the children should be on empty stomachs. It is just that maybe they may not benefit fully from the food as all the ingredients are not there. What I mean is if one can afford, you can always cook one pot for both adults and children. but if you do not have enough, then I think you should try a prepare the children food special</p>
Meat causes bad behaviour	<p>If the child has teeth and I get meat, I will give them a bit. After all how many times can they get meat to eat? And get used to it?</p>

4.14. Mapping and interpreting

As seen in the previous stage of the analysis process, some mapping and interpretation of the data had started. At this stage, major themes were actively identified. As in the previous phases of the analysis, the concepts were developed inductively from the data whilst remaining in line with the research aim. The aim of the study was to explore and describe practices of child feeding and the factors that influence these practices. The themes were explored to find the range of practices and influencing factors. During the previous stages, the data were indexed and charted according to the themes that emerged during the participant observation and participant's interviews. Examples of such themes are feeding the children, breastfeeding, cooking the child's food and sources of knowledge about child feeding. The meanings of the themes that were identified were defined in terms of whether these were patterns of expected behaviour within the study community and what meaning that had for the feeding of children in the community. In using Nvivo, this process of coding, mapping, and interpreting occur concurrently. To code a data chunk, it had to be interpreted and given a specific label to identify it. For instance, when participants answered questions on the feeding of children, the responses were coded broadly as feeding. A data source was coded after a line by line reading of the text. In addition, the responses had information on the initiating of feeding; the food given to children and what was not given; breastfeeding and cessation of breastfeeding and the number of times children were fed. Thus in this stage, these domains of feeding were further defined and the relationships between them established. For instance, in order to establish the cultural pattern of child feeding, one area explored was the length of breastfeeding, time of introduction of other feeds and when children were completely weaned. The data were therefore interpreted to establish the patterns of these practices. In this process, the summaries made under the various themes in the charts in appendix 13 were examined to determine whether

One issue that has been revealed and seemed to be obvious in interacting with many participants is food insecurity. Even though many parents have indicated their willingness to provide food and feed their children regularly, there seems to be some vagueness on the consistency of food supply due to unstable incomes.

Most households depend on their farm produce to meet their staple food needs and to act as a source of income to buy other food ingredients that they do not produce. Thus, they would normally sell some of their staple food to buy other types of foodstuff that they do not produce, especially food accompaniments. However, it seems these staples are not usually sufficient to take households to the next harvest. Some households decide from the outset that on some occasions they will not use the food so that their store of food might take them to the next season.

Another category of household may consume their food as it is available until they do not have anymore and then the children stay without food.

Fathers may migrate to other towns to find income and additional food to supplement their farm produce; however, this does not ensure regular income flow or that children eat adequately. This is because fathers would usually stay away for between 3 to 6 months before returning with their bounty, which could be money or foodstuff.

Box 4.1 : Memo interpreting the data on Food insecurity

these indeed reflected the themes and subthemes they intended to explain and whether the links that were developed between the various themes made sense. Some themes were then refined after reviewing earlier interpretations. Links between themes were established and new high-level concepts were generated. In order to arrive at the bigger picture grounded in the data, a reference to the transcripts and field notes continued at this level. During this process, memos were refined to reflect the final meaning of themes as these were refined. Box 4.1 is an example of the summary of a memo illustrating the summaries of data and the universal theme.

In most framework analysis, researchers have shown exhibits of theoretical construct they developed during the familiarisation process, and juxtaposed such constructs with their final major concepts. In some of the literature (Furber, 2010; Ward et al., 2013), the final themes were found to be similar to the initial abstractions. This was also reflected in my own analysis. An overview of the themes that finally emerged is outlined in section 5.5 chapter five.

4.15. Ethical Considerations

These were the moral issues related to the conduct of this study, as well as the measures that were implemented to uphold the dignity and autonomy of participants in the study. The moral motive of this study is to generate information that could promote optimal child feeding and therefore promote positive nutritional outcomes for children. This motive alone would not, however, ensure that the dignity of participants in this study was preserved and physical harm avoided. Children are vulnerable and can be neglected or undermined because of their age and limited capacity to make decisions. However, the role of children in this study did not directly expose them to any form of unethical behaviour or harm resulting from the research process. In the planning phase of the research, it was anticipated that behaviours that might compromise the safety of children could be identified, and provision was made to safeguard the well-being of children during the process. Fortunately, there was no incident that needed a safeguarding measure during the data collection.

Other individuals in this research who could be affected by ethical issues were the informants including mothers, fathers, grandfather's grandmother's and diviners. The main ethical issues in this study included participants' privacy and confidentiality, autonomy, harm and protection, and informed consent.

4.15.1 Privacy

This study required me to live with families for a large part of the day during which they performed most of their daily routines, in order to observe the preparation and feeding of children in the participants' home environment. This generally involved some intrusion into participants' privacy, especially considering that I was a stranger in the community. I, therefore, pre-informed participants during the information giving about potential areas I was interested in seeing and sought their consent. I also reassured them of my intention to consciously avoid areas of the households that had nothing to do with the study. It was discovered from the fieldwork that cooking was a social process. Thus even though, I initially felt uncomfortable, participants from the

outset invited me to participate in the cooking process. However, in order not to create any suspicion, when participants invited me into their sleeping areas, I explained to them that I was not allowed to enter their sleeping places. This sounded humorous to some participants however it appeared to have strengthened their trust in me.

I also anticipated that other aspects of the families' lives besides the study of child feeding would be visible to me as I engaged with the families. Moreover, cultural practices are influenced by values which have spiritual connotations that people may regard as private (Akuoku, 2008). Even though a few participants hesitated to discuss issues pertaining to food restrictions and practices initially, they eventually opened up and discussed with me issues relating to their values. I found out that participants were hesitant to acknowledge such practices knowing that some of the food restrictions in them were contrary to what health workers recommended.

4.9.2. Confidentiality and data protection

Confidentiality of participants' information was another ethical issue. The use of the data and all the people who may access it was discussed with participants. The ways of protecting the data were also explained to participants. When participants were informed of the potential of the processed information being published, most of them asked that the published information be made available to them via their children who could read. Participants were not pleased that the identity of those contributing to the data would not be revealed. I explained to them that it was the policy of the university to keep their identity anonymous. I also explained to participants how the confidentiality of information would be preserved through password protection and encryption of the storage devices. I used a door key and lock to simulate this during the explanation as most of the participants were not technologically literate. I felt it was paternalistic on my part to decide whether participants' private issues should be made public. Participants felt it would be a sense of pride for their names to be documented. Issues of confidentiality that occurred were when two mothers approached me to complain about their husbands. I observed that they talked in low voices. I, therefore, reminded them about the pledge to keep all information confidential and this encouraged them and they kept on contacting me.

4.15.2 Harmful practice and safeguarding

Safety of individuals was an important issue in the conduct of research projects. With regards to this study, children, key informants, and the researcher were the major individuals who were considered as potential victims of harm. Even though this study had little risk to participants, and no harm occurred during the data collection, a contingency plan was in place. Participants were told from the outset of my concern for children's well-being. I also informed them of my intention to intervene on issues that could affect the well-being of children based on their consent and the possibility of involving third persons such as the community nurse. Participants were also informed that if any aspect of the research process affected them emotionally or physically, they were encouraged to disclose that so that necessary action could be taken. To safeguard me against any

harm, the university of Manchester lone worker policy and an escalation procedure (appendix 14) was scheduled.

4.15.3 **Participants' autonomy and informed consent**

Contemporary research ethicists argue that truly autonomous research participants are those who are involved in the research from the planning phase to the evaluation of the benefits of the research outcome (Little, 1999). It is widely documented that autonomy is better exercised when individuals have adequate information to empower them to make informed decisions (Schoepf, 1991; Schrag, 2009). Accordingly, the research community promotes the provision of adequate information about the research to participants, as a way of involving participants in the research, and to avoid participants being used or perceived as a means to an end (Cassell and Jacobs, 1987). For pragmatic reasons, some research processes such as a Ph.D. project may not permit the full involvement of participants. Nevertheless, some level of self-determination was promoted in this study. Participants were given the opportunity to decide upon their involvement in the research process and they were given information about the study prior to the commencement of data collection. Participants were also given information throughout the fieldwork as a way of clarifying issues and redirecting participants to keep their conversation with me within the context of the study. This was to ensure that participants did not divulge more information than they wished only to regret it later. A copy of the information sheet was left with participants. Throughout the fieldwork, participants demonstrated their understanding of the research. Most participants' recount what the project is about when I engaged them in interviews and request them to indicate if they understood what the project was about. Some participants even asked if I was not tired of repeating myself. However, at every meeting with participants, I persistently recapped all the information about the research project.

The information about the research that was given to the participants included the purpose of the research, its benefits to participants, the fieldwork activities, roles of the participants and the role of the researcher. This was explained in Gurune, the local dialect of the community. School-going young adults who were in some of the households were requested by the adults to receive and keep copies of the information sheets. They were encouraged to read and explain further the information to members of their households. Participants present at the initial information giving session were told of the possibility of other household members being invited to take part in the study as it went on. These people were then given the information during the fieldwork as described earlier. Subsequently, consent was received from the household head and the individual members of the household who were key informants recruited after the initial information giving.

During the information giving some participants questioned who was to bear the cost of them contacting the University of Manchester to report any misconduct on my part. I encouraged participants to contact the Regional Health Directorate which acted as gatekeeper if my behaviour was not pleasing to them. This is because the health directorate had permitted my access to the community and acted as gatekeeper based on the ethical clearance from the University of

Manchester appendix 13. I was later informed by the midwife in the community's CHPS compound that a teacher from one of the households who was not around during the fieldwork approached her to confirm my identity and that I was not a fraud.

4.15.4 Incentives

Remunerating participants has been debated in the research literature and interpreted in different ways. Some research ethicists suggest that incentives were a means of coercing participants who may otherwise not be willing to participate (Moodley and Myer, 2008). This suggestion appears to be founded on information that remuneration equated to high participation rates. Others see remuneration as a way of appreciating participants for their time and travel to data collection sites in some cases (Moodley and Myer, 2008). It has been suggested that if remuneration is necessary for research, it should be clearly indicated in participant information sheets. It is also advocated that the purpose for the remuneration should be well explained to participants to prevent them from interpreting it as a mean of 'buying their participation' (Moodley and Myer, 2008).

In this study, remuneration was given to participants at the end of the fieldwork. An equivalent of five pounds was given to household heads for the care of each child that was included in the household. Upon consultation with health workers, Household heads were given the equivalent of two pounds in Ghana cedis on completion of the fieldwork as appreciation for participation in the research. This decision was reached after the community's midwife suggested that households' head may expect a gift and since individual participants could not be given money, it was suggested that incentives should be given for the care of the children in the households participating in the research.

4.16. Rigour and Trustworthiness of this study

Research findings are considered useful in influencing policy and guiding practice if the research process is considered robust (Ryan, nd). Robustness of qualitative research is generally assured through observing researcher, participants and research environment impact on the research process and its outcome (Rolfe, 2006). In qualitative research, the aim is to understand phenomena in the context of natural influences, and requires an interactive approach. The process of participant observation and semi-structured ethnographic interviews employed in this data generation involved a high level of direct interaction between me and participants increased the chances of the input of researcher's preconceptions and subjective influences on the interpretation of the phenomena. Critics argue that these influences prevent the generation of pure information that would otherwise be generated if standardised quantitative methods were used.

The essence of qualitative research like this one is to understand the study community's unique perspective of child feeding as it occurs in their natural environment, which is best done through direct interaction with the participants. Nevertheless, there is still the need to ensure the quality of the research process by consciously accounting for the influences to enable readers to recognise them and decide the robustness of the study. This allows readers to understand the nature of the quality context to decide results transferability. A typical strategy for guiding the conduct of

qualitative research to ensure quality is Guba and Lincoln’s trustworthiness criteria, which was employed in this study. Table 4.4 is a list of the criteria and the activities that were employed to ensure the quality of this study. The application of the criteria in this study is presented in line with the phases of the study.

4.16.1 Prior to Fieldwork

The decisions and plans put in place for carrying out the study were informed by the aim of the study. The choice of appropriate design allows the purpose of the study to be achieved, and this is the first step in meeting (Lincoln and Guba, 1985) trustworthy criteria. Ethnography was chosen as the most suitable design as it has been widely used to study the general or particular way of life of a people (Wolcott, 1999; Fetterman, 1989). Ethnography has the value of guaranteeing the discovery of the ordinary, day-to-day taken-for-granted details of the phenomena of child feeding (Spradley, 1979). In this ethnographic study, I immersed myself in the natural environment of the participants, familiarised myself with their ways, and used natural ways of communicating such as chatting and sharing information and values about child feeding to learn from the participants (Fetterman, 1989). As discussed in the methodology section, the process allowed me to obtain the participants’ perspective on child feeding, which is the aim and purpose of this study.

Table 4.4: Trustworthiness criteria

Criterion	Description	Activities/Techniques
Credibility:	Evidence of the truth of the findings	Triangulation in data collection/ sources; Randomising the purposive sample; Immersion & familiarisation with the culture to reduce self-consciousness & reporting bias Iterative question/checks Peer scrutiny Rich description
Transferability	Suggests applicability of the findings to other contexts.	Adequate information on the context Rich description of findings Adequate description of data collection, participants, time and samples
Dependability	Demonstrates consistency and repeatability of the study	Similar to credibility Details of research design and implementation processes clearly outlined for readers to evaluate procedures
Confirmability	Shows the degree of neutrality and the emic rather than etic perspective of the findings	Reflexivity Triangulation Rich description of methodology

Source: Adapted from Shenton (2004) and (Lincoln and Guba, 1985)

The tendency of researchers to select participants based on the researcher’s subjective desire to obtain a specific type of data could prevent me from obtaining a comprehensive perspective of

child feeding thus reducing the credibility of results because the incomplete information could be misconstrued as the entirety of the community's child feeding practices.

Whilst the selection of research participants in qualitative research is important to ensure that data rich participants are recruited, randomisations and blinding are not necessary and may potentially lead to missing data-rich sources. In all research, qualitative or quantitative, the purpose of research influences the choice of participants (Silverman, 2013). Thus in qualitative research, the identification of individuals deemed potentially rich sources of data are essential. This ensures that the required data is generated for describing the phenomena. In this study, the choice of participants was data driven. Anyone who was thought to have a role in child feeding either by directly preparing children food or making decisions related to child feeding were potentially included in the sample before the fieldwork. The selection of participants this way was in order to achieve the credibility of the data, by demonstrating that the data generated was clarified from multiple sources rather than using presumptions of ideal strategies to validate the data. All information was generated from individuals who possessed information about child feeding. Based on my partial knowledge of who may feed a child, I proposed female members of households, whilst indicating that males could be included during the fieldwork if they were considered rich sources of data. This process of selecting mothers alongside anyone who contributed in child feeding was to ensure the dependability and confirmability of the study as suggested by (Guba and Lincoln, 1994) in Table 4.4.

4.16.2 During fieldwork

As planned, the decision about who to include as participants was finalised during the fieldwork. During the fieldwork, it was found that not only were men key in the decision making on the food choices of children, but spiritual leaders (diviners) within the community were also very important in the decision making as they set children's food restrictions and taboos. Men, including household heads, grandfathers, fathers, and diviners were therefore included as key participants. The inclusion of these categories of participants met the credibility criteria by ensuring that participants chosen were data driven. The multiple categories of participants also guaranteed the triangulation of data sources. This allowed verification of the data obtained thus further ensuring confirmability, credibility, and dependability of the results from the study.

Another strategy that was applied to ensure robustness of this study was the identification of households from the study community. During the initial meeting with gatekeepers to explain the nature of the study, gatekeepers suggested that they were able to find adequate households without difficulty. They suggested producing a list of selected households and for me to generate the data from those households. However, to prevent households which could be skewed to specific types of participants may prevent diversity; I explained to them the need to allow the participants to be recruited to represent the variety of people and households within the community. Gatekeepers further suggested that all spectrum of the age group (0-5years) could be recruited at the community health planning and services (CHPS) compound level. However,

snowball sampling was used to supplement the initial purposive sampling. The snowball sampling was added to ensure a wide representation of the community since it was not clear whether all children were attending the child health clinics at which the recruitment was initiated.

Furthermore, to ensure that the amount of data generated was adequate to give a rich description of child feeding within the community, the sample size was not based on hunches or feelings, but data saturation. The number of participants initially proposed in this study was forty-five interviewees from fifteen households. The fifteen households were adequate to provide the information considering the number of children and adult participants in each household. However, after interviewing forty-five participants, there was the need to interview more participants to clarify and confirm themes that emerged from the initial data. Eventually, by the time I had finished interviewing fifty-two participants, no new data emerged. This process allowed the generation of adequate information for a rich description of child feeding. This strategy helped me to validate the dependability and credibility of the data generated as unclear issues were clarified.

It has been suggested that one way to establish the true value of data as a reflection of participants' (Emic) perspectives (Guba, 1981) is through the robustness of the data collection process. The data collection process was therefore designed to ensure that the data generated was a true reflection of the meaning of the data to participants. Ethnographic interviews were the approach to achieve the emic perspective. Ethnographic interviews are typically contextual, occurring alongside physical activity and mainly directed by the responses of the interviewees. For most mothers, in particular, part of the interviews occurred during food preparation and when children were being fed. The iterative interviews allowed me to check, clarify and confirm information about issues discussed. This triangulation of data collection sources and the iterative methods and processes enhanced the robustness of data generation and therefore the results.

The quality and usefulness of research findings also lie in their transferability to other contexts. Qualitative research like this study is however criticised for its context-specific approach, trust in multiple realities and a lack of neutrality, which make the transferability of results to other geographical locations disputed (Guba, 1981). However, Guba (1981) suggests that qualitative results could be transferred to other settings if researchers gave adequate information about the context and the field procedures clarifying the socio-cultural subtleties of the population.

Adequately describing data collection strategies, participants and the time used in the study are also important ways of promoting the applicability of a qualitative study's results. The transferability of results may also be enhanced if a rich description of the results, with verbatim quotes from the data, is provided by the researcher (Ellis, 2016). The extent to which these ways of promoting applicability are employed will determine the level of confidence with which readers can apply the data to other studies. The sociocultural and physical environment of the community were extensively explored and analysed during the fieldwork and a rich description provided in the results. I, therefore, believe that the results of this study could be transferred to settings similar to the study community if they shared sufficient characteristics. The setting of this study directly

influences child feeding. The description of the study context may, therefore, indicate to readers why some aspects of the phenomenon child feeding occur and help them to decide if that is applicable to the settings in which the reader may aim to apply the findings.

As indicated earlier in this section, accessing the participants, recruiting the participants, the data collection procedure, and all the activities during the data collection process have been described fully. The findings have also been described extensively with verbatim quotes from participants following every explanation of the results. This provides readers with the source of the concepts as these emerged from the data and demonstrate all the four criteria for trustworthiness namely; credibility, transferability, dependability and confirmability of a naturalistic qualitative inquiry.

4.16.3 Post-fieldwork; data analysis and thesis writing

The trustworthiness of this study was further ensured through the data analysis and the rich description of the study report based on the fieldwork. Although part of the data analysis took place in the field, most of it was done after the field work. The analysis process was also done transparently and systematically to ensure the accuracy of the conclusions drawn from the study findings. An inductive approach was applied to ensure that emergent themes were data driven. This started in the field with interim analysis and the emerging issues were verified before the end of the fieldwork by theoretically sampling additional participants and clarifying issues through further interviewing of original participants. In order for the link between the data and the final themes to be easily identifiable, a framework matrix was generated displaying the verbatim data from transcripts and field notes. The transparency of the data analysis and the writing of the report were mainly enhanced by the feedback received from the continuous review of the analysis, my writing and my research presentations by my supervisors during the course of my study. In addition, the general outline of the study, showing the research design, the implementation of the design and the results illustrate the journey through the study. This emphasis on transparency allows readers to independently judge for themselves the trustworthiness and rigour of the study. Reflexivity, which further helps readers to evaluate the rigour of the study, is discussed in the next section.

4.17. Reflexivity

My preconceived assumptions underpinned by my experiences, beliefs, and knowledge of child feeding and perception of the context influence. Moderation of researchers influence on qualitative research credibility appears to be given more prominence. However, in this study the influences were mutual. Reflexivity was applied as a measure for accounting for the influences on the fieldwork and interpretation of the data.

Figure 4.5: my personal characteristics



4.17.1 Planning for field work

Reflexivity strategies have been suggested as a way of promoting the rigour and trustworthiness of qualitative research as it allows the researcher to account for influences and how these are managed in the study. A reflexive position could be maintained by implementing the following strategies: recognising one's biases; accounting for personal assumptions; use of informants to check one's biases; soliciting feedback from analysed results and the use of colleagues to check interpretations (Savin-Baden, 2004; Mauthner and Doucet, 2003).

4.17.2 My preconceptions

Even though my personal characteristics as shown in figure 4.5 suggests that my preconceptions related to child feeding could influence my interpretation of the data, I was not consciously aware of which of my assumptions would impact my interpretation of the data. Whilst my motivation to conduct this study was based on my view that culture could be contributing the suboptimal feeding practices, I also believed that since the study community was receiving public health information, I did not perceive culture to have a high level of influence. I also believed that biological parents were responsible for child care and therefore their feeding. Although, I supposed that there would be poverty, because Ghana had developed to a lower middle country from highly indebted poor country, poverty could not prevent families from providing at least one meal a day for children. I also perceived that with the proliferation of Christian religious denominations in Ghana, feeding practices were likely to be influenced by the Christian religion in particular.

Considering these assumptions, a plan to manage the impact these potential influences was put in place. During the planning phase of this study, I explored the possible ways in which I could influence the research process. One of the things I did before the fieldwork to keep me conscious of my potential biases was to make an inventory of my personal characteristics that could potentially influence the research process. Figure 4.5 shows my personal characteristics which shaped the planning of the study and influenced the creation of this thesis.

My position as a health worker with my theoretical knowledge of the subject child feeding, my experience as a mother and a Ghanaian who could speak the language of the study community were noted as potential factors that could bias the process. I noted these down as issues to consider which could unconsciously influence me and the data collection process. I also found from the literature that keeping a reflective journal of issues raised during the fieldwork was a helpful way of maintaining a reflexive position. I, therefore, planned a reflective journal for all aspect of the fieldwork before I started the fieldwork.

4.17.3 **Fieldwork effect on me**

I had known that poverty existed in some parts of Ghana, and thought that I might meet people living in poverty during the fieldwork. However, I did not anticipate the emotions that were evoked in me when I was confronted with the realities of poverty and food insecurity. When I listened to one woman describe her child's feeding and how she found food daily, I had to stop asking questions to enable me to hold back my tears. I am not sure whether the woman noticed my reaction and wonder if that affected how she subsequently interacted with me. This woman looked for me several times after I had completed my scheduled interaction with her and provided me with more information relevant to the study. I perceived some of the information as intimate and tried to stop her from talking to me about such things. I was not sure if I was attempting to control the situation instead of allowing her to carry on. However, after reflecting on the issue, and based on my knowledge of the nature of social interactions, I allowed her to share all her information since it was culturally appropriate. She reported in detail her husband's attitude towards the care of their children. At the end, I realised that most of the information was relevant in understanding how her children were fed. I also felt that the woman's openness to me was partially based on the relationship she had built with me when we talked initially. I am unable to conclude as to whether or not she noticed my reaction and if that contributed to her wish to come back to confide in me.

Another issue during the fieldwork which influenced me was the other roles women played in the community, other than child feeding. At the initial interaction with households, I had observed that mothers often went out and left children under-five years old, sometimes without food or instructions on how they could obtain food. I concluded that women went out for social functions neglecting the feeding of their children. As a result, in my journal, I stated that mothers were not acting responsibly with regard to needs of their children. However, as the fieldwork progressed, not only did I realise that my interpretation was judgemental, but that the activities mothers attended were social obligations and regarded as important as child feeding in the community. I also found out that the community had shared responsibility towards children. Thus, whereas, I had perceived that mothers were not acting responsibly, there were actually implied agreements in place with other members of the household or the community to feed the left-behind children.

Upon reflecting on my reaction and interpretation I realised that my maternal instincts and my health professional knowledge predominated my thoughts during these occasions. This interpretation also appears to be aligned with the western individualistic lens. As will be seen in the

findings, the study community has collective living arrangement, which allows them to cooperate and share child care, thus acting interdependently. However, my interpretation focused on the individualistic ideal that individual parents and mothers, in particular, should care for their children, as would be stressed in the western individualistic cultures which espouse independence of the individual to care for the self and solely accountable for their responsibilities(Cherry, 2017).

However, the reflective journal was helpful in aiding me to think through the issues and to understand from the participants' perspective their course of action. In fact, these experiences immediately improved my perspective and I became increasingly aware of my own tacit familiarity with how our lives as Ghanaian are organised mainly around our connections with each other. Consequently, I considered aspects of my experiences as part of the process and developed an open mind towards the issues I encountered during the fieldwork.

4.17.4 Effect of me on the fieldwork

I also found that all my characteristics influenced the community's relationship with me. During the community entry process, I was introduced as a nursing student. However, it appeared my identity as a nurse stuck more with most participants than my identity as a student. This had a mixed impact on how some participants communicated with me. Even though the immersing process worked and resulted in participants communicating openly, participants also opened up to me because of my identity as a health worker. From anecdotal knowledge, health professionals in rural areas are regarded with respect because of their education. However, from the fieldwork, I also found that young health professionals may be regarded as inexperienced. The ways in which participants regarded health professionals had diverse impacts on the way participants communicated with me. For instance, elderly participants such as grandfathers saw me as an avenue for venting their frustrations and disagreements with things health professionals recommended to mothers on child feeding. A man said *"is it not you the nurses and doctors who have made the children's taste for food to change?"* This excerpt is extracted from a grandfather who appeared very suspicious of the information health professionals gave to mothers. He suggested that most of the health workers he had encountered in the community were too young and he did not trust that they were experienced enough to understand child feeding.

Other participants, such as mothers, also related to me as a health worker by asking me questions on how they could feed their children better. However, I explained to them that despite my professional background, I was not acting in that capacity and encouraged them to be opened with me. These instances were all positive to the data collection because they resulted in data generation that was relevant to the study and provided some explanation as to why community members might not follow the advice given by health professionals.

Some participants were initially unwilling to talk to me about some aspects of their children's feeding because of their perception of me as a health professional. At the beginning of my interactions with mothers, they often told me things about their child's feeding that they did not actually practice. However, as the relationship developed, some mothers unconsciously said

contradictory things, whilst others admitted after probing that they did not describe things that actually happened as they were not sure how I would react since I was also a health worker. I was able to reassure them of the confidential agreement and the fact that gathering the information was for the purpose of gaining knowledge of the culture rather than to be used against them.

My position as a mother and a woman from northern Ghana also impacted on mothers' interactions with me. During interviews, some participants were not willing to answer some questions. They would ask questions back at me, suggesting that as a woman and a mother from northern Ghana, I ought to know the answers to the questions I asked. However, when I negotiated with them to answer such questions, most of them reversed their belief and communicated that people like me who lived in towns did things differently. This belief appeared to inspire mothers to interact openly with me after we explored it.

4.17.5 Managing the influences

As described above, I identified the sources of my potential biases and used recommended means to account for, and reduce their effect on the conclusions of the study. To further minimise my influence on the study outcome, the interim data analysis during the field work was very useful. Results of the interim analysis were used to solicit feedback from participants. Issues that were not the true reflection of participants' views were clarified. For instance, I initially assumed those Islamic or Christian households' mainly observed taboos and food restrictions relating to their religions. However, when I returned to clarify some of my interpretations, participants indicated that some taboos and restrictions were derived from tradition rather than religion. A practice that was commonly practiced by all belief systems in the community was the 'initial oral intake' ritual of new-borns, which was reported to be a local Traditional African religious practice. Participants further indicated that such practice was an important part of the community's tradition and was not alterable irrespective of one's religious denomination. The initial feedback provided me with a context on how to proceed with the interpretation of the rest of the data. Going forward with the analysis, I utilised (Spradley, 1980) relational theory of meanings and hermeneutic circle of interpretation principles to analyse subsequent data that I received from participants. The hermeneutic principle presupposes that the individual part and the whole of a text must be interdependently interpreted for their meaning to be understood. This suggests that in interpreting and making sense of the child feeding data, the whole culture of the community needed to be taken into consideration. Thus, I considered that everything that I observed or was told by participants was related to all the other information in some way, as suggested by Spradley. Similarly, as suggested by Heidegger, I became more conscious of the context of the data. This made it possible for me to carry out the rest of the research with enhanced consideration for the participant's perspective. I recognised early that I did not deeply contemplate on the initial data I obtained from the fieldwork. I used the reflexive journaling to review my ability to interpret the data effectively and this improved.

Another issue that required managing was how to navigate the tensions that occurred due to some participants such as grandparents and diviners' traditional knowledge, and their concerns about the public health information given by health workers. I usually listened to their concerns and subsequently explained to them how such differing information was one of the reasons for conducting the study to enable health services to streamline the information that would be given on child feeding. I also identified with them, by reiterating our common goal (health services and their effort) to promote the welfare of children. This usually calmed them and they became more interested and discussed their perspectives of child feeding with me.

Furthermore, the feedback I received from my supervisors enhanced the confirmability of the study. Throughout the process, my two supervisors verified the data with the interpretations I made of it. Unlike me, who appeared to over-identify with the culture because of its similarities with my own culture, and as the individual who collected the data, my supervisors were complete strangers to the culture but had knowledge of feeding recommendations because of their professional backgrounds. Our two divergent characteristics helped to reduce the potential tensions due to the co-existence of strangeness and identification in studying cultural phenomena that the researcher has some knowledge about (Pellatt, 2003).

4.18. Summary

In this chapter, I have outlined how participants were recruited and showed my journey throughout the fieldwork. This includes how all participants were recruited, the process of obtaining consent, how I conducted interviews and participant observation. I also discussed how the data was managed and interpretation made to explain child feeding in the community. I also discussed how ethical issues were managed. The chapter ended with how I ensured the quality of the study processes and how I managed my personal influences to enhance the interpretative rigour of the findings.

CHAPTER FIVE
INTRODUCTION TO THE RESULTS

Chapter 5: Introduction to the results

5.1. Overview

This chapter presents the background characteristics of the study population and provides an introduction to the findings chapters.

5.2. Participating population Demographics

This study was conducted between October 2014 and May 2015 in a rural community in Ghana as shown on the map in Figure 1.2. A community is the social group with shared history and culture living in a locality. Fifteen households with 32 children under five years were included in the study. Table shows the participant and children's age category. Most informants could not tell their ages. Only 3 of the mothers knew their ages, which were 14, 16 and 17 years. Two fathers had University level education. Most of the participants did not have any formal education and none of them could read nor write, even though the younger mothers reported they had received some primary education but never completed primary school.

Table 5.1: Summary Category of Participants'

Father	Mother	Grandmother	Grandfather	Diviner	Other relative
8	24	13	3	3	1

Table 5.2: Children by age category

Age category/months	Number
0-5	4
6-8	4
9-23	13
24-59	11

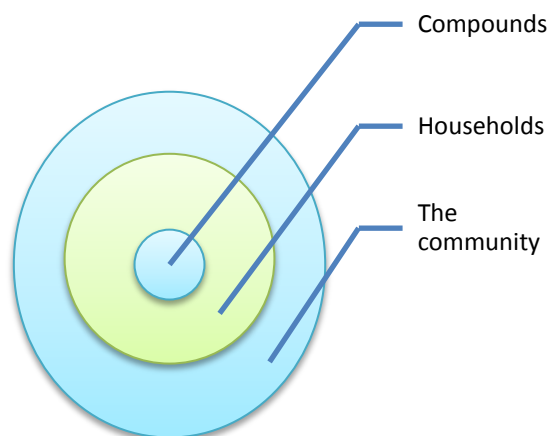
5.3. Households & Family system

The community members live in typical northern Ghanaian rural-styled households with several compounds within a household. A household in this study refers to a house and its occupants. Figure 5.1 shows the relationship between a compound and household in the community and Figure.5.2 is an example of a typical household and compounds.

Table 5.3: Numerical character of Study sample

Household	Compounds	Household members	children	participants
15	37	195	32	52

Figure 5.1: Relationship between community, households, and compounds



5.4. Religion

Four participants reported that their families were Muslims and 8 participants reported that they were Christians. Two of the participants also reported to practicing African traditional religion. The rest of the participants indicated that they were not associated with any religion.

Table 5.4: Distribution of religious groups

Denomination	Islam	Christians	African traditional religion	Non-aligned
Number	4	8	2	38

5.5. Socioeconomic background of participants

Amenities in the community included a community-based health planning and service (CHPS) centre, one state primary and Junior high schools and a privately owned kindergarten. One untarred road passes through the community to the next village. It also has a catholic church, a community centre and a couple of protestant churches. There is no public transportation directly to the community. These community members contact other Villages through the nearest villages, where private commercial transport operates. The commonest means of travelling is the use of motorbike, followed by donkey carts and then bicycles and walking. Most participants were peasant farmers and petty traders. The trading activities ranged from the sale of food items, household utensils and animals amongst others. Two other participants, a father, and a mother worked as community health volunteers, assisting health professionals to mobilise community members for health durbars (community health rallies jointly controlled with community and opinion leaders) and mass immunization, and transportation of critically ill community members to the nearest hospitals. Two of the fathers, whom I did not encounter during the fieldwork, were allegedly working in the formal sector with one being a teacher, but the other man's relatives could not tell what job he did.

5.6. **Label of quotes**

The identity of the direct quotes accompanying explanations are field notes (FN) from observations interviews quotes which do not have the FN label in them. The rest of the identifiers are households' (H), compound (Cp), name of participants and relationship to a child. M=mother, F=father, GM=Grandmother and GF=father

5.7. **Overview of the themes**

The themes that emerged from the data are group under three major themes with subthemes. The major themes represent the three findings chapters as shown below in Table 5.5.

Figure.5.2: Example of households and compounds in the community

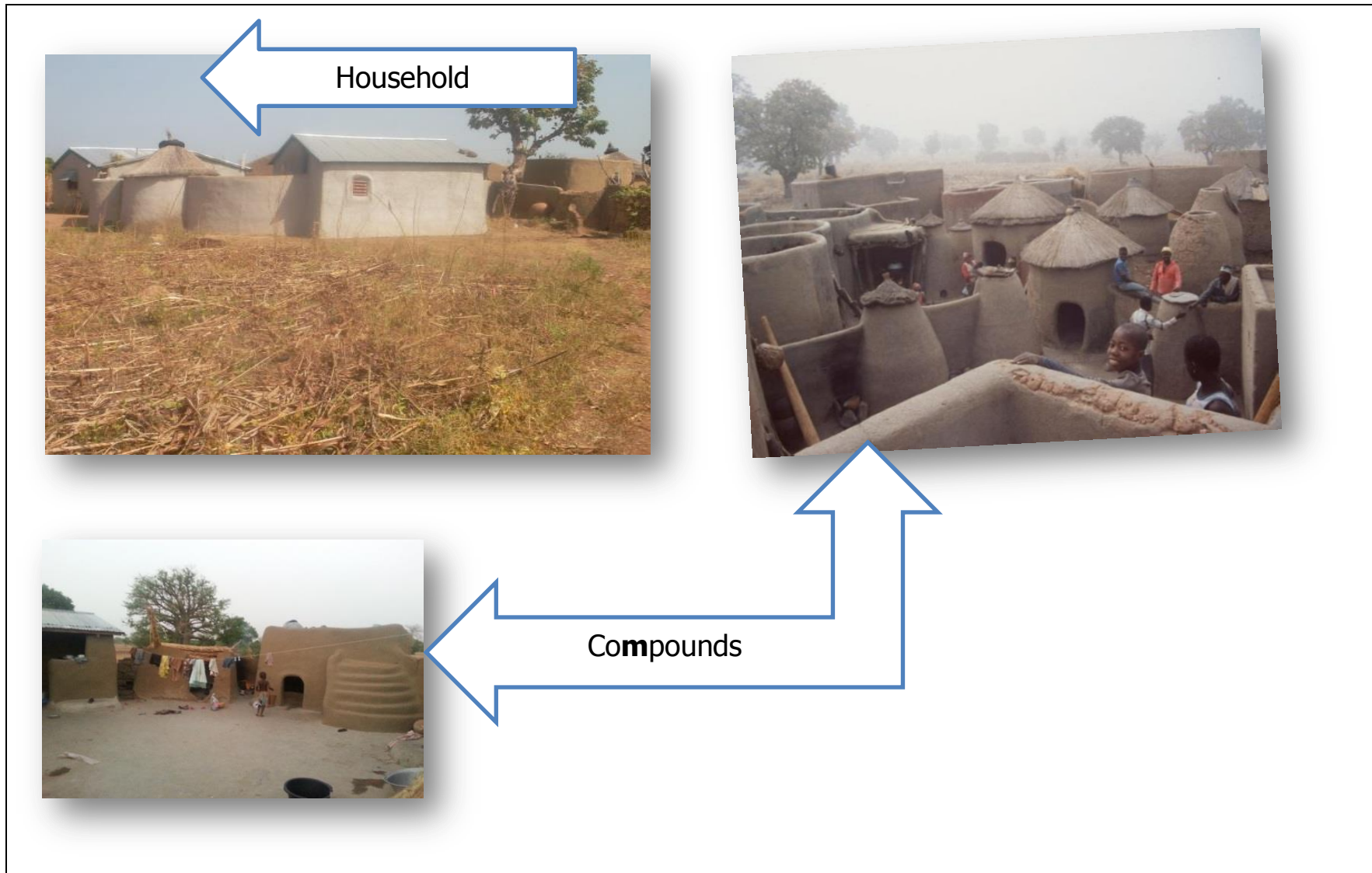


Table 5.5: Summary of findings

Chapter 6: The community within which children live and eat	Chapter 7: Food insecurity complexities & management Strategies	Chapter 8: Discourses in the feeding of children
<ul style="list-style-type: none"> • Physical structure of households, • Family systems and living arrangements • Headship and control in child feeding issues <ul style="list-style-type: none"> • Household childcare arrangements • Child ownership and children's food provision • Household leadership and children food decision makers • 'Under the trees & around the cooking fire' <ul style="list-style-type: none"> • Households' children's food preparation and cooking arrangements • Preparation of foodstuffs and food ingredients • Social scenes and interactions 	<ul style="list-style-type: none"> • The nature, ironies, and complexities of food insecurity • Poverty <ul style="list-style-type: none"> • Households' incomes <ul style="list-style-type: none"> • Peasant farming • Trading • Remittances • Sensitivities in households' Food provision • Households' dependency ratios • Daily and seasonal meals gap: The aftermath of food insecurity • Strategies for dealing with food insecurity and meals Gaps <ul style="list-style-type: none"> • Planned rationing of children's food • Households Food cooking pattern and frequency • Food sharing & communal cooking • Textures of Foods given to Children 	<ul style="list-style-type: none"> • Type and sources of child feeding information <ul style="list-style-type: none"> • Local community knowledge • Understanding the Community's local child feeding Information • The symbolism of household Food and child feeding • Health professionals' information (HPI) on children's feeding

CHAPTER SIX
THE COMMUNITY WITHIN WHICH CHILDREN LIVE
AND EAT

Chapter 6: The community within which children live and eat

6.1. Overview

Context is a vital feature of ethnographic research reports involving human cultural phenomena (Hammersley, 2007a; Rice et al., 1998; Rice and Ezzy, 2000). Context is generally perceived mainly as part of participants' background information and not necessarily as an answer to research questions. However, in ethnographic studies, context may directly answer a research question (Fetterman, 1989). In this study, the social and physical environment was observed as significant in understanding child feeding as it directly influenced households' interactions and activities. This chapter presents the social and physical environment within which child feeding occurred during the fieldwork.

6.2. Households

"Households" in this study denotes both the physical structure and the members of the biological family living in the household. Households were composed of between one and six compounds, with an average of three. A compound in this context is the smallest unit within a bigger household and is made up of bedrooms, cooking area or kitchen, a bathing area or a bathroom and a storeroom. All these rooms may open into a space within compounds, which can be regarded as a living area. Individuals gather in these areas to chat. The field notes (FN) of Anaba's and Akule describe characteristic households and compounds;

'Anaba's household was made up of five compounds...Each compound had two or three gates, one of which opened into a main yard with the other gate (s) opening either into other compounds or outside the house'. **FN, Anaba's H**

'The house was made up of one compound. In the compound, a kitchen area was located in the northeast and there were two rooms to the northwest. The southern part of the house opened into a compound where cattle and other animals were kept. One room that served as the storeroom was reported as also being used during the raining season for cooking when it rained. However, the usual cooking place was the area within the compound's open space. In this house, the kitchen area was situated between two traditionally built hencoops' **FN, Akule's HCp1**

Compounds were positioned in close proximity to each other which facilitated communication between the families, both extended and nuclear. Households' social interactions took place during the mornings when the sun was rising, and in the evenings when the sun was going down and atmospheric temperatures were relatively low. During these times the compounds' open space (yard) are shady and people are able to gather and sit around. The physical links between the living units facilitated the movement of individuals, including children, between the places where they may also feed.

6.3. Family systems and living arrangements

Salm and Falola (2002); Briggs (2014), suggested that the extended family system was the predominant system of family structure in Ghana, and this was true of the study community although there were also a few nuclear families. The extended family system existed on two levels.

The levels were differentiated mainly by whether the family lived within a household or a compound. At the household level, individuals ranged across four generations, with great-grandparents and grandparents living with their grandchildren, children, brothers and sisters, aunts, uncles, and cousins. At the compound level of the extended family, up to three direct biological generations of a family might live together. The individuals might be similar to those at the household level. The field note excerpts from Anaba and Amisah's households' show examples of the extended family system:

Anaba's house was made up of five compounds. Four of the compounds belonged to the four wives of the household head, who was also the grandfather of the children under-five years old included in the study. The fifth compound belonged to Anaba's son and his wife. Two of the household head's wives lived alone most of the time, as most of their children were said to have grown and migrated to other parts of the country and were not around during the fieldwork with the exception of the son of one of these women who lived in his own compound with his wife and children. One of the household head's wives reported that the household head had more than 10 children from his four wives; the participant herself had five of the children and her co-wives had between three and six children. She also indicated that there might be more children than her estimated number and that she could not count them since some of the children had died. She said to me " oh my daughter, if it were when we were having children, you would not be able to count. These compounds were always full. We (wives of brothers) were also lucky, you know our mother in-law and her rival (her father in-law's other wife) were around and our sister-in-laws too, so it was always a happy house. However, (pause) today, everybody minds his or her own business..." **Anaba's H Apoka, CP1GM**

The household head and his most junior wife and their children occupied the third compound. One of the daughter in-laws of the household head and her children occupied the fourth compound, as this woman's mother in-law had returned to her father's house and the husband of this woman had migrated to the capital town of Ghana. Each compound had two or three gates, one of which opened onto a main yard with the other gate (s) opening either into other compounds or outside the house. **FN, Anaba's H,**

A man, his siblings, his wife, his children and his mother lived in the fifth compound.

FN Amisah's H

Although in Anaba's household the compounds appeared to be arranged in line with the number of wives, household structures did not seem to be determined solely by polygamy. The number of brothers in a family and the value of living together as one large group also seemed to influence this arrangement. Participants did not explicitly state this but anecdotal data showed that households might consist of several brothers, with their wives, in their own compounds or a man with his wives in different compounds. The statement of Akulpoka in the excerpt, where she referred to 'we' (the wives of brothers) in a household also provides some historical information on household arrangement. Several households in the community, not included in the data generation, were organised in a similar manner.

The nuclear family system, on the other hand, was not common in this community with only two of the fifteen households included in this study matching this description. This family system had two levels similar to the extended family system. One of the families in this category lived as a single

compound household and the other lived in a multi-compound household. In the field notes on Anaba's House, the living arrangements of the son of the head of household and his family constituted those found within the household of a nuclear family. The field note on Akule's house illustrates a nuclear family that resides as a household.

Household eight, Akule's house is made of a man, his wife, and three children. FN, Akule's H

Notwithstanding the fact that the latter had the appearance of a nuclear family, their members associated themselves with the extended family system. Members of the nuclear families suggested that even though they lived alone, they were part of the family of the neighbouring compounds and households. Therefore, the extended family was the predominant system.

6.4. Household childcare arrangements

Generally, childcare was observed to be a shared responsibility in the community. Due to the community's family system, every member of the community was considered a relation. Consequently, it was observed that households or community members cared for their neighbours' children and fed them when the children's parents were not at home. This is evident from the field note excerpt:

'...Isma's mother told me she was going with her baby and so she would eat wherever they went and that the sister Rabia would eat at any compound in the household. However, Nima's mother told me that the three wives of her husband's father were around and she had asked Nima to check in their compound if she was hungry. I asked her what Nima would do if these people did not cook and she laughed and asked me if people die of hunger. She said to me, "she would only suffer a bit" so when she came back in the evening, she would give her food if Nima did not eat anything in the afternoon. The two women said goodbye to me and left. I went into the compound of one of their father in law's wives where the children were usually found playing with their grandfather's 7-year-old son. In there, I met the children with their grandfather who was always at home because he had a fractured leg. The woman in this compound too was in a hurry. It turned out that she was also preparing for the market, so she also left me and the children with their grandfather in the yard... two of the children were asleep and one was standing beside her grandfather and requesting food as she was hungry. According to the children's grandfather, he asked them if their mothers had not kept food somewhere and they responded in the negative. He also told me that he thought if his other wives were at home they would find food for the children but there was no one at home' **FN, Anaba's HCp1&2**

In the excerpt, Anaba's HCp1&2, two children were left behind by their mothers with the assumption that these children would be fed by other members of the family. However, the other individuals who were assumed to be at home, and might provide food for the children had also left home. Thus, the children did not eat until their mothers returned home later that evening. Whilst in this excerpt the children were expected to be taken care of and fed within their own household, other children might be fed outside their own household. The field notes from Akongo's household demonstrate that children might eat in other community members' households;

He told his mother that he had eaten rice in that house. Then his mother turned to me (whilst smiling) and said 'that was why he did not come home'. She asked him who gave him the food He said that he did not know but that they went to another household and he and the other children were given rice to eat. FN, Akongo's household, cp1M

As seen in this excerpt, the mother of the child did not appear worried when the child said he had eaten elsewhere. In fact, from her expression, she seemed pleased that the child had eaten elsewhere in the community. The woman in this excerpt had indicated that she did not have enough food to feed her children regularly. Although other members of the community might feed a child who is not their own, biological parents of children were reported to be primarily responsible for providing children's daily needs, such as food, and when the biological parents were not around, the immediate relatives of the children's parents were the next people responsible for feeding children. For example;

'the father of the children; he can give money for us to buy food items. When the children are sick he gives me money to take them to the hospital'. **Asam's H, Algifa, M**

In the feeding of the child, what I do is to buy ingredients for cooking for the child... that should be the case; you know our women do not work. Moreover, we have brought them to our homes. It is, therefore, our duty to take care of them. If there is no money and the woman can help, it is ok. However, it is the man's duty to do that **Aduko's H Cp3Abila, F**

Abila indicated that his wife might help if she had money when he was not able to provide fully for the family. However, the data showed that the roles of parents in childcare were generally determined by gender. Fathers were reported to be mainly responsible for generating income aimed at providing food and for the other needs of the children and making complex decisions about food choices. Mothers, on the other hand, were reported to be responsible for cooking and feeding the children. The fathers' role appeared to be connected with the system of heritage and custody of children. Nonetheless, the data also showed that this trend was changing in line with the changing role of women.

6.5. **Child ownership and the provision of children's food**

In keeping with the patrilineal tradition of Northern Ghana, men legitimately own children (Salm and Falola, 2002; Quansah, 1991). This traditional custody of children carries an obligation for men to be responsible for meeting the needs of their children (Salm and Falola, 2002). This may explain why the biological fathers of children have been reported to be the prime providers of children's food in this study. It was also learned and confirmed that the primary obligation was linked with the title of parenthood of the child. It was found that women could not lay claim to children they bore. For instance, when a woman was asked why she could not take an action independently, this was her response;

'Eh, madam, do I own children, if I do not confirm from him and something happens, what will I do?' **Abaa's H; Samara, M**

The statements of Aganah and Tampugre below illustrate the convention that men were primarily responsible for providing for children's upkeep:

Truly, when it comes to food matters, we (men) do all the work. Right from our ancestors, there is no food that we do not bring for the family. What is our duty as fathers? Fatherhood is providing for your offspring. **Awumba's H Aganah F**

'We males have been responsible of farming and taking care of the animals so that we can feed the children we bring forth. As a man, if your father buys a cow, you have to guard, feed it, and give it food and even the fowls. You are to ensure that no animals enter your father's farm to eat

the plants. You do this until you grow and start to farm and your boys take over from you and do the same". **Tampugre's H Tampugre, GF**

"We marry the women and bring them to our homes and when a child comes in-between us, is it not good that we provide food for the upkeep of that child? This is why we tend to provide for them...that should be the case **Aduko's H Abila, F**

It was mainly men who described the role of fathers as the prime providers of food. However, reports from some women appeared to substantiate this. For instance, in my discussion with Akele, a mother, on why she had not supplemented her child's breastfeeding with other foods, this was her response:

"hmmm...the money is not there, my husband always provide and if the ingredients get finish when he does not have money I will be there like that" **Aduko's H Akele, M**

Although biological fathers are responsible for children's nutritional needs, uncles inherit children and take over the primary responsibility in the absence of their biological fathers.

You can find out from my wives. That one there is my younger brother's wife. There is no occasion when she comes to say her husband has not sent money and I do not give when I have. So if I give to my brother's wife, is it, my own wife and children, I will not give? **Nugeba's household; Anuga, F**

In the excerpt above, Anuga was reporting on his responsibility towards his biological children and the wife and child of his sibling who was not in the community during the fieldwork. However, some of the reports, especially those emanating from women, appeared to suggest that some men, including their husbands, did not always fulfil their responsibilities towards providing for their children:

Some men are just irresponsible but there are some men when their children do not eat, they become very worried. It is the nature of some men not to be bothered at all about their children's welfare; we all know what happens in this community. **Tampugre's household; Adoleba, M**

Madam, there is something, I want to tell you. I hope my husband did not lie to you. He hid the soap he bought and when I requested it to wash some of the rugs that M soiled with faecal matter he refused. You see what I told you. He does not help in anyway. He took the money I use to do my trading and went to spend it, so on the market day, when you came and asked me whether I was sick, I had cried, because when I went to find my money and go to market, I found out it was not there. In addition, his mum said she saw that he kept long in our room and came out sweating. That is his behaviour. He uses the money for women. He wants to take back his old girlfriend but his mother forbids him. **Aduko's household; Akele**

Whilst, some participants suggested that some men might not be responsible in their duty, some mothers seemed to justify why some men failed to provide for their children. Lamisi and Abaama suggested that an underlying relationship problem between a man and his wife might instigate a man's decision to neglect the provision of food for her child;

This village people just like to say things that do not concern them. You see, when a man does not provide you cannot blame the man. Imagine how difficult it is in this community and if a woman

constantly waste food and makes demands always can the man cope with that. I know a man who sacked his wife because she was too troublesome. **Yuureinga's household; Lamisi M**

The person, who has given birth to the child, will not find food for the child? Why did the person give birth to the child then? If you have a child and money, you will not take care of the child Uhm! Ok! As I said that I could not say because it is not applicable to me ... Have money and things and leave your children to suffer? As for me, I will not do such a thing, so I do not want to think that for some people. I cannot have my child in need of food, go, and buy clothing and come, and be wearing to show off, for what kind of name is that. If you have money, you have to take care for the child. For someone who does not have and cannot take care of a child well, it is different. Will one have and simply refuse to feed your child, maybe something else is wrong...

Nugeba's H CP1&2, Abaama, GM

Participants also appeared to suggest that when a woman was not appropriately married to their child's fathers, that child might not be provided for by its biological father and his relatives. This was because he has no legitimate right over the child since he has not performed the marriage rites with the mother;

... You know, Jay is Amage's brother. I gave birth to her alone. Therefore, we allowed her to have this child so that she can have her own sibling. If we marry her off, she will be alone. Therefore, it is she and I. We farm and as you can see, she sells these things (oranges) during the dry season and she buys food from it. The man wanted to be coming here, but I do not like. He may want to perform the rites and claim the child. **Aduko's H Amagama, GM**

Amagama's statement does not clearly explain the practice that children's biological fathers' might not be responsible for them when they are not married according to custom. However, it appeared to be in line with the account that in rural northern Ghana when a child was born out of the customary marriage norm, that child belonged to the child's mother and her relatives (Quansah, 1991). Four of the children included in this study appeared to live in context of maternal custody due to improper marriage arrangement. Though participants in this category did not explicitly state their cases, it revealed in the circumstances of their responses on the care of their children, which showed that the maternal side of the child provided for their feeding needs.

The food provision and childcare narratives reveal the intricate interplay of social norms in this community. It appears the interventions of Lamisi and Abaama are attempts to protect the image of the community's men. In later sections, this will be discussed together with the significance of identity. Not only were men required to provide for the feeding and physical needs of children, but the findings suggested that senior men also held the decision-making power in households and so may decide what could be fed to children. The next section discusses household leadership and decision making about children's food.

6.6. Household leadership and decision making in relation to children's food

Household leadership is shaped by the family system. Leadership was found to be hierarchical and influenced decision-making in households. This included decisions on the food chosen for children and how children were fed. Within the hierarchical Ghanaian society, gender and age are among the main determinants of headship (Salm and Falola, 2002). During the fieldwork, it was confirmed that individuals in headship positions had high levels of power in relation to decision making. This

decision making appeared not only physical but also spiritual in nature. It was reported that the heads of households were the oldest males, as seen in this excerpt:

*... Nima's father, whom I later identified, peered in and told the women that since baba was around to listen, he was going out. When one of the women told him 'but you are the men and need to know', he said, 'if the house owner is here, what else will I say differently? Whatever he says will be the final, so carry on'. Nima's mother told me that, the head of the house had a fractured leg and would be assisted to come out of his room. I asked if we could go closer to him instead, but I was told that he was coming out into the yard anyway, so it was better we waited. The Household head (HHH) was helped out and placed on a locally made reclining chair by two of his teenage sons. We exchanged greetings and I explained the project to them and gave them copies of the information sheets and the consent forms. **FN, Anaba's house***

Besides illustrating who leads the household in this community, the excerpt also showed that Anaba, the oldest male figure also held the final decision making role. Similarly, it was the most elderly males in other households who were heads. For instance, during the community entry processes, when women were invited to participate in the study, most of them indicated the need to inform their household members, especially their husbands and fathers in-law, as evidenced by this excerpt:

*Anyway, I am glad you have been able to meet my husband (pointing at her brother in-law who is also the head of the household). He told me that when you come we should pay attention to you and provide you answer to your questions on children feeding. I was not very comfortable initially because you had not met him. You see if I started talking with you and he comes to see you, he could have said, I have invited strangers into the house without his knowledge and he could blame me if anything happened. **Abaa's Household, cp1 Azumah, M,***

Even though no specific age was mentioned as a requirement for household headship, it appeared the person considered oldest was automatically regarded as the head of a household. For instance, in the case of Anaba's household, the head was a grandfather, whilst in Abaa's household, the head was a father, an uncle and a grandfather. These men's ages in relation to the age of other men in the household made them the head of their households. Similarly, senior male figures were heads of compound and exercised the main decision making powers at that level. For example, in the field note excerpt (FN, Anaba's house), a woman addressed Nima's father as "*you are the men and need to know*". The woman insisted that he join in the discussion. Her insistence was perhaps related to the fact that men are traditionally the final decision makers in households in rural Ghana (Salm and Falola, 2002). Therefore the woman needed a man to be present before the decision on the household's participation in the study could be finalised.

It also appeared that in households where there were no older men, younger men and even boys were the figureheads. However, in this instance, final decision making in the household did not depend on this figurehead. Other members of the household might consult each other on the issue, under the guidance of older women. These older women played the everyday leadership role until the young males were old enough to make autonomous decisions. Elderly women were seen to play this decision making role on several occasions during the information gathering process. In some households, elderly women were identified as the persons who would give approval for the

study. For instance, in Akongo's household, there was no man when the fieldwork began and an elderly woman was introduced as the next person to contact:

***MK:** So Apoka, who is the head of this house, since none of the men are here?*

Apoka:** It is my mother in law. The old woman you greeted. The only man in this house is my son, but he is gone to school so we can talk with my mother in-law. Even if he were there, he would just be called as tradition demands to show that a man was present when we had the discussion. **FN, Akongo's Household

Similar to the case of Akongo's household, other households also showed the same form of leadership arrangement:

*Mma, when I came to this house you were the first person I met and Asi redirected me to discuss my work with you as the most elderly person in the house, and you agreed that I could carry on with the project. I have reached a stage where I wonder if you could chat with me about your grandchild's feeding as I indicated earlier. **FN, Ayeta's household***

'Mother, have you not heard what the woman has said? So that is what she will be doing in this house for some time' Then the elderly woman responded, *'ehn, we have all heard and there is no indication that her work will disturb anybody here so the conversation is back to you and your wives'* **FN, Nugeba's household**

These extracts from the field notes and interviews demonstrate the different scenarios under which older women acted as the household heads and main decision-makers in households. However elderly women also played other important roles of significance to child feeding, such as supervising and monitoring younger women.

Even though elderly men appeared to hold households headships, it seemed that besides permitting actions and initiating consultations with diviners, their leadership role was more symbolic than direct. It also appeared that the basis of the household heads' leadership role was more spiritual than physical. Before initiating child feeding, a household head or their male delegate might consult diviners on issues pertaining to the feeding of the child; and this might be the basis of the spiritual decision making role. Consider this excerpt;

*Yes, is it because we are not doing everything strictly? You see when a child is born or even when a woman is in labour the head of the house will visit the diviner to find out what the child's god says about the child. Diviners may then tell you types of herbs to give the newborn and the frequency of giving the herbs. They can even tell if the child taboos some food. So as this women roam around like this, and give the children different food all the time, that is not good. That is when a child may eat food they taboo: **Akongo's H, Cp1Nsorbila, F***

Nsorbilla, a father, appeared, to sum up what ought to be the case in child feeding decisions in the community. The leadership system in this community appeared to have a significant impact on child feeding.

6.7. 'Under the trees & around the cooking fire'

In section 6.3, the reports demonstrated that living arrangement the layout of compounds and kitchen areas facilitated social interactions during food preparation. This section explores further the character of social interactions that occurred among household and community members during the preparation of food and child feeding.

6.7.1 Household child food preparation

Food preparation in this context refers to the processing and preparation of large and small quantities of foodstuffs for preservation or for immediate use in cooking. The findings show that children were mostly fed with home-prepared food except on a few occasions when food such as sweet porridge, kenkey, and TZ were bought. Sweet porridge, corn dough prepared into a dripping consistency usually eaten with sugar, was mostly bought from vendors, whereas, TZ, a millet, corn or guinea corn flour thick mushy textured food, was mostly prepared at home. The methods of preparation observed in this study included boiling, stirring, brewing, milling, smoking, fermenting, drying and steaming. Some of the processes were used to prepare ingredients for preservation. Others were used in the actual cooking of food to an edible state.

Foods fed to children in this community were unrefined. Most foods could be described as from farm to pot. However, basic processing of the foodstuffs after harvesting and before final cooking was observed. The data showed that whereas the cooking process altered the texture of the food, the preparation of foodstuffs for preservation did not significantly alter the physical state of the food. The preparations simply removed inedible parts of the food and transformed them into a state in which they could be cooked and eaten later. The methods of foodstuff preparation observed included de-shelling groundnuts, pounding ingredients such as dawadawa, groundnut, and dried fish fingerlings, picking and winnowing dust and other waste material from grains and dried vegetables, milling flour, or groundnuts in commercial mills. Figure 6.1 shows a woman processing groundnuts (peanut paste). Processing of large quantities of material such as de-shelling of groundnuts and corn was for storage and future household use, or to sell and generate part of the households' income. The preparation of small quantities of ingredients may be for immediate use for cooking a day's meal, for example, the pounding of dawadawa and fish powder in Figure 6.2.

Most members of the household including children, grandmothers, fathers, and aunts might join in processing foodstuffs. It was also observed that members of other households might join others in their homes, and help with the processing of foodstuff. This usually occurred when household members sat together under trees outside the house during the day when the sun was hot, as indicated earlier. The field notes from Asam's household describe a typical scene:

When I got to this house, four other women, a few children and two men, one who sat on a bicycle whilst the other stood, surrounded Aduko's. There was a large basin with shelled groundnuts and a basin with de-shelled groundnuts. All the adults were de-shelling the groundnuts whilst the children played around, with the exception of two children around 10 and 13 years who were also taking part in de-shelling the groundnuts. I was invited to eat some of the groundnuts after we exchanged greetings. I was scheduled for observation and an interview with Aduko, who is the grandmother of Rauf and Shani, in this house. I joined them in de-shelling the groundnuts. In the process, I was introduced to some of the people whom I was told were from two nearby houses... I later asked Aduko what they would use that quantity of groundnuts for. She informed me that it was for her and her daughter, the children's mother, and she was processing them so that they would select the broken ones for soup and then sell the others to buy her daughter the local robes that she was using to learn how to weave the local cloth. FN, Asam's H

Figure 6.1: Processing roasted peanuts on local mill



Figure 6.2: Pounding of dawadawa and fish powder



In the field notes from Asam's household, the only person who directly owned these groundnuts was Aduko, the grandmother of the children (Rauf and Shani). The other individuals were only helping to de-shell the groundnuts whilst avoiding the heat from the sun and enjoying each other's company as they chatted and shared ideas on a wide range of issues including food.

In the case of the smaller quantities of ingredients, most were usually prepared during the cooking, earlier in the day or even days before. Take for instance the field note excerpt from Nugeba's house;

*...Before everyone got under the tree, the grandmother of the children came around with two calabashes, one with par-boiled and dried millet, and an empty bowl. She sat on the mat away from us and started to winnow the millet. Evo's mother explained that the millet would be milled on the stone mill and used to prepare the porridge. She also told me that she was going to prepare the meal and I was invited to watch if I was interested in how the food was cooked... She put the millet on the stone and using another handy rectangular stone ground all the millet gradually into crumbs. She then made a fire and put a pot of water on it. She brought out pepper, Amani, dawadawa and salt from her compound. She poured all of the ingredients into a mortar and pounded it. She then poured the ingredients into the water on the fire and brought it to the boil. She then poured all the millet granules into it and allowed the mixture to boil for 15 minutes before taking it off the fire... **Nugeba's household***

In this excerpt, most of the ingredients (food items used for cooking) were prepared during the cooking time. Similar to the processing of raw materials observed in Asam's household, the ingredients were prepared in the midst of other members of the household and as usual under a tree where people rested and children played. The excerpt also shows that as in the processing of raw materials, more than one person may be involved. The main activities that were observed during the cooking were setting the fire and mixing the ingredients with the right cooking method, stirring the food mixture and observing the food until it reached the desired texture.

In addition to the cooking process described above, there were additional procedures involved in the cooking of some foods. For instance, in the cooking of Tuo Zafi (TZ), the specific processes employed included fermenting small amounts of flour with water, diluting and boiling the fermented water, making porridge and then stirring the TZ to form a thick hard mushy textured food. The fermented water was said to give the TZ its typical sour taste, keep it soft even when it cooled and to prevent the TZ from decaying quickly. The other processes such as boiling and stirring were, however, to cook the TZ to the right texture and viscosity. The length of time taken to cook TZ depended on the quantity of the TZ and the intensity of the fire used in preparing it. A small quantity of TZ with intense fire would usually be cooked for 15 minutes. However, TZ was generally cooked for between 20 and 40 minutes. Figure 6.3 is a woman preparing guinea corn TZ.

Figure 6.3: preparing guinea corn TZ



Soups, on the other hand, were cooked for between 30 minutes and 1hour 30 minutes. Soup varieties included kenaf leaves and okra soup, groundnut (peanut) soup and savoury porridge among others. Table 8.1 is a list of the foods including vegetables that were cooked for children in the community during the fieldwork. Generally, the soups and most of the foods that children ate were cooked using heat. Foods that were not prepared with heat included groundnut (peanut) snacks and raw millet flour meals.

The methods employed for preparing food and the length of time food was cooked on heat within the study community suggests that the nutrient content of some of the food eventually fed to children could be adversely affected. All foods were cooked for a similar length of time, meaning that foods that need less heat could be overcooked and nutrients lost. Additionally, most food, for example vegetables were cooked in large volumes of water some of which was drained away. This suggests that nutrients could leach into the water. As the observation revealed that children generally ate home grown, unrefined and unprocessed food, one could argue that the child's diets may be relatively nutritious. The study was not designed to analyse the nutrient content before and after the preparation of food, and cannot be conclusive about the quality of diets. Nonetheless, it is likely that the nutrient content of children's diets' is adversely affected by the preparation.

Another insight gained from studying the preparation of food in the community was that the scenes of food preparation and interactions might potentially have influenced the choice of food families gave to their children. The next section explores the nature of the interactions that occurred during the preparation of children's food and child feeding.

6.7.2 Social scenes and interactions

It was observed that interactions among members of the community and the venues for these interactions provided opportunities for influencing child feeding. The physical location of the kitchen or cooking area in the compound and the interactions that occurred during food and cooking processes showed that the cooking and child feeding in households was a social process. Food preparation mainly involved the majority of adult female members of households working together on an aspect of the cooking. This process may be on-going throughout the day, sharing companionship and discussions. There were usually many people in most compounds and it was not obvious which the primary or secondary activity was:

...There were other people in the compound, some of whom I was told later were friends of Sefi's aunts and uncles. The people in the compound were all chatting, I observed there were different issues being discussed, and most of the discussions did not seem to have a relationship with the cooking process except the discussion between Sefi's aunts and her grandmother. The latter's conversations centred on the quantities of the ingredients that had to be put into the food being cooked. FN, Aduko's HCp1

As seen in the field note, FN Aduko's HCp1, during these times of food preparation and consumption, social interactions occurred. These interactions included discussing topical community issues, problems and sharing friendship. Some of the discussions were directly related to the cooking process or feeding. For instance, in Aduko's household, three foods related issues were discussed. Most people were watching television. Sefi's grandmother and aunt discussed their cooking and Sefi's feeding was also discussed. On one occasion, Sefi did not eat her food in the manner, she usually did. Her grandmother complained and Jay's mother, Amage warned Sefi to eat faster or the food would be taken away and fed to Jay:

I realised that Sefi was eating very slowly, so, I asked her grandmother, who I sat by, if that was Sefi's normal way of eating. Sefi's grandmother responded that Sefi was only pretending as she usually ate faster than she was doing. When I returned, she was still eating the food, and it seemed not to have reduced as much as I would have expected it to have done. I asked again if Sefi usually ate so slowly and her grandmother and senior aunt simultaneously told me that perhaps she was not too hungry, because she had eaten leftovers from her lunch not long before the current meal... By this time Jay's mother from compound 2, who was sitting by Sefi, had started to feed Jay with Sefi's food. Whilst taking some of the food, she told Sefi that if she did not want the food and did not eat quickly, she would feed all the food to Jay and warned Sefi to keep on eating her food quickly (this she said whilst smiling at Sefi). FN, Aduko household Cp1

Even though Sefi's grandmother and aunt had indicated that Sefi might be full, they did not immediately get up to take the food away. Sefi appeared physically tense and looked around the compound as her aunt's friends chatted away and occasionally laughed loudly. It, therefore, appeared that Sefi was distracted. Additionally, Amage's warning might have influenced her eating.

Another instance, which suggests that the concurrent social interaction and food related activities might influence child feeding and food choices, is shown in an interview with Samara, a seventeen year old mother with a seven month old daughter. Samara appeared to be very interested in following all the advice she had received from health professionals about child feeding. However, she met a lot of resistance. This was partly facilitated by the social interactions. Samara mentioned that her mother in-law and her neighbours advised her to feed her child in particular ways:

*...My mother in-law and the other women in our neighbourhoods, you know when you are feeding this child and all these women are around, they will start talking and asking you who taught you to feed your child like that... **Samara, M***

Samara's response suggested that there might always be people around, who commented when she fed her child. Samara also reported that she found it difficult to balance how she wanted to feed her child and the conflicting dietary advice she received because she would be judged if she did not take the advice from her mother in-law and other women in the community. Consider her response below:

MK: *What do you think will happen if you follow your own judgment and ignore what the people say? What are your fears?*

Samara: *Uhm, (in a low voice) you see, they may say, I am rude. You know they are adults. They have had kids before me. If I go contrary to their advice, and there are negative outcomes, they will say, I have been disrespectful and know it all, so I should manage my problems myself (in a low voice). **Samara, M***

At the time Samara reported this, Faadi's mother, Azumah of compound two of this household was a short distance away, and it appeared Samara did not want Faadi's mother to hear what she was telling me, so she lowered her voice and looked in the direction of Faadi's mother. This nonverbal cue from Samara seemed to confirm that the nature of social interactions enabled members of the community to influence each other's actions, and knowing the consequences of not complying with acceptable community norms, individuals were compelled to comply. In this way fitting in with the community appears to take precedence over child feeding. As indicated in the methods people engaged in interrupted conversations and expressed opinions freely.

6.8. Summary

In this chapter, the social environment within which children live and eat has been presented. The findings describe family systems and household structures and the enculturation of child feeding processes though routine, daily, social interactions. The findings also show how every day imponderabilia (daily routine life activities) such as preparation of food, childcare arrangements in households, leadership, and control in households, households' responsibility towards children and decision making in households (as described by (Malinowski, 1922), could tacitly impinge upon the feeding of children.

CHAPTER SEVEN
FOOD INSECURITY COMPLEXITIES & MANAGEMENT
STRATEGIES

Chapter 7: Food insecurity complexities & management strategies

7.1. Overview

The scarcity of food and the strategies for dealing with it had a direct influence on child feeding. Managing gaps between meals was identified as a strategy to save food for future meals. Planned rationing to ensure that available food lasted resulted in these meal gaps. In this chapter, the nature of food insecurity, income generation, meal gaps and other strategies for managing food insecurity are presented. A sketch of food insecurity in one of the households provides an insight into the nature of food insecurity observed in the study community.

7.2. An ethnographic sketch of food insecurity in Akongo's household

Akongo's house had two major compounds with four children under the age of five years. Compound one was occupied by three of the four children and their two mothers. This narrative is about the family of Timmy and Cusi, two of the children in this compound who are biological siblings. Timmy and Cusi are the anonymised names of the children aged four years and eleven months respectively. Their parents' anonymised names are Apoka and Adukobila. Timmy and Cusi lived with their parents, their three siblings and their grandmother in one part of a double compound in a household. Timmy and Cusi's family owned two rooms on one side of the compound. According to Apoka, she and her husband, with three of their children slept in one room, whilst their other two children slept with their grandmother in the other room.

The key informant, Apoka, in this narrative, is the mother of the children. Apoka and her husband, Adukobila, fed their children from the products of the subsistence, peasant farming they engaged in during the farming season. Petty trading of food items by Apoka, and farm labouring and construction work by Adukobila provided them with some monetary income. When the fieldwork started, Adukobila had travelled to a village in another region to work as a farm labourer. Adukobila annual journeys were to work on commercial farmlands to generate income to supplement the family's household income and food resources. Apoka explained that their family had relatively little farmland but they cultivated grains and cereals such as millet, guinea corn, groundnuts and vegetables such as kenaf leaves, okro and peppers during the farming season. The farming season is the four month period of the rainy season. According to Apoka, a member of the community promised to lend her some farmland. However, because Apoka's family neither had money to hire a tractor to plough the land nor labour to work on the farm, she could not accept the land. Apoka's two older children, aged fifteen and thirteen years, helped her most of the time on the farm and her husband occasionally when they were not quarrelling.

Apoka indicated that their farm produce usually lasted for three months after the harvest and from then on the family depended mainly on her petty trading and occasional income from her husband's farm labour and construction work. Apoka indicated that each year was similar for the family in terms of food shortage. However, that particular season (which coincided with the fieldwork period) had been worse for them. She explained that the yield was not as good as other years and her husband had not contributed any income though they had sold some of their farm produce to enable him to travel to find farm labour work. According to Apoka, her husband encouraged her to sell some of their groundnuts (peanuts), which yielded more than the other crops they farmed and to give him the proceeds to enable him travel to do paid farm labour and generate more income. She claimed that the remainder of the foodstuff did not last them long, nor did her husband return with any money after staying away in the other town for four months. As a result, they were dependant on her petty trading, which had also been erratic.

Apoka explained that she traded in items such as salt, dry pepper, dawadawa, dry fish fingerlings, stock cubes and cola nuts. (All are food items except cola nuts which are a recreational stimulant used by adults.). Apoka sold the items within the community by hawking them to households or by selling to customers who visited her home to purchase them. Apoka indicated that the media of exchange for her trading items were money and barter with food items such as grains and cereals. Apoka collects the items from 'wholesaler' (Apoka's suppliers or retailers who sold the produce in relatively large quantities; not conventional wholesalers) in a nearby village market, which occurs every third day. She then sold the items obtained from these suppliers for a commission. Apoka explained that for every five items she collected, she received one item as commission. Consequently, her monetary profit depended on how many items, she receives cash for. However, when she barter for other foodstuffs, she sold the foodstuffs and added the money paid to her in cash in order to pay her suppliers. Sometimes she used the foodstuffs she accepts from the barter for food for the family. Apoka calculated that she usually made about three cedi (52 pence) from the bartered food and two cedi (35 pence) from the sale of items. Her report suggests that Apoka made a profit of five cedi (85 pence) every three days. However, Apoka also explained that she was not always able to sell the whole quantity of her stock within the three days and her suppliers allowed a maximum of 2 markets or six days for her to return the proceeds from the items she received. This meant Apoka sometimes made only eighty-five (85) pence in six days. Apoka explained that the 85 pence was what she, her husband, their five children and her mother-in-law, and sometimes Fazy, her husband's niece and her son and other extended family members relied on for sustenance. Other extended family members could include her husband's aunt and her brothers-in-law children who may be asked to eat in her compound if their parents were not home.

Apoka stated that she was always in debt for various reasons. On my first day of observation, Apoka reported that she could not go to the village market because she had not been paid by all the people who had bought items from her. Moreover, she had spent all the money she had received and could not pay her supplier. She showed me 50 pesewas (45 pence), and some food items which she had gathered from people who had bought things from her. She added that she would not be able to make up for all the suppliers money she sold the foodstuffs to add to the money. She apologised that she could not cook for me to observe her cooking and feeding her two children, Timmy and Cusi.

At this point, her thirteen years old daughter who had joined us interrupted and informed her that in her absence she had cooked some food. Apoka looked at her daughter suspiciously and asked her several questions in quick succession: **"What did you cook? Where did you get it? There is not even salt in this house, so what did you put in it?"** Apoka's daughter answered innocently, **"We cooked the millet and the rice you brought the other day. There is leftover for you and Cusi" Everybody has eaten**". Figure 7.1 is the rice and millet meal. Before Apoka's daughter could say the last word, Apoka exclaimed and said. **'Oh, my God, this girl has killed me! Madam, those are the foods stuffs, I received from some of the people who bought my items. This morning when I went out into the community, my plan was to collect the debts and add to the food she cooked, sell and pay my supplier. As it is now, I am not sure, how I going to make up my suppliers money'**". As Apoka talked to me, I observed beads of sweat forming on her forehead. I encouraged her to relax, excused myself and left to return later. Following up on how Apoka managed this challenge, she indicated that she sometimes helped one of the neighbours, a woman who prepared malt (guinea corn sprouts for local alcoholic beverage). In times of crisis, that woman bailed her out. She said she, therefore, borrowed money from that woman, paid off the supplier and bought some more items. Thus, anytime she made a profit, she paid the woman who loaned her the money, in instalments. Nevertheless, because of the small profit, she made through trading, she was behind in paying her bailer and could not cook regularly for her children because she was careful not to over-spend the money again.

Figure 7.1: Rice and millet meal



7.3. The nature, ironies, and complexities of food insecurity

The feeding of Timmy and Cusi was irregular throughout the fieldwork. There were occasions when Apoka cooked whilst at other times she did not cook for the children. The nature of food insecurity in Apoka's family was not unusual in the community. Most of the families showed similar characteristics of food insecurity. The rest of the chapter presents findings on the overall character of the food insecurity and related issues in the study community. Food insecurity exists when there is inconsistent availability of sufficient food, and individuals' ability to afford the food and use for nutritional purposes (FAO, 2015). These factors were significant influence on child feeding in the community. A cycle of food shortage and irregular earning activities affected regular access to food.

7.4. Sources of food

The main source of food in this community was from peasant farming. Participants reported that their food was used up a few months after the harvest. Akule, the father of one of the children took me into their food store room and showed me how empty the room was even though the farming season completed 3 months earlier. As Akule showed me the room, he said:

"My sister you see what we are telling you is real; it is not as if we are exaggerating. It is just difficult in this village. No one wants to starve his or her family". He got up and requested me to follow him. I followed him into the compound and he opened a door and said to me, "Look inside here, this is where I usually put food after harvesting. Can you see a grain of millet here? That is

how serious it is. So I am only left with the animals roaming around, but can you sell all the animals in your house, no!” Akule’s H, Adongo F

As shown in Figure 8.2 and Figure 7.2, there were always food stuffs for sale in the village market. However, as in Apoka’s family situation and Akule’s lamentation, most of the households were unable to buy food regularly after they had exhausted their own farm produce. Most members of the community depended on other unreliable sources of income such as petty trading and the sale of animals and other foodstuff to generate money to buy food. This is what another father said about the common challenge of food insecurity:

As for us the poverty, it is our main problem. How we want to be, we are not... If you have some little trade in addition to the farming, it is good. However, as it is, we are not able to do that. So farming on our small pieces of land is just not adequate. When our foodstuffs finish, that is it. So that is how it is in the community Nugeba’s H, Anuga F

Figure 7.2: Birds in the nearest market



It appeared that some households did not know when to expect their next meal. Some participants reported that they were waiting for the next farming season, which would be between six to eight months' time. The nutrient intake of children in these families could be compromised during these lean periods. Nonetheless, when participants were asked how they handled times of absolute food shortage, the response of one participant exemplifies the community’s reaction to food insecurity:

We have gone through this all the time, but our children never die. Can’t you see them at various stages of life? It is not only food that save people, God is our provider” Asore’s, H, Asore F

The data showed that several interacting factors such as poverty, limited household income, dependency ratios, family sizes, attitudes of food providers, seasons and rainfall patterns, and the community’s own food culture contributed to poor farm yields and inconsistent trading and income for obtaining food.

7.5. Poverty

Whilst definitions of poverty are often relative, in most circumstances, the inability to meet basic needs with one's income is considered poverty (Hagenaars and De Vos, 1988). Lack of social and economic infrastructure is also indicative of poverty. However, the study community had some socioeconomic facilities such as sources of water, schools, health facilities in the form of CHPS compounds and markets where a variety of goods were sold. Nonetheless, participants' responses and my observations showed that half of the households included in the study did not have essentials to meet their basic needs like food. Food insecurity and thus poor child food choices and feeding patterns emerged as a characteristic of poverty. Consider the state of resource flow in Apoka's family in the ethnographic sketch (section 7.2, pages 125-126). Yinpoka's report and that of Akule and Apoka's family demonstrate the impact of poverty in the community and corroborates:

If there is poverty and you have nothing to sell, and this is the dry season, you cannot farm and you may not even get a place in the market to sweep to earn money. So where will you go and get money? Look at me, an old lady, if I come to wash your bowls will you appreciate my work and pay me. These are the things that make us very poor. **Yuuringa's H, Yinpok, GM**

The level of poverty is also reflected in the living arrangements. Even though it appears members of the community generally sleep in groups, it also seems households did not have resources to build new rooms or repair their old rooms:

I was also told that all members of the household slept in one room because the other room, which doubled as a store room during the harvest season and a bed room for the children, was leaking. They had tried for three years to repair it but their finances never reached the stage where they could. Adongo the father of the child included in the study told me that he had abandoned his plans year after year because crop yields were getting worse every year and he could not travel to work on the big farms in other towns to make extra money. **FN, Akule's household**

Similarly, basic health care needs were not being met. In Ghana, children or dependents below eighteen years of age are automatically covered under the health insurance scheme, if their parents or guardians were registered with the scheme and renew it yearly. This insurance scheme allows families to access diagnostic and treatment services, any time children were sick. The initial registration or yearly renewal of the health insurance for the participants' in the health insurance scheme was the Ghana cedis equivalent of 2 pounds (Jehu-Appiah et al., 2011). However, it was discovered that most families in the study were not insured. Meanwhile, there is no alternative way to fund their health care when they became ill except by paying cash, which was also not available to households. The nature and level of poverty varied among the households that were observed to be poor. Households' incomes were found to be important in demonstrating the poverty level of households, thus the subsequent section discusses household income.

7.6. Sources of Household income

As indicated earlier, the main source of households' income was peasant farming and petty trading and some construction or farm labourer wages. A few households' also depended on remittances

from members of their families who travelled to big cities to work. Whereas some households had more than one of these sources of income and others had all the sources of income, some households were dependant solely on peasant farming.

7.6.1 Peasant farming

Peasant farming was the main source of food and produce to sell for cash. Peasant farming appeared to form more than half of most households' income. However, participants reported that there were challenges that affected the scale of farming and the size of the yield. Inadequate farm land and labour, poor rainfall pattern were mentioned as the most causes of poor farming outcome.

7.1.6.1.Farm Land

Insufficient farmland to cultivate crops on a large scale was the reason for the small-scale farming in the community. Farmland is mainly inherited by fathers and cultivated to feed families. Some participants reported that they did not inherit sufficient farmland to enable them to produce enough food for their families and to sell to generate income to meet other family needs. Income to hire farm labour or to feed the family sufficiently well to enable them farm compounded the issue of low farm productivity. Returning to the scenario of Apoka's family, even though they could access extra land to farm on, Apoka's family could not afford the labour needed to cultivate the extra land. Other participants also reported similar factors impacting on their farming. The quotation from Nugeba's household cited under sources of food (section 7.4pg), and Abena's statement illustrate the community's inability to farm adequately:

*This year we did not farm enough. My husband (in a low tone) was just going round farming for people and using the wage to drown in alcohol and left me and the children. It was only me and the small girl because my son too went to find work in Accra. So when I and my little girl finished doing the small plot in front of house there, I went round working for people. You see that black woman who just passed by, we have to do communal farming, and that is what we did to finish the little plot we have. When we had to farm the weeds again, I had to borrow money from that gentleman whom you saw the other day and get people to help remove the weeds and that is how we finished farming. **Bakule's household, Abena, M***

The types of crops cultivated and the processing and the storage of crops also appeared to contribute to food insecurity and the inadequate child feeding.

7.2.6.1.Types of crops cultivated and the processing and storage of farm produce

The variety of food sources available to community members was also limited. Food insecurity in the community appeared to be compounded by the type of crops cultivated and, more importantly, the inability of the community members to process and store most of the farm produce. It appears due to the challenges related to farming; community members cultivated only few of the crops that could be cultivated in the community. Even so, only few of the crops were processed through drying and kept for use. Most vegetables and fruit appeared to be consumed during the farming season. The main method of processing and preserving food was to dry them in the sun. Only grains, legumes, cereals, and few vegetables such as okra and kenaf leaves were dried and stored. Participants' reports seemed to suggests that large quantities of vegetables could be harvested, as

occurs in most of the farming areas in Ghana, but the unpreserved and unsold produce was thrown away or left on the farms to rot (Armah et al., 2010; Belmain and Stevenson, 2001):

On the other side of the wall was a big earthenware pot, and Mory's mother, Akele told me that the pot contained kenaf leaves whilst the 3 jute sacks contained groundnuts, cowpeas, and Bambara beans. There was also a basin of combs of millet, and she said to me, that the millet was the worst of their produce during the recent farming season. The millet had not yielded as well as the other crops. FN, Aduko's HCp3

7.3.6.1.Sale of farm produce

As indicated earlier, some households depended solely on their farm produce to buy food flavourings, such as fish fingerlings, and to meet other household needs, and had to sell their produce during and immediately after the harvest. Households with alternative sources of income only sold some of their farm produce when those alternative sources of income were unavailable. Additionally, it was discovered that some farm produce was cultivated partly for consumption and partly for cash. Thus even though, none of the participating compounds produced crops mainly for cash, it was revealed that some members of the community did rear animals mainly for sale:

MK: *You indicated that there are times when there is nothing at all at home, how then do you feed the children during such times?*

Adongo: *During those periods when there is nothing at all when you have an animal you sell it. Even if you have just a cow, you have to sell it and buy millet and other ingredients. You see you cannot take human beings for granted. You cannot allow a cow to be roaming when children are going round crying and moving to other people's house to beg for food to eat. When you do that, the rest of the money, you keep so that when the food finishes you give to the woman again and she will go and buy. Akule's H, Adongo F*

Abaama: *Well it depends on what each family can afford. But my family uses salt, pepper, tomatoes, and once in a while meat if an animal dies.*

MK: *Why is meat not always included and only when an animal dies?*

Abaama: *The reason is that animals are raised to be sold off at the market for money to buy ingredients and to help cater for the family needs. You can't also keep a house bare without animals, at least a fowl. They have their purpose. So it is uncommon to just kill from your own animal farm. Beside meat is costly to buy in the market so we can't afford hence we don't eat meat often. Nugeba's HCp1, Abaama GM*

It appeared animals would normally be sold as the last resort when the state of food insecurity became severe and food providers exhaust other sources of food provision. Animals are also a sign of household's prestige, and some households resist selling their animals even when that was the most available means of obtaining food:

Anaba: So Amage (referring to me)... If they use their own animals, I don't have problem but then you hear them say "Catch fowl and sell and buy food". Hunger does not kill. For how long do we normally not have food, and when they put salt alone in the soup, it is good. You see our soups give blood. Look at the guinea corn, is that not blood? But because the children are spoilt, they don't like guinea corn TZ. Anaba's H Anaba, GF

It was observed that most community members rush to sell farm produce between October and December. This makes the market flood with goods and prices very low. It was revealed that households' sold their farm produce during this time to enable them buy items such as clothes and

shoes for Christmas and new year festivities, and for marrying and performing funerals which occur after Christmas. Consequently, households immediately returned to their state of food insecurity from January onwards. Meanwhile, it appears prices of those same items became expensive when households did not have them and had to buy from the market. This contributes to a constant challenge in child feeding.

7.4.6.1. Seasonal rainfall patterns

Farming in the community relies mainly on the natural rainfall pattern. Rainfall was expected to occur for four to six months every year after which the community would experience a period of drought for six to eight months. The yearly average rainfall in the community is seventy rain days (Ghanaweb, 2014). This supports participants' reports that the normal pattern of rainfall contributed majorly to the poverty and food insecurity. Many participants reported that rainfall and temperature patterns were becoming increasingly variable and unreliable. Anaba and Lamisi described rainfall pattern and farming:

You know in this our town, we do not farm and get good yield. You can just farm and harvest nothing... it is the rainfall pattern, what can we do. We do not have good rains fall in this town.

Yuureinga's HCp2 Lamisi M

MK: *If you farm that way, then you have enough food for children in this community?*

Anaba: *No there is not usually enough food in this community throughout the year. You know we only farm during the rainy season. The rain as you saw, it doesn't come and then the crops will start drying. You also know that we have not got what it takes to farm enough for the long drought that we experience here. Meanwhile, we depend on our farm products to sell and buy ingredients. So there comes a point in time when we do not have enough to cook for the children. So in this community food shortage is a yearly affair and children eat less when there is not enough (pause) this is a big challenge to us in this community.* **Aduko's H, Anaba, F**

This erratic rainfall pattern coupled with the practice of selling some of the foodstuff to generate money to meet other household expenses (health costs, purchase of toiletries, clothing and food items that they do not produce such as smoked fish fingerlings, salt, and dawadawa) results in the rapid depletion of foodstuff. However, trading also helped household to find food for children.

7.7. Trading

Both men and women in the community traded. Most men traded in animals, whilst the women traded in food and household items. It was observed that in households where men traded, children were fed more regularly than in those households where only women or no one traded. Examples of households that had men trading included Amisah and Yuureinga's households:

At this time, the neighbour had gone. So we had a chat about his job and other things. He (Azure) said he was a cattle dealer. He buys animals in the village and goes to sell them in the big towns. He told me he goes to any town he is told has a good market and could move at any time provided he has money to buy the animals. **FN, Amisah's HCp1.**

My husband has gone to the neighbouring market to buy cattle; you know they are currently still cheap. He goes to Kumasi, Techima and a lot of places to sell them. **Yuureinga's HCp1 Pugbilla, M**

In these households, both the men and women were observed to trade and they also verbally reported that they had food throughout the year since they did not sell all their produce. Azure's wife told me that they consciously decided on what amount of food to retain for the family. She said that if she mistakenly sold a lot of any food and they ran short of it, her husband complained so she did not like to sell their foodstuff like other women did:

"As my husband told you, we all trade so we do not use up our farm produce.

My husband does not like it when we run out of food stuffs, so unlike some women, immediately after the farming, they are in a hurry to go sell. You don't blame them. They need the money to buy other things. This year my husband bought the children Christmas clothing from Kumasi, so I did not even have to buy them here, sometimes we sell things to buy clothes for the Christmas but that money may not be enough. Things here are expensive".

I asked how they ensured their food supply throughout the year, and she said:

"I always check the food; we don't sell if we know it won't meet the food needs of all of us. You saw my children. They are growing. If you don't keep food they return from school complaining of hunger... FN, Amisah'sHCp1 Azumah M

Trading provided a good opportunity for households to generate income to ensure food security. However, women's trade was inconsistent and appears to affect child feeding more. Women travelled to neighbouring towns for several hours or even days, leaving children at home, who were sometimes not fed. The episode in Abaa and Anaba's households are examples of women trading activities effect on child feeding.

On this occasion, Tee's mother (Samara), the daughter in-law of Palo's mother was carrying Palos on her back, when I arrived in the house. I was told that Palo's mother had gone to a nearby town to collect her monies from her customers. I asked Samara, who usually took care of Palo when his mother was away, and she told me, "I always do anytime she is not around". Whilst she carried Palo on her back, I was still hanging around chatting with Tees's mother, Palos mother arrived and, shouting from the gate, she said "Where is my son? He should be very hungry. Has he eaten something at all? "Palo hearing his mother's voice started crying and moving in the direction of his mother. "He prefers the breast milk to everything, so when he gets that he won't eat. That is why I always leave him to be with Samara" (Tee's mother). I asked her where she went, and she said, "Uhm, you know, I told you, I am always on the move, I trade and if you do not move around your business will collapse. Sometimes, I take Palo with me, but when we are stranded, it's always difficult with a child. So when I have the opportunity, I leave him home." FN, Abaa's HCp1

Nima's mother had tied some items on her bicycle and was just leaving home. I asked them what the children had eaten and they told me the children had eaten left-overs. Isma's mother told me she was going with her baby and so she would eat wherever they went. However, Nima's mother told me that the 3 wives of her husband's father were around and she had asked Nima to check in their compound if she was hungry. I asked her what Nima would do if these people did not cook and she laughed and said, "No one dies of hunger. She would only suffer a bit." She added that when she came in the evening, she would give Nima food if she had not eaten. I returned to the house shortly after noon and observed that that two of the children were asleep and one was standing by the grandfather and asking for some food as she was hungry. According to the children's grandfather, he asked them if their mothers had kept food somewhere and they responded negatively. He also told me that he thought his other wives were home to find food for the children but there was no one at home. He then lamented that he did not know what to do with the children and complained to me about the women's behaviour in his house. He said to me "Now you are all chasing after money, so you do not have time to take care of children". Laadi

called out to her daughter Nima and asked her how she was doing and Nima said, 'I am hungry'. Laadi shouted at her, 'Did you not tell your grandmother? Nima said that she had told her grandfather but he had said there was no food... Despite what she said, she told me whenever Nima starts sleeping and you wake her up, she will not eat well so she would ensure that she ate well in the morning. I excused myself and left as she went in to put Nima down in a room. FN Anaba' H

The findings also showed that it was more common for women than men to stop trading during the farming season. Even though the data did not clearly show why this was so, it appeared the nature of trade dictated the timing of trading activities. The men's trade in animals allowed them to sell to buyers' flexibly and mutually convenient time. This flexibility suggests men could farm and trade concurrently. Conversely, the women's trading items had to be taken to the market centre or the women had to hawk round the houses to be able to sell effectively. As seen earlier in Apoka's narrative, it appeared the women's trading also required frequent visits to the supplier to obtain items, and this could conflict with farming days. Lari, Amage and Atuamah's reports show how the farming and women trading may conflict:

... If you like making excuses every market day, who will do the farming for you? It is difficult to juggle things during the farming season and besides, there is no money. So I just stop and finish the farming before I go back to it. Anaba' HCp1Lari M

I cannot collect the oranges and keep them during the farming season because I may have to go to farm and if they spoil how do I pay for them? Aduko'sHCp2 Amage M

You know our trade is dry season trade. I have to be home always to check the malt. If I send malt to my customer and I am not able to return for the money, the money always vanishes. She will keep giving you excuses and small amounts anytime which you will have spent before you know it. So when the farming starts, I concentrate there. Awuni's HCp1 Atuamah, M

Lari, Amage and Atuamah's statements suggests that the nature of their trade did not allow them to continue trading during the farming season. Funding for both the trade and farming also appeared to be reasons for some women discontinuing trade during the farming season. Whereas some participants suggested that they used their trading capital to buy seed and obtain farm labour, others indicated that they always lost their trading capital to other expenses such as food and in addition to their own farming, they worked on the farms of others for a fee. This allows them to generate capital or their own farm and ultimately their trade. A participant lamented on her challenge to trade and farm:

I always borrow to farm so by the time I finish paying my debts and feeding these children continuing with the business is not easy. Before I know it, I am always in debt again; sometimes unable to even feed the children. So even if I can farm and trade at the same time, after all some people come to your house to ask for items, I am unable to buy items to sell. Also in our place, people will come to buy your things and when you follow up they insult you and make insinuations as to whether you do not buy things on credit. Bakule's HCp1 Abena, M

It also appeared that because the monetary value of the men's trading was higher than that of the women they seem to have more capital and to trade consistently. It also appears the men were wholesalers and mostly traded with animals' retailers from big towns rather than the local community. This seemed to promote better returns and more regular payment than the women's

trades. Most of the women traded with other members of the community and it was reported that people may buy things and not pay or pay late and this ended up reducing the value of the money over time. Furthermore, it appeared that the role of the woman as family shoppers affected their trading capital. For instance, if there was no other money, women used their business capital to buy food to feed the family. An example is Apoka's scenario. Gradually, without finding money from other sources to replace their business capital used for meeting family needs, their trade is ended.

It also emerged that the profit most trading women made from selling their goods ranged between two to twenty Ghana cedis (0.35 pence to 3.50 pound) per week. The income of male traders was not ascertained. However, animals are generally items of high value in Ghana, and a cow, for example, may cost more than £200. This shows the differences in the scale of men's and women's capital. In the next section, another source of household income, remittances, is presented.

7.8. Remittances

At the beginning of the fieldwork, some fathers were reported to have migrated to some other part of the country. It emerged that whilst some had migrated permanently to work in places such as the mines and harbours in the south, most of them had travelled temporarily to find work and were expected to return before the rainy season to farm. One mother had also migrated to the capital city of Ghana to find domestic work. The migration of these household members influenced the income of the household and child feeding. Travelling family members were expected to remit the left behind family members. However, whereas some of the migrant household members did remit funds to their families others did not. Awinporka and others indicated that they received remittances regularly from their husbands. Awinporka also added that she spoke with her husband regularly as he had bought her a mobile phone:

We have farm lands and farm. My husband sends money regularly and if he is not able to his brother sometimes give us foodstuffs and when P is sick he sometimes gives money to. But I have a phone my husband bought for me so we are always in touch and when he is not able to send money, he tells me and sometimes he makes me borrow from people and we pay later.

Nugeba's household cp1, Awinporka M

However, some other participants did not receive remittances or any communication from their relatives. In the case of Apoka her husband did not send any money home nor did he return with any income. This is what Apoka had to say in relation to her husband remitting them:

Apoka called out to me from a distance and requested that I came in. I went to the house and she informed me that her husband had returned with empty hands. In a low voice, she said to me, "Madam, can you imagine? This is why we always quarrel. I am just waiting for him to make demands for food and I will ask him, from where? "

Apoka had told me earlier during our interaction that her husband had travelled to work and make money to support the family. However, since he had left he had never sent them money like the other men he went with were doing. She had information earlier through the village gossip that her husband was stranded as he had spent all the money he had made on alcohol. Despite that,

she was hopeful that when he eventually returned he would have brought home some money.

Akongo's HCp1 Apoka M

Tuley, whose husband had not remitted funds for almost a year, travelled before the end of the fieldwork to see her husband, who worked in a harbour, in one of the coastal towns. She indicated that she knew her husband made enough money to be able to send them some, and she also knew that there were many from their village and neighbouring villages' who were in touch with her husband. She suggested that he could send her money regularly if he wanted. She suggested that a money transfer system, mobile money, was an easy way of sending money her husband was aware of. This is what she had to say in relation to her situation;

"As for me, I am going there. He told me that we would rebuild his father's compound and stay there. Just imagine, not even money for the children upkeep. If he wants to follow his father's footsteps, I can't prevent him. But he has to take care of the children. How to feed them? How shaming! I have to be begging always. I interrupted saying that maybe her husband could not find the means to send them the money. Tuley disagreed with me and said her husband knew all the easy ways. "We have many of our people who go and come almost every week and what of our neighbouring villages? I met someone who returned recently and said they had seen my husband. Even mobile money transfer is easy and he knows it." **Anaba's HCp2 Tuley M**

Tuley appeared very angry about her husband's attitude and implied that if she was not feeding her children well, it was because her husband was not remitting funds to her and she depended on good will since she had no other source of income to feed the children. Similarly, Samara whose husband was living nine miles away reported that her husband did not remit funds regularly. She added that he was building a block house, which was standing behind their existing house. She indicated that anytime she complained, he informed her that he used the money he made to build their new house. She also added that in spite of his inability to remit funds regularly, he prevented her from engaging in any income generating activity:

You see, I do nothing. My father in-law and I co- farm and my husband says I must not work. I was learning to be a hair stylist and he stopped me. When I gave birth I told him that when Tusi starts school I would like to finish my styling lessons or trade in something and he told me that, only in my father's house and not in his. You see, if I had my own money, I could buy Tusi eggs and other things. Sometimes we are so short of money. I have to coax him for a long time before I get something out of him **Abaa's HCp1 Samara, M**

According to Samara, because of the irregularity of her husband's remittances, anytime he gave her money she tried to spend carefully because she did not know when the next remittance was coming.

Furthermore, Apoka's family scenario seems to indicate that some of the migrant family members used some of the households' capital to migrate intending to work and multiply the money for the family. However, as in the case of Apoka, some did not return with any money. Not only did they fail to remit to their household or return with money, but they also lost the capital that they were given to fund their travel from the family's meagre resources. For instance, in Aduko's household, Sefi's grandmother, had sold her goat for her daughter, Sefi's mother, to travel to the south to

work. In her case, Sefi's grandmother was complaining that Sefi's mother was not getting a job and she wanted her to return to the village:

*I also asked if they had heard from Sefi's mother who had migrated to the south to work. Sefi's grandmother responded and told me that she had asked her to return to the village because she was not getting a job and she did not want her to fall prey for the second time. Sefi's grandmother indicated that Sefi mother was hesitant to return without making any money because she felt they had wasted money for her to travel to the south. Sefi's grandmother said: **MemuGM**; "But, I want her back alone (meaning without pregnancy). You know these children can be careless. See three of them all have children in this house and no husband and..." **Aduko's HCp1***

Single parenthood also appears to worsen households' ability to provide for and feed their children adequately. Sefi's grandmother indicated that she was afraid her daughter would become pregnant and have another child, whom they would have to feed as the child's father may not accept responsibility as was the case with Sefi. Four of the children included in the study were not supported by their biological fathers because they had similar stories like Sefi and 3 other children's fathers were not allowed to customarily claim custody of their children and so were not providing financial assistance.

7.9. Household dependency ratios

Another factor that contributed to food insecurity in this community was the high dependency ratio. It was found that there were more people in households who were not engaged in any form of labour and earning income, than the few who earn more income. Dependants were mostly children between ages 3 months to fifteen years, and elderly individuals above sixty-five years. However, most individuals between the 'independent' age group (16-65) were not engaged in income generating activities and were also dependents. There were seasonal and permanent dependents among this category. It seemed that during the farming season, dependency reduced as most people cultivated their own crops or worked as farms labour for money. Apoka reported that her fifteen year old son helped her on the family farm, and also worked on other people's farms for money and gave some of the money for household use, and also used it to buy and raise animals, and buy personal things such as clothing:

*Madam, as for my son he has sympathy for me. I understand why he won't sell his fowl for us. He brought me a lot of money during the farming season and I was so pleased. **Akongo's HCp1Apoka, M***

Asolmia, a grandmother, who appeared to be about seventy years old also, indicated that sometimes when her daughter in-law went to trade, she cooked her own food and served her grandchild. She reported that she did not wait for people to feed her and continued to farm though her children sent her money when times were hard. At the time of interviewing her, she indicated that she still had a lot of groundnuts and would sell some:

*Looks, my daughter, we four wives, including me, are not waiting for anyone to give money. You see Nima roaming around here, her mother may not be in so I may have to cook for her. I farm and if my children remit me small during hard times it is ok. I can give some to my grandchildren but some people just cross their fingers waiting to collect and eat...If your grandchild is hungry, what do you do? Is it not a shame? **Anaba's HCp1 Asolmia GM***

These findings suggest that food security improved during the farming season, freeing the main breadwinners to concentrate more on the children. However, the dependence ratios still ranged between three and ten people per individual earner and the reduction in dependency ratios was negligible and did not significantly affect household expenditure which appeared to be mainly on food. It was found that in such households' income per individual was very low and this invariably affected households' ability to afford food regularly to maintain food security. In Apoka's compound, there were about ten individuals and she was the main income earner making a profit of three (3) Ghana cedis or fifty-two pence every three days. Even though her son worked during the farming season to supplement Apoka's income, it appeared the reduction in dependency ratio was small and brief. Food supplies continued to be very inadequate and the household just looked on without knowing where the next meal was coming from. This was found to be exacerbated by the priorities competing with the need to provide food such as clothes, shelter, and funerals.

7.10. **Daily and seasonal meals gap: The aftermath of food insecurity**

Food security was severely compromised in some households, and rationing food emerged as a way of managing the food insecurity. This created meal gaps as some children could stay without food for days. Fazy son is 24 months but this is what she had to say about his feeding, which is similar to what transpires in Akule's house;

*We stay like that. Sometimes, I get food from neighbours but sometimes, I get nothing so he sucks the breast milk only for those days we do not have food, Madam. ...It varies sometimes a day and sometimes two or three days: **Akongo's HCp1 Fazy M***

*Imagine that even with the way I manage the food, there are days these children go without food. She added that it saddened her when that happened, so she tried not to use up all the food in the house when she was not certain of when she would get food again. It is especially difficult when these girls return from school and look very weak and you have nothing to give to them. Like I said, "As for Geho, he is always breastfeeding, so when we have no food for days, it is me who suffers because he sucks me till I feel dizzy" **FN Akule's HCp1***

A child living without meals for long periods was reportedly a common phenomenon during the six to eight months of the dry season when households exhaust all their food stocks and have no regular income to buy more. Thus the meal gaps were both daily and seasonal. Aminatu lamentations demonstrate this:

You see, there are even times when we have to eat the seed for next harvest as there is nothing to eat. Uhm, look we have sleep hunger for days in this compound. After the harvesting season, it always feel as if we may not reach the next season, and when I look at these children, I cry because you can see hunger all over but you are unable to do anything. But thank God, today, we have the donkey cart. So for instance, when it becomes so hard, I go to the bush and cart fire wood and sell it to find food for me and my children

Aduko's HCp4 Aminatu GM

Ah, madam, you are asking me as if I can do magic. Even my aunty and her family go through the same. If no one else has food in this house, what do we do? Me, I can't do anything when all my sources of finding food for him are exhausted. Is he not better than me? He sucks me. I depend

on water. Sometimes, I am not even able to walk around because I am so hungry.

Akongo's HCp1 Fazy M

Fazy's suggestion is that at certain points when there was no food, they simply left it to providence. Other participants outlined a number of strategies including Planned rationing of food, food sharing, communal cooking and dependence on specific types of foodstuff that provide quick satiety when they were asked how they managed to feed their children during periods severe food shortages.

7.11. Planned rationing of children's food

During interviews, when participants were asked how many times they fed their children, most reported between three and five meals a day. However, it was observed that most children did not generally have that number of meals. Households rationed food for children so that they could save some of the food for future meals. In an interview with her earlier, Teni reported that her child ate several times a day. However, during an observation she acknowledged that her child could stay without food for some days:

Well, when there is food, he eats as many times as he wants, so he could eat four times from the time he wakes up till he goes to sleep... when he cries and there is food, I give him, if not he sucks breast. When we are eating and he shows interest, I give him, and when his father and siblings are eating and he shows interest they feed him so he eats many times a day. **Akule's H Teni, M**

Indeed the field note showed that this mother consciously skipped cooking so that, she could save food for the children in future:

Teni also told me that if she cooked too much food the children would indulge and over eat. "It is wiser to let the child eat wisely so there is some food for them to eat another day" **FN Akule's HCp1**

It was observed that some of the children who were still breastfeeding were fed only on breast milk even though some of their parents had reported earlier that their children were fed several times a day. Breastfeeding appeared to be counted as part of the number of meals a child ate daily. For instance, Akule attempted to justify that breast milk was a suitable substitute for her one year, four months old son when there was no food;

She explained that what she actually meant was that, G always had breast milk so when there was no food at home he still had something to eat. I asked her whether she believed the breast milk was always enough for G and she hesitated and said she did not understand what I meant. She then added, "Do you mean does he get satisfied? As for breast milk, it is divinely prepared to satisfy children. It is we who always think that the children may not be satisfied. If children are not satisfied with the breast milk it would not be made as the most appropriate food for children. Do you not see when the child gets older and the breast milk is not enough the child starts to eat more eagerly?" **Akule's HCP1, Teni, M**

Apoka and Atuamah shared similar beliefs that breast milk could substitute for other food. Consequently, for the children who were also breastfeeding, participants were more likely to stretch the gap between their meals to save food for other siblings:

She further added that in the mornings when she gave the children groundnuts and water they were okay for that period and once Cusi had the breast milk, she was very sure that Cusi was

satisfied. We continued to chat about the two children's feeding. During the conversation, she indicated that she was not so worried about Cusi when they did not have food at all since she had breast milk that the other children did not have. **FN, Akongo's HCp1M1**

Some participants also reported that their children had fewer meals a day when the household's store of food was low because they did not know when the next food would come. One mother asked whether it was not better to deny a child food at some point so that at other times there would be food to feed the child, instead of giving the children food anytime they asked for it:

Ed returned and went straight to his mum and asked for more food. She laughed out loud and asked me whether I heard what Ed had said and then told me. I told her that it meant Ed was still hungry and needed food. Ed's mother told me, it was not right to do that and that would encourage Ed. She further explained to me that there was the need to save some of the food for him to eat later instead of giving it all to him now. She firmly refused to give Ed any more food and Ed sat down crying. **FN, Akongo's household, cp2M**

It was clear that the frequency of cooking and eating food in households was geared towards managing food insecurity and child feeding.

7.12. Household Food cooking pattern

It also emerged that cooking patterns and frequency were strategies adopted for managing food security. Three main traditional cooking times were observed, and corresponded with the number of meals community members were traditionally expected to have a day, namely breakfast, lunch, and supper. However, it was observed that households' might skip a meal. Saving food for future meals was discovered as the main reason for not cooking. In the community, food was usually cooked to be eaten at a particular time on the same day. However, during times of food shortage food might be prepared one day for consumption the next day or even later depending on the severity of food shortage. Akele explained the context that informed the frequency of cooking:

When you wake up in the morning you will prepare food if you have it. The child will eat and reserve some and eat that in the afternoon and in the evening you will cook again if there is food.
Aduko's Cp3Akele, M

She then told me that she was not cooking that afternoon as the children would chew groundnuts for lunch and wait for supper. I asked what she was going to give to Acela, the 7-month old child, and she said he would suck breast milk **Fn, Amisah's HCp1**

Generally, it was deemed better to skip breakfast and cook food for lunch and supper so that children who did not breastfeed could look forward to food in the afternoon. This strategy was generally used to ensure that children who went to school came home to food in the afternoon. As a result, children under five years, not breastfeeding but with siblings in school, were more likely to go without breakfast. Cusi and Timmy, and Nima fall into this category. Cusi and Timmy's mother when asked what she had fed one of her children that morning said that she usually cooked in the afternoon because then her other children returning from school had something to eat:

"As for us we have not got enough (literally, we are poor), so you may not learn anything from me".

So I asked what she had fed the child that morning. She responded, "As for her, she is lucky. She always has the breast milk. It is the one standing over there that worries me. Our last meal was yesterday afternoon, when we took the bito soup, and since then she has been sucking the breast,

as you can see she sucks very well. She is not the type of children who does not like breast milk so most of the time; I try to cook in the afternoon so that my other children can eat when they return from school **FN, Akongo's HCp1M1**

Further evidence of this strategy came from Anaba's household:

Sometimes, when I can only cook once, I cook lunch; you know when the children return home from school, they need to get something to eat after learning and walking in the sun." ...I asked her what Nima ate whilst waiting to eat lunch. She said that she sometimes buys porridge, gives her left-overs or allows her to go to her grandmother's compound to eat. She also suggested that if she had to wait a little more to have lunch, it was not bad. **Fn Anaba's household, cp1M1**

Generally, it appeared that the children in Nima and Cusi's group usually went to play and forgot about food, whilst breastfeeding children had breast milk. Communal cooking and food sharing also seemed to be ways that households managed food insecurity.

7.13. **Food sharing & communal cooking**

It was observed that communal cooking and the sharing of food were common practices providing for some children whose mothers did not have food at particular times of the day or season of the year. It allowed these mothers to feed their children thus bridging the meal gaps that prevented children from eating for hours. Sometimes different families within or different households shared food with each other. On a number of occasions, mothers reported this whilst others were observed receiving food from other compounds or households to feed their child. Consider what Atooley, Lari and Pugkuti had to say:

...when I sometimes do not have food and decide to collect food elsewhere for them, then they may get something different to eat, if not, if it is only TZ we can prepare, then that is what they have to eat **Anaba's HCp1, Atooley, M**

We conversed about many issues whilst she washed clothing. In the process, she told me that she had to feed Rabia, a child from another compound because sometimes she also left her child, Nima when Rabia's mother was at home to feed her. I wanted to know if that was something they did frequently and in her usual way of telling me that I was asking questions about matters of common knowledge, she said, "If you did not help someone's child, your own child will starve one day when you are not around." **FN, Anaba's H, Lari, M**

My rival, when I am not around, takes care of them, and cooks and feeds the children. **Yuureinga's H, Pugkuti M**

Notwithstanding the fact that the sharing of food has positive implications for children; it also seems to have some negative outcomes for some children as it appears to allow mothers to leave children without providing for them. It appeared that other families simply offered food to children only when such children were around them and it was a meal time. For instance, one of the children involved in the study went out roaming within the community for most of the day and refused to eat on returning home. It turned out that someone in one of the households she had visited had offered this child food:

Sefi returned home after 4 pm. She had wandered around with other children to other houses to play Her grandmother told me that anytime the children wandered somewhere and the sun was

scourging, they remained there and may never think about returning home. Sometimes the adults in the household may persuade them to go home or when the children went to a good person that person gave them food but some people did not. I suggested that perhaps those people may not have food and she agreed reluctantly. She then asked Sefi's auntie to serve Sefi food. But Sefi refused and said she was not hungry. She then mentioned that she had eaten at a particular house. Her grandmother was not happy and reprimanded her that she had been told many times to return home if she felt hungry **Aduko HCp1 Memu, GM**

Conversely, other mothers could just ask their child to go to other compounds within their houses and nose around for food;

You are worrying me, go to Jay's mother's place and see if there are any left-overs. By now Jay will have refused to eat as usual and there will be left-overs. Go and get food there and eat. When you finish, go and play. Do not stay in the sun ok. **FN, Aduko's HCp4, Aminatu Gm**

Communal cooking was another practice in which food sharing occurred. Family members whether extended or nuclear, cooked and shared food among family members across a compound. Occasionally mothers from different household also pooled resources and cooked communally for their family members, which allowed children to eat. In this instance, the ingredients and other requirements for the food preparation would be contributed by both participants, or one of the participants would provide physical assistance during the preparation of the food whilst the other provided the ingredients. A typical case of communal cooking is what transpired in compound one of Abaa's household

I asked Tusi's mother if she would use the coal pot as she did in the morning and she told me: "I bought the charcoal myself and if I use it to cook for the whole house I will not have any in the morning to boil water or cook something for my child and myself." She said this in a low tone. She told me that they do not always cook together; sometimes her relative did not even acknowledge her. "She is very friendly with me when she is very busy and wants me to look after her child. **FN, Abaa, HCp1**

In this scenario, it appeared, Samara, Tusi's mother usually provided physical assistance whilst her step mother in-law (Pogdaa) provided the ingredients. Samara and her step mother did not always cook together but they had an implicit agreement because it benefitted both even though there appeared to be some tension. As indicated earlier, Samara's husband did not remit funds regularly and so she cooked with her mother in-law (Pogdaa), who provided the ingredients in exchange for Samara cooking and taking care of Pogdaa's son, whilst Pogdaa was away trading. Communal cooking was also reported to be done by women who shared the same husband. Two women from one household who were included in the study reported that they cooked in turns for the whole extended family. One of them indicated that their mother in-law and their husband provided ingredients for the communal cooking. However, when one of them was away the other woman provided for all the children:

Yes, that is true. My mother-in-law and husband, they trade and we farm also. So, they provide the food. But if they don't provide, the little you have, you must use it. When my rival is not there and the children appear hungry, you must sacrifice. I do not want anyone to call me a bad woman **Yuureinga's HCp1, Pugbilla M**

7.14. **Summary**

This chapter presented findings on poverty and food insecurity that was found in the community, and its influences on child feeding. The findings presented included the nature of food insecurity, sources of food and income generation activities such as farming and trading. The chapter also presented findings on how child feeding is managed in the presence of food insecurity. Ways of managing child feeding that were identified included food rationing, food sharing and communal cooking.

CHAPTER EIGHT
DISCOURSE ON THE FEEDING OF CHILDREN

Chapter 8: Discourse on the feeding of children

8.1. Overview

The content of a child's diets and their feeding as demonstrated in participant's responses and attitudes towards child feeding and my observations indicate that the community's cultural ideals were the most significant considerations. The type and sources of information on child feeding, the portrayal of physical food, the symbolism of food and child feeding were discovered as important influences of child feeding in the community. The ensuing sections explain these themes.

8.2. Sources of child feeding information

8.2.1 Local community knowledge

Participants suggested that the community's local knowledge on child feeding originates from two main sources. One source was norms formed through community members' interactions and sharing of ideas, which are passed down from generation to generation, and the other is through the traditional religious body. The data revealed local beliefs regarding food and how children ought to be fed. These beliefs include the meaning and purpose of food; the symbolism of food as a signifier of social status; the oral initiation of new-borns; food taboos and restrictions; the timing of introducing a child to food; child weaning and constitutes of a child's diet. An instance where norms may form through community members' interactions emerged during interviews as when participants prepared meals:

*There were other people in the compound, some of whom I was told later were friends of Sefi's aunts and uncles. The people in the compound were all chatting. I observed there were a range of issues being discussed, most of which did not seem to have a relationship with the cooking process except the discussion between Sefi's aunts and her grandmother. The latter's conversation centred on the quantities of the ingredients to be cooked. **FN, Aduko's HCp1***

*"Ehee-n, I live with the people. My brother's wife, I used to help her and she will tell me how to cook and feed her children. But here my auntie also supervises my cooking and sometimes reprimands me, when I don't cook the food well. **Aduko's HCp1, Sefi's senior aunt***

*'In the home, when you are growing up, you watch your mother how they go about such things. You may also ask questions of some activities and learn from them...Yes, you know most of the women in the houses can be a source of knowledge. For instance, my senior siblings were also the people I learnt from and my aunts'". **Yuuringa's H, Pugkuti, M***

The immediate responses generally suggest that female members of families learn the cooking process and child feeding through an apprenticeship model, where they assist adult females and learn from them. The sharing of ideas and values also occur among individuals of similar ages, with a similar level of child feeding knowledge during social interactions reported in the previous chapter.

However, the religious sources seemed to be the key source of the community child feeding knowledge. The data indicates that shortly before or at the birth of every baby, the household head, or their delegate(s) may be sent to consult a diviner (spiritual leader of the community's

African traditional religion) about the newborn child's welfare. The diviner may customarily recommend some practices some of which may impact on the child's feeding. For instance, the diviner may make a pronouncement about the child's food taboos and feeding related rites, as in the following excerpt:

'My father in-law, went to consult the diviner and came back to say that, there is a deity in the house that wanted the child to be named after it. The diviner also saw that the child's soul did not like the guinea corn and that the guinea corn that I was eating was worrying the child when it sucks my breast milk. When she brought this information and I stopped eating the guinea corn, the child stopped crying immediately and never became sick again'. **Aduko's householdcp4 Aminatu GM**

Aminatu is the grandmother of one of the included children, and in the excerpt, she was narrating what usually happened when a child was born. In this case, she was referring to one of her own children. She indicated that her grandchild was not born at home and that no one went to consult a diviner. She also lamented that she had asked her husband to find out about her grandchild because he fell sick frequently, but her husband had not paid attention to this. Her submission on what ought to have been done for her grandchild appeared to be like this narration by the diviner;

'If a child is born, they will use guinea corn, they will put it into water for the child to drink and this means that the child is welcomed into the house as a new member of the family. After that, an elder from the house goes to the diviner... Yes, he needs to find out from the ancestors about the new member of the family from the diviner...the diviner then reveals what the ancestors want them to do. The diviner can also treat the sick and reveal the intentions of the ancestors for other living relatives. **Diviner two**

Even though the diviner's narrative suggests that consultation for their recommendations was at the birth of a baby, reports of other participants suggests that visits are made to diviners at other times. Some households' heads might routinely visit diviners as a proactive measure to seek ancestors or guardian deities' protection of their families, and determine expectations deities may have of families. Sickness or unusual happenings in a family could also prompt special visits to diviners when the intervention of a superior power was sought. The statement of Agandaa' a grandfather summarises how visiting a diviner may impact a child's feeding:

As a responsible head of your house, you must know when to seek the face of your ancestors. If you just sit around without visiting someone who can see beyond you, things can happen behind you. As you are asking these women about the children's feeding like this, there are times when some children remain chronically ill, and by chance, the diviners may see that the child is eating foods the gods forbids them to eat. Is it not because I have gone to the diviner? Would I have seen such a thing? We do not have extra sight. **Agandaa's H, Agandaa, GF**

It appears almost every element of community child feeding knowledge originated from spiritual revelations delivered by diviners even though the interactions show that some elements of the child feeding knowledge are simply the community norms. It also appears the norms could be traditional recommendations of diviners. Consider the following interaction:

MK: *Mma, so how did you learn that you must give a child fluid when they are newly born, before they can receive breast milk?*

Mmabila: *you this child, you ask questions a lot. How do I know, look at me, an old lady like me, if I do not know those things then, I am useless? I met every woman of my father's generation before she died, and those women were knowledgeable and because, we listened and they used to teach us.*

MK: *ok, I see, so how would they have known that themselves?*

Mmabila: *you see you are as childish as the women in this house, as your fathers have been going to the diviners, what they do with the information? They tell and it is only irresponsible mothers who would not pass this down to their children, and then when there is a tragedy, everyone is crying. When Akele came, I told her we do not taboo anything, so the child can eat anything, unless the men visit the diviners and new things come up.*

Mmabila's responses resonated with the responses of others indicating that most advice generally emanates from diviners. This spiritual source of information continues to be important and is a main source of information on many aspects of an individual's life in the community. A woman who reported having converted to Christianity lamented that there was a proliferation of diviners in the community, and she suspected they were not genuine. Nonetheless, as seen here, their influence appears to be very significant in child feeding.

8.3. The Community's child feeding notions

The local community's beliefs around food and child feeding appeared to be deeply rooted, consistently and predictably applied. The data shows that households interpreted and mainly depended on these traditional beliefs to inform the choice of a child's food and feeding pattern. This appeared to be associated with the community's notion of food.

8.3.1 Meaning of what children eat

The meaning of food to the community was reflected in the physical appearance of food, the groupings of food, the household's stock of food and the content of a child's diets.

8.1.3.1. The Literal meaning of food

It was essential to understand what meaning participants gave to food to appreciate why some foods and not others were given to children. The descriptions of food varied slightly among participants, but one account appeared to capture the whole community's concept of food. Food was repeatedly described as anything that resulted in satiety and prevented children from crying. Similarly, in a less emphatic manner, a few participants reported that food was anything given to a child to prevent them nosing around compounds for food. Feeding a child was thus generally linked to physical filling of the child. For example, when questioned on what food they gave to their children, this is part of what Akele and Dukopoma had to say:

...if the thing is edible and can satisfy a human being, is it not food? if you give a child something, and the next minute, that child is on you again, and you are not able to do whatever work you were doing or even have peace of mind to rest, will you call such a thing food? It means the child was not satisfied. Food is what I have told you earlier. Our TZ is the best food one can ever find."

Akongo'sH, Dukopoma, M

Dukopoma, like most of the participants appeared to suggest that food was as any quick filling, edible substance of high volume. It also appears, from the statement of Akele that food stuffs that were eaten in small portions and had low volume and less filling ability such as meat were not

considered food, whereas, TZ (a thick mush made from, maize millet or guinea corn flour), usually eaten with soup as mentioned in Dukopoma's response was considered food. Consider the question of Akele when she was asked to explain her reason for not considering meat as food:

...does meat fill the stomach of the child? If your child is crying of hunger and you give them only meat, will it satisfy the child? Meat is not relevant when it comes to finding food for your child. A good mother will try to find food for their children... **Aduko's HCp3 Akele, M**

Akele appears to suggest that food must fill the stomach and since meat did not have that nature in this context, it could not be regarded as food. Besides Akele's submission also support the community's view of meat which will be discussed later. The community members appear to believe that not all-edible substances are food. The response of Lamisi in Yuuringa's household during a conversation with her illuminates this:

'MK: *but is meat not also food?*

Lamisi: *only meat does not fill one's tummy.*

MK: *Are you suggesting that something is food only if it fills the tummy?*

Lamisi: *yes, if you eat meat will you be satisfied? You need food to make you satisfied. Unless you want a whole goat to yourself (laughing):* **Yuuringa's HCp2 Lamisi M**

Even though, the findings here generally signpost what the community considers as food, it also signifies how food is classified in this community, which the next section presents.

8.2.3.1. The Community's food groupings

Classification of food has been suggested as one way a community guides its members in making food decisions (Helman, 2001). In the study community, the classification of food appears to be mainly guided by the physical property of food substance to satisfy hunger. During the fieldwork, main categories emerged from the participants' descriptions of food, and what they were observed to offer children. These categories are identified in this thesis as 'satisfying foods', accompaniments' and treats. Satisfying food was made from bulky substances, mainly legumes, cereals, and grains, whilst food accompaniments were found to be those made of low volume food substances such as vegetables, fruits and meat, poultry, fish and seasonings like salt and stock cubes. Treats were also viewed as foods that are given to indulge children. A list of food sources found in the community is in Table 8.1.

Through observation, it was noted that households had more animal sources of food such as cattle, sheep, goats, pigs, donkeys, and a variety of domestic birds than they had plant food sources. Figure 8.1 depicts a common scene of birds and cattle observed in the community during the fieldwork. Indeed, one participant reported that the community was one of the leading suppliers of free-range guinea fowl and other animals like cattle to the rest of Ghana. In an interview, with one Tampugre, a grandfather, he stated that the community had more cattle in the village than observed and reported:

MK: *but, I have observed that there are many cattle in this your community?*

Tampugre: *oh, as for cattle, this community we are not lazy, most of my colleagues have their cattle in the forest being taken care of by the Fulani herdsmen.* **Tampugre's household; Tampugre, GF**

Table 8.1: Category of foods in children's diets

Food components	Satisfying	Accompaniments	Treats	Home-grown	Foreign
Millet	√	X	X	√	x
Corn	X	X	X	√	x
Rice	√	x	y	√	x
Guinea corn	√	X	X	√	x
Beans	√	X	X	√	x
Dawadawa	x	√	x	√	x
Kenaf leaves	x	√	X	√	x
Dry okra	√	√	X	√	x
Tomatoes	x	x	X	√	x
Dry baobab leaves	x	√	X	√	x
anchovies powder	x	√	x	x	√
Salt petre	x	√	Y	x	√
Salt	x	√	Y	x	√
Oil	x	√	Y	x	√
Groundnut	√	√	X	√	x
Yams	√	X	√	x	√
Noodles	√	X	√	x	√
Palm nuts	x	√	√	x	√
Oranges	x	x	√	x	√
Plantain	√	√	√	x	√
Bambara beans	√	x	√	√	x

Key to category of community foods:

√= included

X=excluded

Figure 8.1: scene of animal sources of food in community



Plant food sources in the community included cereals, legumes, and grains, dry kenaf, baobab leaves, and dry okra. Throughout the fieldwork two fresh vegetables namely, tomatoes and okra were observed being used in cooking in two households. However, participants reported that fresh vegetables such as alefu, garden eggs, cabbages and aubergines, different varieties of pumpkins, pumpkin leaves, kenaf leaves, okra and okra leaves were available during the farming season. Some participants reported that even though there was no fresh plant produce in the households, this was present in the market for sale. Figure 8.2 shows plant food sources that were reported in the community and vegetable being sold at the nearest community market. Participants lamented the fact that many households relied on fresh vegetables from the market during the dry season and these were unaffordable.

Participants also reported that the fresh vegetables in the markets were cultivated using irrigation with hand-dug wells, and so only a few men with farmlands in valleys could farm these crops. This appeared to be the reason limited fresh food was seen during the fieldwork. Nonetheless, there was an equally limited variety of dried foods. There were no dried versions of most of the fresh foods participants mentioned. Cost may not be the only reason for the limited quantity of plant food sources observed during the fieldwork. It appeared that there was a challenge in processing and storing foodstuffs in the community.

Sun drying appeared to be the only method of preserving food locally. Thus, the different varieties of plant food sources that were reportedly cultivated in the community were not available in the dry season. Participant suggested that they had traditionally not dried some of such foods like cabbages, and did not think it was possible to do so:

Since I was born, I have never seen anybody drying pumpkin or cabbage, may be just the pumpkin leaves. What we know is drying bito (kenaf leaves) and okro and those other ones, you know. **Aduko household, cp4 Aminatu, GM**

Figure 8.2: Vegetables on display at the nearest community market



These findings suggest that children may be fed from limited variety of food during the dry season (August to May), which is the longest season in northern Ghana.

The variety of sources such as vegetables, fruit, meat, fish, eggs, cereals, legumes, and grains in the community suggests most of the food groups including proteins, carbohydrates, vitamins, and minerals are available for children. However, children's diets appear not to contain all these foods because of the various factors that impact the diet of children.

The third category of food, treats was described as anything edible but not necessarily satisfying, nor an accompaniment. Foods within this category are considered and used to coax children:

You were asking about oranges, are those foods? When I go to market and I have money sometimes, I buy them for Nima, but with this, our poverty will we use money to buy such things for children? Sometimes, Nima disturbs for those things, but when you have the habit of buying such, the children also get used to them and worry you even when you do not have money.

Ababa's HCp1B, Lari, M

Madam, those things when the child is crying and you can afford, then you get those ones and give to them, but we cannot just buy such things for children. Biscuits like this, sometimes when I have money I buy for Magede. But you will not encourage that. The other day, when I went to the

market, I saw banana and when they mentioned the price, I walked away. The money for a few fingers could buy half a bowl of millet. Therefore, I do not dwell on those things. I make sure I find money to buy food. As for that, I try. **Aduko HCp4 Sophia, M**

In addition to biscuits, bananas, and oranges mentioned by Lari and Memu common foods that were suggested as treats were roasted groundnuts, millet, and bean cakes. Vegetables and fruits such as tomatoes, melons, lettuces, cabbages, and peppers were also described as treats. Participants reported that small amounts of these items might be given to children when available but not as food.

Food was also classified home-grown and foreign. Some participants believed that regular food for members of the study community should originate and be cultivated in the community or more generally the north of Ghana. Food products regarded as foreign were those not cultivated within the area specified. Some participants like Azure in the excerpt below did not trust foreign food to meet nutrients needs of children:

Rice like this is not our food. When we were children, rice was occasionally eaten. Me like this, when I eat rice, within a short period, I am hungry. So are children. These foods that they now bring to our communities are just not the best, but you see all these women giving children all kinds of strange foods and when the children develop diarrhoea, they will be running everywhere.

Amisah's HCp1 Azure, F

Azure and other participants disapproved of feeding children with foods that were considered as foreign, especially on regular bases. Azure and his wife disagreed on whether it was proper for children to eat rice, which is considered a foreign food. While he considered that foreign foods like rice could result in ill health and result in hunger. Other participants appear to suggest that such food could be given to children as treats but not as regular meals:

As for those foods, if occasionally people eat these foods, it is okay, but to make them our foods, which should not be the case. During Christmas and the harvest feast, we can eat anything we want. As it is our children these days do not even like our foods. Before we know our food will no more be cultivated. **Tampugre's H Tampugre, GF**

Foreign food included yams, kontonmire (cocoyam leaf), cassava and plantain, cultivated mostly in the southern part of Ghana. Kenaf leaves, dry okra, millet and millet food, sweet potatoes, groundnuts and beans among others, were considered home-grown. There seemed to be consensus on which foods fell into these two categories apart from one instance of disagreement on whether some foods were home grown or foreign. Most participants advocated the giving of home-grown food to children. It appears the preference for home grown food was about protecting the community's cultural identity expressed through its cuisine. This could mean that some foods were not offered to children although these foods may otherwise meet the community's priority to achieving satiety. The next section is a presentation of the commonly stocked food sources in children's diet.

Figure 8.3: Varieties of plant sources of food



8.3.3.1. The content of Children's diet

The content of a child's diet was related to the community's understanding of nutrition. The concepts from participants response to what is food?" included edible substances that provided energy made one satisfied and provided one with blood among other things. It was observed that a child's diet consisted generally of plant-based food mainly grown within the community. Examples of a child's diets content included dry kenaf leaves, millet, guinea corn, maize, groundnuts and rice also contained cowpeas and Bambara beans. However, some foods such as cowpeas and Bambara beans were not widely supported in a child's diet. The exchange with Azure is a typical example of the position of most participants on children eating cowpeas and Bambara beans:

***MK:** This is important. Even though I have heard of this description of foods, I have not clearly understood it.*

***Azure:** you see these foods like Bambara steamed cakes, beans, they say, the water in your body alone, cannot make them work, as these should in your body. So there must be water added into your system, so that those foods can be milled*

***MK:** So can't those foods be given to children?*

***Azure:** You see, the child's throat is narrow and not matured enough to swallow such foods. Besides, the child cannot drink adequate water to be able to digest those foods. As I said earlier, these foods require a lot of water to be milled in the abdomen.*

***MK:** But you do not usually swallow it like that, you chew before...?*

***Azure:** That even makes it improper for children. This child has not got such teeth to chew these foods. Even in his stomach, that food cannot work. This is because his stomach does not have those things your stomach has to do the work.*

Some participants believed that such foods were dry and not appropriate for children, as their stomachs may not be able to digest them. Others believed that children usually developed stomach upsets after eating such foods.

8.3.2 The symbolism of household food and children's feeding

The symbolic meaning of food for groups and individuals exists alongside a more literal understanding (Helman, 2001). In this study, a number of symbolic food connotations emerged namely: food as a symbol of the community's valued cultural patterns; social constructions such as wealth; mystic associations and food as a way of signifying a household's identity. These figurative meanings of food influenced the varieties of food the study community considered suitable for children.

8.1.3.2. Symbol of wealth and Social Status signifier

Wealth was found to be a significant factor in the food culture of this community. Some food products appeared to be linked with household wealth and asset status. Animal sources of food including poultry, meat and fish products, and the foreign food category such as rice, fufu, yams, cocoyam among others, were viewed as foods for the wealthy in the community. This symbolic representation of food seemed to influence the content of a child's diet. Firstly, it was observed that as a way of preserving families' prestige as wealthy, such families kept large numbers of

animals. Take for instance the responses of Tampugre and Anaba excerpts when they were asked why they seemed to keep a lot of animals and complained about lack of money:

Is it wrong to keep animals? If a grown up man like me does not have cattle in my shed won't I be a laughing stock? I should show that my life was worth living before I die and go to my ancestors. If my children decide to waste the animals, I will not be there to share the disgrace. After all, it will no more be my house. However, for now, my peers must see me as worthy of respect. I am not rich like others, but at least I will not be an object of shame in this community. I try to take care of my animals and when I get money, I buy more. **Tampugre's HCP1Tampugre, GF**

Are you suggesting that we should be cooking meat every day like food? My daughter, this is not possible, if we were doing that there would not be any animal left in this community and we will be laughed at. You see that my brother, who came the other day when you were here, because of such behaviour, there is nothing in his animals shed. That is disgraceful. As for a man you should be able to keep a few animals in your shed no matter how needy you are, at least, you are not disabled. **Anaba' HCp1 Anaba, GF**

The accounts of these two participants underscored the symbolic value of animals to the community. Tampugre's statements indirectly suggest that animals are not only a symbol of wealth but also capital. This and related cultural ideals ultimately prevents animals from either being prepared as food or sold and the proceeds used to purchase food for children.

It was also suggested that poorer households were not expected to consume foods deemed expensive. In order to maintain this social norm and avoid being criticised as being pretentious, people avoid including such food sources in the diet of children. The responses of Pugkuti in on the issue of what the community thinks about eating meat demonstrates the norm that poorer households should not be seen eating meat:

You see, when you do that (eat meat) what will people think? especially if you do not have enough resources and do that, and you encounter some problem or the next day you are looking for even food to eat and you do not get, that is when people always talk about you. If for instance, you will get to eat both food and meat all the time, no one will talk about you. However, if you get and eat meat today and tomorrow (sigh hmm! and Pause). You understand. **Yuuringa's H, Pugkuti M**

Animals are a sign of prestige, and the number of animals a household owns shows its status. Every household endeavoured to possess some animals to demonstrate their wealth. However, animals are also a main source of income for meeting household expenses for food especially during the lean seasons when there are no foodstuffs in most households:

We sell the fowls and rather buy ingredients like dawadawa, Amani (smoked fingerlings), salt and other things and not just to slaughter a fowl for soup **Aduko's HCp4 Aminatu GM**

You know this our community, it will be hard to catch a fowl and cook. We believe that instead of cooking the fowl, it is better that you sell it, buy some fish fingerlings and then use the rest to buy panty (underwear) and come and wear the children. **Yuureinga's HCp1B, Pugkuti, M**

MK: *But a lot of you rear animals?*

Lamisi: *As for the rearing, we do. There are those who will rear, the animals will survive, and those who will rear and everything will die. Again, you may have to sell some of those animals and buy foodstuff for the family when times are hard.*

MK: *But why can't you also kill some and use to cook?*

Lamis: *(laughing) If you kill some and eat and your foodstuffs finish and you want to go and buy some, where will you get the money again, that is why you should rather not kill and eat.*

It appears while women were inclined to sell animals to provide food, men were more hesitant. As seen in the excerpts, grandfathers who are also household heads appeared to be reluctant to use animals for food, whilst women (grandmothers and mothers) appeared willing to sell their animals to buy food. It also appeared that whilst there were joint household resources, there may also have individually owned resources. For instance, it appeared that women and children could own a few personally reared animals. It seemed that individuals might have some independence to use these animals if that corresponded with the community's norms. This suggests that children's access to animal food sources may be affected by families' willingness to use their animals for food or to sell them to make money to buy food.

8.2.3.2. The sociocultural role of meat and animal products

In addition to using animals as a signifier of social status in the community, meat and animal food sources had other sociocultural meaning and functions in the study community. This conflicted with the use of meat as food. Animal sources of food were reportedly used for important spiritual and social responsibilities. For instance, in one household with many fowls and goats, members complained of the lack of resources to produce food. When some participants in this household were asked why they would not use the animals for food, a father laughed and remarked that if they sold or ate the animals and there was an occasion when it was necessary to sacrifice an animal for their ancestors they might not have the ability to do so:

MK: *I have learnt that children should not be given meat, eggs, fish and other things. Why is this so?*

Nsorbilla: *There is no way a child, like Cissy should eat the flesh of the animal cooked. Not all... You see, I like this, I don't have fowls, so the little I get, if I give it to children to eat, I am a good parent. Today like this, if I visit a diviner and my ancestors request a sacrifice, will it not be disgraceful that I am not able to provide on my own. You need to check yourself (assess oneself) as a human being before you do certain things* **Akongo's HCp1Nsorbila, F**

Sacrifice of animals is part of the ritual in ancestral and deity worship (Goldman, 1993). Animals were reportedly used routinely as worship goods or during funerals. Sacrificing animals appears to be one of the most important practices in ancestral worship. Consequently, this may place the use of animals for ancestral worship above using animals for food or selling them to purchase food for children. This is reinforced by the other beliefs associated with meat eating. The evidence in Nsorbilla's response resonates in Lari's statement in which she indicates that the fowls loitering in their household belonged to her husband, who planned to use them to 'search his way:

My husband has a few among those you can see, but he uses them to "search his ways". You know these men, they go here and there to consult a diviner and they need the fowls, so if you attempt to kill an animal you will have problems with my husband. Anaba' HCp1Lari M

'Searching one's way' was explained by one diviner to be when an individual consulted diviners to discover the spiritual happenings in the individuals' life that the naked eye could not see. In such instances, the animals represented consultation fees or were sacrificed for the god or deity of the individual who needed the information about their life:

MK: *At the naming ceremony does the ancestor determine what the child should eat or not eat?*

Diviner: *What happens is that my first son, first and second daughters do not eat fowl because we swear by it. If I die today they would have to kill a goat and a sheep to accompany my burial that I should collect and get to my father. If my father did not consult would he know all these things? If you sacrifice the animal to the children's deity is that not good you seeking, ok, that is it*

MK: *Why it is that the elder son and daughters forbid the fowl?*

Diviner: *It is because we swear by it (that means it is their totem) and there comes a time when we will brew pito to sacrifice to the ancestors for those things but because these girls now go to school and things have changed, and when you are eating meat and your children are looking, it becomes another issue.*

Nsorbilla's comment during an interview further highlights the role of animals for practices other than providing food:

I do not even have any (fowls?) my small boy has one. He bought it after the harvesting season when he made money from farm labour, but even his mother begged for it and he refused. You know my wife recently went to her father's house and they told her that her god needs a fowl from her and she could not afford. Therefore, you see, if you have fowls will you use them to spoil children and you could keep for days like this when you most need them

Akongo'sHCp1Nsorbila, F

8.3.3.2. Transmission of culture

One other symbolic value of food that emerged was the desire of community members to use home-grown foods as a means of handing on their culture to future generations. Male participants were particularly concerned about the loss of the community's feeding traditions if children were not fed on home-grown food. Some participants appeared to advocate the giving of home-grown food to children as a social rule. Anaba thinks that it is inappropriate for individuals to unilaterally make food choices, which were contrary to the community food norms:

You see, what I said the other day, the system is a spoilt, why should the eating of meat matter so much? Meat is nothing. Our concern should be what will satisfy a child. Because all these talks the children do not even like our indigenous foods, which are healthier. Me like this when I travel to the south to do my cattle business, I eat TZ and I let the southerners know that is my hometown food. Some of them even admire me. They ask if that is what makes me look healthy? Yet, look at the things you people have brought, these are sickness and confusing to the children. They do not even know the difference between our food and other food. Write and tell our children that TZ, guinea corn, kenaf leaves, beans and millet cakes, those are our food. Rice is nothing, as for corn TZ. Ask my wife if they prepare it here, they will have me to reckon with. I cultivate corn to sell and we can roast it and eat but not for TZ. According to my father those days, there were rules, and these women could not go about giving anything to children that the community did not like, but now, you women are even stronger. Anaba' HCp1 Anaba, GF

Other participants shared Anaba's sentiments. It appears they did not completely reject food from elsewhere. However, to them, it was more fitting to feed children with home-grown food as that also taught the children their traditions with regard to food:

You see, the rice is not our home-grown food... You see ehn, (hesitant) sister when you feed children their father's foods (food from their community) they grow to know their roots. **Amisah's HCp1Amisah, F**

These participants believed that by consuming food grown from their own community, they demonstrated being true to their ancestry. Some participants reasoned that by consuming their own community grown food products, they preserved the culture of their agricultural lineage and the benefits that went with it. With hints of apprehension, some participants lamented that they were certain that in years to come, the community members would not farm guinea corn, which was one of the main grains cultivated by the community:

As for those foods, if occasionally people eat these foods, it is okay, but to make them our foods, which should not be the case. During Christmas and the harvest feast, we can eat anything we want. As it is our children these days do not even like our foods. Before we know, our food will no more be cultivated. **Tampugre's H; Tampugre, GF**

A participant reported that she had observed that their children did not generally like TZ made from guinea corn because it appeared red and unappealing, even though the guinea corn and millet TZ, in particular, were heavier than TZ from maize:

Nsorbilla: *...Even now, the children do not like guinea corn TZ, it is always force and hunger. Why?!*

MK: *You also indicated earlier that newly born children would usually be given guinea corn water and herbs. What do those two do for the child?*

Nsorbilla: *Those things give the child blood and if any disease attacks the child, it is unable to survive. As you can see me as I am, I have never been to the hospital. If not now that these diseases have also entered me. I am strong.* **Akongo's household, cp1Nsorbila, F**

Indeed, as suggested by Tampugre, most of the participants appeared to criticise health professionals for recommending foods that were foreign. The findings showed that some participants had a goal to promote the consumption of the community's local food. This implied that these individuals were less likely to support the inclusion of foreign foods into a child's diets. Though these responses show that some participants may influence the choice of a child's food, it was not observed that participants prevented a child from being fed foreign foods. However considering that men are the primary providers of food and the advocates of home-grown food, it is reasonable to suggest that they may not willingly provide foreign foods. Beyond the symbolism of food and the use of food as a means of transmitting culture, religion also emerged as an all-round influence on child feeding, and this is reported in the next section.

8.3.3 Religious beliefs, Customs, and traditional practices

Religion was a central influence on child feeding. Observations and discussions with participants demonstrated that traditional practices, norms, and values related to child feeding appeared to originate from the local spiritual belief system of the community. Though Christianity, Islam and African traditional religion existed, all participants' reports linked child feeding practices with the African traditional religion. A few reports also indicated Islam and Christian beliefs on the influenced food restrictions. Participants' reports show that community life, including child feeding, was organised around fulfilling spiritual and cultural obligations. These spiritual and cultural obligations were evident in customs and traditions such as the initial child feeding ritual, sexual abstinence during breastfeeding, and specific food beliefs and taboos.

8.1.3.3. New-borns pre-breastfeeding fluids initial oral intake rituals

One practice that was widely reported by most participants was the ritual of initiating every new born child to a fluid before they were allowed to breastfeed or consume anything else orally. In response to a question on what a child may be fed right after birth, most participants reported that new-borns were given fluids such as soaked guinea corn fluid, brewed tree roots, bark and herbs, millet or guinea corn flour water or plain water. Most participants simply suggested these fluids were given as a welcome and introductory rite:

When a newborn is received and take it into the room, they will soak some herbs and drop some in the mouth of the child, when they do that because the doctor people say we should not be giving water, they just leave it there. This is because the herbs are our ancestral thing and we have to do it. **Yuureinga's HCp2 Lamisi, M**

As you have asked ehn, in this our community the tradition is that if a child is newly born, they will look for guinea corn, soak it in water and use the liquid to force-feed it. They will then go and harvest the root of plants, boil and use it to force feed you the baby and use it to bath the child. When they do that the baby will lie quietly and sleep soundly. They will do that until the child reaches the time they are able to eat. **Akongo's HCp1Nsorbila, F**

When a child is born in the traditional home, they soak the red guinea corn in water and strain the water for the child to drink. In other homes, they make an old lady to go for some herbs for both mother and child to drink and bath **Ayeta's HCp1 Asi, M**

The responses show that a child must take in a culturally determined concoction before being allowed to consume other forms of nutritious substance such as breast milk and complementary food. The responses also suggested that this was largely a symbolic cultural practice rather than a nutritional one. Take the response of Aminatu for instance:

It is the practice of the house. The household head will tell you upon your delivery what initial fluids you should give to the child. They will tell you each child's destiny... if the man goes to the diviner and comes to say that this was the destiny of the child you will have to do as such. **Aduko's HCp4 Aminatu GM**

It also appeared that the newborn child's initial fluid intake could be accompanied by some other spiritual activity such as sacrificing animals and preparing food for a god or deity. In responding to

questions about the initial oral intake, these excerpts from Lamasi's and Abonu's interviews shed some light on the role of libation with or without animal sacrifice:

MK: *I understand that when you have a newborn they consult a diviner who may determine what food the child will eat?*

Lamisi: *There are some, who may go because the child's temperature is high and there may be the need for them to pour libation.*

MK: *But I also understand that even when the newborn children are not sick, they still consult diviners. What about that also?*

Lamisi: *Is it about the herbs we give them? Ok, you see there are those who may go and buy the herbs from sellers and there are those who may be directed by the diviners to dig up a particular root.* **Yuureinga's HCp2 Lamisi M**

MK: *Could you explain to me the nature of the consultation process?*

Abonu: *I am not able to do that.*

MK: *Does the diviner usually come to the household?*

Abonu: *No, a member of the household goes to the diviner in this house. Normally the men or a man will go in search of information about the new-born and will then come and tell the women that the child should be named after an ancestor or deity. But we women do not usually go with them. They will then name the child and state the food restriction of the child.*

MK: *So when they name the child, do they also give the child anything?*

Abonu: *No, not like that. For some children, they pour libation, but for some, they just come and announce the name and what the child taboos* **Aduko's HCp2, Abonu GM**

Libation, as suggested by Anuga, involves sacrificing animals to the ancestors:

Anuga: Eggs, meat, as for me, if not that I have performed libation ritual, and sacrificed a fowl, then I give them pieces of meat, would I go and buy meat for them... **Nugeba's H, Anuga F**

Furthermore, as reported by ASI in the excerpt from Ayeta's household, it was senior persons in households who normally administered the initiation fluid to the newborn child. As suggested by Abonu, whether this initiation process involved the pouring of libation or administering just the fluid to the child depended on a household's traditional practice. From the statement of Lamisi; *'it is our ancestral thing'* it appears that the main import of this rite is to determine the child's place in the world, usher the child into the world of eating and uphold households' tradition:

Diviner trainee: *So what did you say, you were interested in?*

MK: *I want to know all about your involvement in how children are fed from birth.*

Diviner trainee: *If a child is born, they will use guinea corn put it into water for the child to drink. It means that the child is being welcomed into the house as a new member of the family and afterwards an elder from the house goes to the diviner or soothsayer. The difference is that the diviner can reveal what the ancestors wants us to do and can also treat the sick. However, the soothsayer can only reveal the intentions of the ancestor to the living. So if a child is born you go the soothsayer for him to tell us who is the child, whether or not the child wants to be called after the grand mother or father or any ancestor of the family and then on the 7th day the child is named.* **Diviner trainee**

The diviner trainee gave information that a child must have a name by the 7th day of their life. This suggests that newborn child could stay without food for up to seven days after delivery.

8.2.3.3. Sexual abstinence and breastfeeding

It was suggested that breastfeeding mothers could not have sexual relations with their husbands because breast milk could be contaminated with dirt and blood, and cause a child ill health:

As for that, I have seen a lot. Some did that and their children sucked the breast milk with blood, and the children became sick, and develop uncontrolled diarrhoea. It is always after attending hospital that it would be confirmed that the woman is pregnant and then the cause of the diarrhoea will be established and the whole community will get to know. Some women may even do that and be hiding and others may not even know that it is the cause of their child's sickness. Me for instance, when I have a child until the child starts to walk, I will not have my menses. Therefore, if you have a woman like that, when she is even pregnant, she may not know

Anaba' HCp 1 Asolmia, GM

This practice appeared to be a taboo that is seriously frowned on in the community. It was a taboo which had become an informal rule over the years to the extent that some participants questioned the morality of women having sexual relations whilst breastfeeding. Take this statement for example:

When they say this woman has given birth, you have no business doing any other thing. All your attention is on ensuring that the child is sleeping soundly. Now, they will throw the child away, tuck in the clothing like scholars (educated person), and go round doing their own things (a euphemism for sexual relations). Anyhow the landlord cannot say do not do this neither can the mother-in-law. **Tampugre's HCp 1Tampugre, GF**

This practice was considered taboo because participants suggested that when women engaged in sexual relations whilst they breastfed children, these women brought curses of sicknesses upon themselves and their children:

Most of those children will struggle like that and eventually die. That is why when you gave birth in the past, it was not right for one to start going near your husband. And people mouths too are not good and you do that and people to the words will affect you and your child. **Aduko's HCp4 Aminatu GM**

During the fieldwork, a lady who used a phrase 'people's mouth' explained that words coming from people were spirits and could result in an individual experiencing harm. Following that explanation, it appears Amanita's statement suggests that when people found out that a woman had sexual relationships whilst breastfeeding and gossiped about it, this could result in harm. Due to the perceived consequences of having sexual relationships whilst breastfeeding, and the subsequent negative attitude towards suspected mothers, some women appear to wean their children early in order to prevent the consequences.

Nonetheless, the early weaning of children appears not to have prevented this category of women from being criticised. Some participants reported that when a woman introduced food to her child early, it meant that the woman had started sexual relations or had plans to start. This appears to be perceived by the community as bad practice:

MK: *Mma, this conversation your daughter is having what do you think about it?*

Nsomah: *it is true (interrupts again: onlooker (woman)) I told Mma I want to give birth to a baby for her and she refused. : She says she did not do that (have sexual relations whilst breastfeeding) with her children so why should we do that. We will wean them early, yes! And chase after our husbands. So that we are not blamed for what happens to a child.* **Yuureinga's HCp1 Nsomah, GM**

As a result, it was reported that some mothers hide and introduce solids foods to their children. However, it appears hiding to feed a child may be difficult since child feeding generally occurs in places with many people.

8.3.3.3. Households' food beliefs, taboos and the feeding of children

Specific taboos, restrictions, and beliefs about food and child feeding were reported. Some households had taboos that were passed down from their ancestors, whilst others reported that diviners prescribed some taboos, which influenced what foods individuals, whether children or adults could not eat:

I have encountered people whose children taboo things like the early and the late millet. You might make an attempt to share food you have with some children and their mothers will tell you that the children taboo such foods. Moreover, when you ask why they prevent children from eating such foods their mothers will tell you that it is from the diviners or an existing family taboo. That the child should not eat sometime of food. **Yuuringa's H, Pugkuti M**

Specific food restrictions may disallow a child to breast feed or consume foods including a variety of grain, vegetables and specific animal's sources of food.

It may be what the child or their mother is not supposed to eat ...There are children that may taboo guinea corn, meat, and even hospital medicine. **Akongo's HCp2, Dukopoma, M**

These restrictions could be recent prescriptions or may have existed over the years for specific age groups or genders in a household. A father reported that first-born children in their household did not eat the local guinea fowl and so his 8-month old child, who was the first-born, would never taste guinea fowl meat:

In this my house the first-born taboos guinea fowl, so as you see this child; she will not eat fowl meat. I do not want to look for any trouble **Asore's HCp, Asore F**

Participants also reported that a diviner might receive a message from the deity or ancestor of a child to announce that a child could not eat some types of food:

Recently, I was with some women and one of them mistakenly started to eat guinea corn TZ and then restored and said her child taboos guinea corn so since she was breastfeeding she could not eat guinea corn, I asked her how she knew that and she told me that her husband consulted the diviner and returned with such news. My husband does not even know the diviners' houses; so how will he be able to know what my children may taboo. **Abakule's H, Abena M**

8.4.3.3. Beliefs of child eating animal products

Interpretations and restrictions related to children eating animal sources of food were extensive. Meat was generally not part of the everyday diet of children. There were consistent reports from respondents that it was inadvisable to feed children animal based foods including eggs, poultry, fish or beef.

MK: *Does that mean that if you were rich, you would be giving him meat daily?*

Akele: *No, I will not give him meat daily, you can go somewhere with the child and he could see even an adult eating and he will go there and you may think it is hunger but is because of the meat and that is not good. How can one just kill fowl for a child to be eating?* **Aduko's H, Akele, M**

Oh! As for those, you do not give to children. A few days ago, my sister in law came home, and they had killed a fowl and I cooked it. When I gave some to T, my sister in-law exclaimed and told me that children do not eat meat and that if I give the child meat, her teeth will not erupt. **Abaa's H, Samara, M**

When asked about the source of the community's norms in relation to the feeding of animal products to children most respondents reported that they were based on long standing community traditions:

My parents..., my mother and co usually discuss that. They say if children are exposed to meat it will predispose them to steal some if they see it because it is tasty and besides when you give meat people will start to discuss you that you are a bad woman. **Aduko's H, Sofia, M**

Even though it appeared that the restrictions on meat were similar to other foods the absence of meat in the diet was more pronounced. One may associate this absence of animal food sources in children's diets with the importance of animals as signifiers of high social status, wealth and with the role of animals as capital assets. However, the reports of participants also suggest that perhaps the more powerful factor is the belief that there is a direct connection between eating animal sources of food were associated with a range of unwanted physical and social consequences. For instance, Samara's response suggested that meat and eggs are associated with the non-eruption of teeth in toddlers. Samara reported that she believed the latter because the sources of the information were experienced adults who were well-informed. She reported that she had been reprimanded for doubting the adults:

Eh, why I take it is that they have probably experienced that before that is why they are telling me, so I have to comply. Sometimes, when I doubt the information and I ask them, they tell me that during their time, they do not ask questions, but because we (my generation) are disrespectful, that is why I am always probing them. So when they say that, what I will do, you just comply with their information. This is because; it makes me feel bad that I am not a good person. And when a grown up tells you this, it means a lot. **Abaa's H, Samara, M**

Aminatu outlined possible consequence of giving children meat to include ill health when she was asked why she believed meat was unsuitable for children:

You see, it is actually not good to give children these things. In our frafra tradition, when you give children eggs, forget about those who do not have and may not give it frequently. However, for those who can afford and may give the children eggs frequently, when this happens the child may develop a sickness in which the whole anus will prolapse and appear reddish. It is because of these sicknesses that it is not good to give babies eggs. In addition, the meat too, you know the stomach of children is not strong. Even me who am an adult can eat fresh meat and develop severe abdominal problems and some of them may even develop diarrhoea. But the reason why here we do not accept that children be given meat is that their stomachs are not matured and when they are given especially fresh meat, it creates a sore in the stomachs of the children and they even ran diarrhoea which is sometimes untreatable. **Aduko's household Aminatu GM**

Amanita's suggestion, which conveys the suggestions of other participants, was that meat results in prolapsed rectum and anal sores in childhood. It was also explained that children had immature abdomens, and therefore inability to process meat leading to diarrhoea.

Meat was also reported to be associated with the development of anti-social behaviour during childhood, which could persist into adulthood. Some participants reported that meat made children develop a 'sweet mouth' (taste for flavoured food), resulting in them stealing meat, crying out for meat and developing the habit of stealing money to buy sweets. Other participants also reported that when children were given meat in childhood, they actually developed the habit of stealing and engaging in other antisocial behaviours in later life:

It is the tongue. As their mouths become sweet, what happens? You know, once it gets used to a particular thing it is difficult to do without it. That brings the stealing. Can't you see our world today? The indulgence is the problem. Akongo's HCp1Nsorbila, F

Meanwhile, according to some participants children might be allowed to have a taste of meat, but would not be allowed to eat a lot of it. It appears that the restrictions on children eating meat are strictest with children below the age of two.

This has to do with how frequent the child is given meat. If a child like this one is given meat, only when you perform a religious ritual, and kill a fowl, that cannot make the child a bad child or sick. However, if every day you stretch your hand to a child with meat that child will obviously go wayward and you the parent will also suffer if the child is sick. As for babies, they have no business with meat. What do they need it for? Will it satisfy them? Akongo's HCp1Nsorbila, F

When Nsorbilla spoke to me, he pointed to one of the children who was about one and a half years old and commented that such a child should not be allowed to taste meat at all whilst indicating that an older child, who was about three years could be allowed to taste meat. However, when this participant was asked to explain the reasons for his stance, he simply said it was unreasonable to give younger children meat.

8.4. Health professionals' information (HPI) on child feeding

The second main type of child feeding information that emerged from the data was received from health professionals. During interviews, when participants were asked to recount what and how they fed their children, they mentioned information, which was in line with information in health education and Ghana health service policy documents on child feeding. Participants reported knowledge of food that they gave, or were expected to give, to children:

Well when she was born, until she was six months old she was fed on only breastfeeding milk? Then, I started giving her water up to 7 months. She could not drink water properly then I introduced her to soft meals like porridge by 8 months. Anytime, I give her the porridge, she would just take a bit and refuse to take, I gradually started to feed her soft foods like boiled mashed beans, okro stew, rice balls up to when she was 10 months then she refused to eat all these foods. Now she is one and half year and she still does not like to eat. I, therefore, resort to feeding her frequently. Since she does not like eating I try to give her variety of foods. I especially give her mashed beans and palm oil. But when she eats one food for about 3 days, she would not like to eat it again, that is

why I keep changing what I give to her. I try to do what the nurses tell us when we go the clinic. The nurses do very well. They tell us a lot of things we can do.

Some participants actually reported having received child feeding information from health workers:

*The beans and others, ok, anytime we go for immunizations they also tell us what food we should give to the children. They always tell us that they know there is poverty, but when we manage to get beans, and rice, we would cook and add spaghetti and make it nice for the children. They say when we do this; the children will increase in weight. **Akongo's HCP, Apoka M,***

A few participants reported their feeding practices were not informed by this information because of the cost of procuring the various foods, and also having to grapple with conflicting advice or instructions delivered by the health care professionals and their community ideas. This is evident in Apoka's response above and that of Adoleba:

*As for her, she mostly sucks and it is not on daily bases that I cook for her. Madam at the clinic they told me to feed her many, many times, but as she sucks and she does not disturb, I don't worry about her. They all eat well and last time we went for weighing they said her weight was good. **Tampugre's household Adoleba, M***

8.5. Summary

This chapter outlined the discourses of child feeding in the community and how such narratives emerged. The chapter has shown that even though the community members receive information from community and health professional sources, the community sources appear to dominantly influence child feeding practices. Literal and symbolic meaning of food based on the community's traditions, beliefs system and values were identified as these influences. This chapter has highlighted among many things the challenges mothers could face in using health professional information. The next chapter pulls together these findings to infer child feeding implications.

CHAPTER NINE
SYNTHESIS AND DISCUSSION

Chapter 9: Synthesis and Discussion

9.1. Overview of the chapter

In this study, I explored households' feeding practices of children under five years in rural northern Ghana, with particular reference to cultural influences. Limited specific evidence existed on this topic. This study's findings thus add to the body of knowledge on dietary practices and provide explanations of how and why these practices deviate from health guidelines in Ghana. The findings may potentially inform the development of more effective nutrition guidelines and education.

I conducted participant observations and ethnographic interviews with individuals, including mothers, fathers, and grandparents, who participate in child feeding in households. The issues explored included what food children were fed and why, how cultural, social and economic factors affected the choice of children's food and the patterns of feeding them. Three major themes emerged from analysis of the data, and are presented in chapters 6, 7 and 8. These are "the community within which children live and eat", 'discourses on child feeding' and "food insecurity complexities". In this chapter, the themes from the findings are considered together to give a sense of the community's feeding practices and their origins. The synthesis of the findings underscores how taken-for-granted elements of communal living and the underlying cultural values determine the diet and pattern of child feeding.

9.2. The taken- for-granted context of child feeding

After analysing the textual data from the fieldwork observations and interviews, I found that my original assumptions about behaviour in the community were misjudged. At the beginning of the fieldwork, the practices of child feeding appeared obvious to me. In fact, in my first field memo, I had written that the community was either irresponsible or indifferent to child nutrition. However, by the end of the fieldwork, I had a more developed sense of the meaning of child feeding to the community. After completing the fieldwork process, I learned that the community's daily activities had more meaning than they appeared to display. This is what I refer to in the title as "the taken for granted" context. For instance, poverty and variations in the access to food during different seasons were visible after a few interviews, but issues such as the impact of households' physical structures and of communal living arrangements on child feeding were not obvious until the fieldwork had advanced and relationships between these phenomena began to emerge from the data. The responses of participants indicated that they were not consciously mindful of how their daily activities affected child feeding. Considering that both I and members of the community took for granted the intricate interaction of values, beliefs, expectations and daily actions that impact on child feeding, it is possible that health workers may equally be missing an understanding of these underlying influences.

Studies in other African communities, in Ghana, Kenya, Gambia, Tanzania and Nigeria, (Appoh and Krekling, 2005; Bezner Kerr et al., 2008; Katepa-Bwalya et al., 2015; Matsuyama et al., 2013;

Sellen, 2001a), also explored household dynamics and the support social networks such as friends and families provided in child feeding. The impact of poverty and food insecurity on child feeding has also been reported (Kimani-Murage et al., 2011; Nordang et al., 2015; Hampshire et al., 2009; Matsuyama et al., 2013; Mwangome et al., 2010; Paul et al., 2011; Sellen, 2001a). However, how these factors interconnect to influence child feeding has not been extensively explored in the previous studies.

For instance, one finding from my fieldwork was that grandmothers were major influences in driving the direction of child feeding and this was consistent with the findings of other studies conducted in northern Ghana (Aborigo et al., 2012b; Awumbila, 2003). However, the chain of events that promoted grandmothers' influence on child feeding in my study and the other studies differed. I observed that it was the community's norm for mothers to accept grandmothers' recommendations. This limited mothers' independent decision making. Some mothers reported dreading the reactions of other members of the community if it was found that they acted contrary to elderly women's recommendations. Conversely, in Awumbila's study, conducted in a similar rural community but a different ethnic group in northern Ghana, mothers' need of grandmothers to care for their children when they were away was the main reason why mothers accepted and practiced grandmothers' recommendations (Awumbila, 2003). These differences between my study and Awumbila's suggest that the way factors play out locally is important and needs to be understood in the specific context. In this study, the taken-for-granted knowledge of child feeding practices and influences appeared to be embedded in the community's communal living arrangements. Additionally, the data showed a mutually dependent relationship between the communal living system and the enduring culture of the community. Communal living underscores and upholds the community's culture as the major influence on child feeding.

9.3. Communal living

What I observed and heard during the fieldwork suggested that the community's communal way of life was a primary influence on child feeding. Household's physical structure, the family systems and living arrangements, the social interactions, and childcare arrangements reflected a form of communal living.

The physical structures of households allowed easy access by community members to each other. Compounds within households had openings into each other and to the outside of the households. These were continuously open to every member of the community allowing easy movement within and across households. People moved in and out of each other's compounds and chatted about each other's issues such as child feeding without violating social norms. This easy access of community members to each other promoted constant interaction between them. There were no apparent boundaries to social interaction between members of the community. Participants' reports showed that there was respect for hierarchy based on patriarchy and age. However, this was not manifested in day-to-day interpersonal interactions. Children, mothers, fathers and grandparents

appeared to interact freely and equally with each other. Community members also commonly interacted in groups, such that two people chatting quickly became a group of people interacting. Interactions among the community members occurred around the cooking fire, under trees and household sheds. During these interactions community members shared information and opinions on beliefs and values as they carried on with their daily activities such as cooking, preparing foodstuff and eating. Based on my observations, it appeared shared community ideals on various aspects of life were promoted and learnt during these interactions. For instance, at some of these social scenes, individuals made comments about child feeding and what constituted a child's food. This appeared to facilitate the influence and uptake of the community's local cultural information. When individuals interact with their peers, they acquire, interpret, modify, retain and discard information (Wagner, 1981; Bilinski et al., 2010; Geertz, 1973; Vasilachis de Gialdino, 2009). Individuals retain information which tacitly conforms to their social norms, and forms their knowledge for behaving in a manner consistent with their culture's values (Helman, 2001; Spradley, 1979). This process appeared to be the way in which information about child feeding was constructed and shared among members of the community and which consequently influenced how mothers fed children. Participant reports also suggest that the nature of the social interactions gave community members opportunities to 'police' each other's actions and this appeared to subtly encourage community members to conform to the local practices.

Participants regarded their membership of the community as being bonded by biological ties and they described themselves as "one big family". Up to five generations of community members from the same biological ancestry lived together in households and compounds. Members of different households within the community also considered each other as sharing a common family ancestry. This sense of identity and community cohesion has been viewed as a strong factor that makes people stick to the groups' values and norms in communal living (Cialdini and Trost, 1998). This sense of belonging, embraced by the community and the opportunity to interact freely appeared to be powerful reasons why child feeding practices were dominated by the community's locally acquired knowledge.

The shared responsibility for child care and the sharing of resources, a feature of the community's living system (Abercrombie et al., 2006), were also key influences on child feeding. From discussions with participants, it appeared that there was an implied sense of reciprocal obligation towards each other in the community. This was evident in child care. During the fieldwork, it was observed that most mothers did not make overt arrangements for the care of children when they were away. However, participants indicated that children would be cared for in the absence of their parents by other community members. This norm allowed mothers to leave their children behind when they left home for social or economic duties. Through either explicit or implicit communication, they would expect their children to be fed in their absence. This practice appeared to be reinforced by the sharing of resources.

Pooling resources and the sharing of food was observed as another important influence on child feeding. Mothers, mostly living in the same household, but irrespective of their family type (nuclear or extended), pooled food resources, prepared and shared food together with their family members including children. However, resources were not treated as being in common ownership, as may happen in some politically defined communal living systems (Fiske, 1992). Food crops were observed to be stored in private spaces on either extended family or nuclear family bases, depending on the dynamics of specific households. The communal living appeared to promote the influences of child feeding in the community.

9.4. Child feeding influences

9.4.1 Culture

The observed and reported feeding practices, such as the time of introducing children to food other than breast milk, and the content of a child's diet, were influenced by the community's social and cultural ideals: the norms, beliefs, values, and traditions. These cultural elements appeared to have their origin mainly in the African traditional religion. Notable African religious experts (Olupona, 2014; Salm and Falola, 2002) have observed that there is no difference between the physical, social and spiritual life in the context of local African culture. Every aspect of life, in the indigenous African context, is derived from the religious beliefs of the people (Olupona, 2014).

Over the years, there have been concerns among some African religious scholars and indeed staunch believers in the traditional African religion that it was nearing annihilation due to the infiltration of Islam and Christianity into the African continent (Salm and Falola, 2002; Olupona, 2014; Thorpe, 1991). This is supported by the findings of a study conducted in another ethnic group in Northern Ghana (Aborigo et al., 2012b). Similarly, I expected that Christian, Muslim households and households which practiced African traditional religion would have different child feeding practices. However, African traditional religions were the more significant influence on child feeding. Individuals who had converted to Christianity and Islam still maintained some of their African religious beliefs and ordered their lives around them. A mother, who described her family as Moslem, indicated that her husband consulted a diviner when their child was born. Other participants, who professed to be Christians, also suggested that some practices such as the initial oral intake and specific food taboos which they observed originated from consulting the diviner.

Indeed, most community norms also appeared to originate from spiritual beliefs. It was established that the sources of information for practices such as not routinely giving animal sources of protein to children and mothers not breastfeeding when they resumed sexual relationships with their husbands were spiritually driven. These customs and traditions are passed down in the community from generation to generation or accessed through a spiritual leader (diviner) of the traditional African religion. This was especially true for child specific food taboos and the type of substances used in the newborn initiation ritual.

9.4.2 Decision making Hierarchy and child feeding

Decision making and leadership hierarchy impacted child feeding in the community. As details of the community's cultural knowledge became clear, the role of specific individuals, the hierarchy of decision making in the community and how they affected child feeding emerged from the data. The culture dictated roles to individuals in the community and, therefore, decision-making concerning child feeding. Decision-making roles were tied to gender, age and the expertise of individuals.

Diviners were identified as the leaders of African traditional religion, reportedly able to communicate with the gods and deities, and to receive guidance from them including that relating to child feeding. Deities and gods were believed to possess powers beyond that of humans and to be able to see beyond the physical (Tabi et al., 2006; Littleton, 1970). Diviners communicate this information to senior members of the community namely the grandfathers. The main role of grandfathers was high level decision making and the provision of leadership in households. This included consulting the diviners and obtaining information to guide the welfare of households. Child feeding information from diviners was sourced by grandfathers or their delegates routinely during the sickness of a member (s) of a household or when a child was born to ascertain the religious rituals or observances expected. The outcomes included taboos, food restrictions and use of special substances and rituals related to child feeding.

Grandfathers then communicated this information to grandmothers, who in turn communicated to mothers and enforced the implementation of such practices through monitoring and supervising mothers' child feeding activities. Grandmothers were believed to have expertise in childcare based on the experience gained from having cared for their own children. Grandmothers generally advise and supervise mothers on child feeding activities. This appeared to show a form of order in the generation, sourcing, implementation and supervision of child feeding practices. This pattern appeared to be taken for granted. Neither the community members nor I consciously recognised the pattern and its impact on child feeding. As the findings show mothers do not have the role of sourcing child feeding information.

9.5. Mother's place in child feeding decisions

Child feeding has been widely reported as the primary responsibility of mothers (Pelto and Armar-Klemesu, 2011; Aubel et al., 2004b; Hampshire et al., 2009; Awumbila, 2003; Thairu et al., 2005). In rural Ghana, the traditional role of mothers in households is domestic work and care of other members of the family, including children (Salm and Falola, 2002). This appears to be a reason why professionals advising on childhood nutrition, typically target mothers (Aubel et al., 2004b; GHS, 2013) and scarcely ever include other relations of children. In Ghana, mothers receive child health and nutrition information, mainly through child growth monitoring and welfare clinic visits (GHS, 2009). This means that in Ghanaian households, mothers are potentially the most well informed members of communities regarding public health advice on child nutrition.

In this study, mothers were observed to undertake food preparation and child feeding in the community. However, mothers did not have total autonomy in choosing the food a child may eat or the way a child may be fed, particularly if they wished to depart from household and community norms. The restrictions of meat in a child's diet and food taboos, such as not eating millet or groundnut (peanut) based foods, were not within the mothers' power to change. This was conveyed to mothers more or less as instruction and prevented them from using dietary advice received from health professionals. Some mothers seemed to accept all the sources (health professionals and the community) of child feeding advice. However, others suggested they did not wish to feed their child in ways approved by the community members. Nonetheless, it was observed that most mothers' lacked autonomy and children were mainly fed in line with the community's cultural recommendations.

Some previous studies (Aubel et al., 2004a; Awumbila, 2003; Bezner Kerr et al., 2008; Mwangome et al., 2010; Mwaseba and Kaarhus, 2015), conducted in similar settings to my study, also highlighted the inability of mothers to make independent decisions about the choice of food and patterns of child feeding. Mothers could be prevented from making independent decisions regarding child feeding because other members of their community, such as fathers and grandmothers, perceived them to be inexperienced in childcare matters (Aubel et al., 2004b). Similarly, in cultures, like Senegal and Tanzania, mothers did not have the same level of control over their biological children as other members of the family, such as grandmothers (Aubel et al., 2004b; Leshabari et al., 2006). Several factors emerged in my research that suggested mothers did not have autonomous control over child feeding decisions. Mothers are socialised to behave in ways that demonstrate that they were goodwives (Mwangome et al., 2010; Mwaseba and Kaarhus, 2015). It appears that this community also valued the activities mothers conducted to appear as good wives. Consequently, mothers spent most of their time carrying out such activities, and this prevented them from having time to adequately feed children.

Mothers appeared uneasy when they were being interviewed about their limited ability to take decisions on the feeding of their children. They referred to the position of diviners, grandfathers, and grandmothers as the main players, and suggested that the consequences of non-compliance made them comply with some of the community child feeding practices. Participants' reports suggested that the elderly, such as grandfathers, grandmothers' and spiritual leaders like the diviners, shared to some extent the perceived powers of the supernatural beings (gods and deities) of the African traditional religions. Therefore they were venerated in a similar fashion and disregarding their recommendations could have negative consequences. It is believed that negative experiences, such as ill-health, and even death, may be punishment from supreme beings (Tabi et al., 2006) and in Ghana, this is particularly important, as most aspects of life, especially in rural settings, are ordered around religion. This significantly impacted mothers' decisions to follow the local community practices for fear of invoking these consequences.

Another factor that appeared to contribute to mothers' acceptance of the practices originating from diviners and grandparents, is the value of respect for older people in the Ghanaian context (Cultures and Countries, 2016). Reverence in the Ghanaian context appears to be linked with loyalty and some form of absolute obedience (Karlberg, 2003; Commisceo-global, 2016). This norm of obedience was consistent with participant reports, which suggested that community members unquestionably agreed with the directives of the elderly to avoid being judged as impolite. This impacted what and how mothers could feed children.

In my study, as in the published literature (Hampshire et al., 2009; Paul et al., 2011; GSS et al., 2016; Gyampoh et al., 2013b), the child nutrition advice mothers receive from health professionals appears to conflict with community beliefs. Medical anthropologists have long noted that a culturally related perspective on food and feeding may contradict nutrition science (Helman, 2001; Winkelman, 2008) and child feeding may not follow public health recommended practices. The key public health purpose for child feeding is to promote growth, development and provide energy for daily activity through the appropriate intake of nutrients (Rao and Beckingham, 2013; Engle et al., 1999; Norgan et al., 2012). Food included in a child's diet should, therefore, be based on the required nutrients, and diet consistency should match the ability of a child to eat. However, as observed in the discussion so far, the community's influences on child feeding appeared contrary to the outlined recommendations and this was reflected in children's diets.

9.6. A child's diet

The diet of a child refers to the content and consistency of their meals. In my study, most children under-6 months were fed mainly breast milk and fluids. Even though participants could not say when children were first given solid diets, the reports indicated that most children were receiving family foods by 6 months. In this community, every newborn child underwent an initial oral intake ritual. This was described as giving a newborn child fluid such as brewed herbs, plain water or guinea corn or millet water shortly after birth. This ritual may include other processes such as the pouring of a libation, killing of an animal and draining its blood or pouring flour water on a totem in an act of veneration to gods. These rituals were principally to welcome the child, who is a guest, into the family. After receiving the fluids, the child would be introduced to other substances, usually breast milk. It was reported that the ritual might last for only a short time after the first administration of the fluid but, if a child's mother's breast milk had to be treated for the presence of ants or evil contamination, it could take days. A grandmother reported that historically and depending on the recommendations of a diviner, the initial ritual could be gender based. Three and four days for boys and girls respectively before breast feeding started. A child might also receive liquid portions of adults' diets after this ritual.

Participants' responses and my observations indicated that when children were introduced to any food substances it was mainly family foods. The community did not seem to have cultural core foods for children, even though porridge was suggested as food for infants by some participants.

The phrase cultural core child food was coined to mean the foods that a community specifies as 'child food' (Pelto and Armar-Klemesu, 2015). No difference was observed between what children and adults ate in this community; nor were any differences observed between what children less than five year ate at different ages. 'Almost exclusive breastfeeding', was the only common child feeding practice for children below 30 months. The typical diet of a child was based on several interpretations.

9.6.1 The community's notion of food

The diets of children in the community consisted mainly of dense carbohydrate based foods. The community's notion of 'satisfying' food shaped what food sources were included in a child's diet. This community's members categorised food as 'satisfying', 'accompaniments' or 'treats'. Satisfying food was regarded as the most important food category and included cereals, grains and legumes which are largely carbohydrates but also contain some vitamins, proteins, and minerals (Lawrence and Worsley, 2007; Eastwood, 1997). Meals prepared from these "satisfying" food sources are eaten in large volumes and provide satiety. Providing satiety was the main objective in the choice of food for a child in the study community. Most participants who explained the community's concept of satiety linked it with achieving other nutritional benefits such as physical growth, energy, blood, and intelligence. This appeared to be what reinforced the community's food choices. Community members' belief was that the absence of physical feeling of hunger, and sense of abdominal fullness or physical satiety were important signs of the wellbeing of a child. As a result, 'accompaniments' or 'treats' were regarded as less important in the diet of children.

Only a few participants, mostly mothers, held the view that specific foods were needed for specific nutritional benefits. As seen in Table 8.1, 'accompaniments' or 'treats' are mainly fruit, vegetables, and foreign grown foods. Fruit and vegetables are a major food group which contain large proportions of micronutrients (minerals and vitamins) (Eastwood, 1997) offering significant nutritional benefits but they were not routinely given to children. Similarly, the foods reported as foreign grown, of similar nutrient composition to the 'satisfying foods' were not accepted well by some participants and, therefore, scarcely featured in the children's diet.

"Foreign foodstuffs" included rice, yams, maize products, stock cubes and dried fish powder and were available in the community but were perceived as inadequate in providing satiety irrespective of their similarity to local satisfying foods. Foreign foods were regarded more as "treats" or social foods, consumed on special occasions such as Christmas, but not a main part of the routine diet of the child. I observed that the desire to maintain the use of the cultural foods and transmit the sense of connection to those foods to future generations was a reason for rejecting foreign foods. Elderly participants, in particular, argued that if children were allowed to routinely eat "foreign foods" children were likely to lose interest in the community's own food and as a result, indigenous food crops would no longer be cultivated in the community. Foreign foods were also perceived to

be associated with poor health outcomes and the emergence of unknown diseases by some community members.

However, on some occasions, children were observed eating foods deemed foreign. Perhaps the uses of foreign foods during celebrations in the community suggest that values were changing and it may be possible to promote the use of different varieties of foods. Even though previous studies did not report on the insistence that children be fed on community grown foods only, there is evidence of children being given specific local community preparations as part of their feeding rituals to keep them strong and healthy (Bezner Kerr et al., 2008), as some ill-health was attributed to deviating from this norm. The previous studies also provided suggestions of participants' notion of nutrition and how that influenced the choice of children's foods (Owino et al., 2008; Pelto and Armar-Klimesu, 2015; Pelto and Armar-Klimesu, 2011). Participants studied in rural Kenya mainly reported adherence to the scientific interpretation of food and nutrition (Pelto and Armar-Klimesu, 2015), and in Ghana, a mixed interpretation of food and nutrition was reported (Pelto and Armar-Klimesu, 2011). In the Ghanaian study, healthy and nutritious food was defined as a substance which gave strength (Pelto and Armar-Klimesu, 2011). As in the current study, some participants failed to link the combination of different foods to the concept of a nutritious diet even though they reported that a child's diet should be nutritious (Pelto and Armar-Klimesu, 2011). Some participants suggested that fruit was not necessarily food as it did not provide energy, but indicated that fruit could protect children from sicknesses and prevent constipation (Pelto and Armar-Klimesu, 2011). Whilst the latter are important reasons for giving children fruit, as in my study, fruit was not prioritised in children's diets because fruit was not seen as an essential food.

The texture and consistency of food given to children also have nutritional outcomes. I generally observed that contrary to weaning guidelines semi-liquid porridge and savoury millet gruels were reportedly the preferred diets for children. However, adults also ate these foods. The most common food eaten by children, Tuo Zafi (TZ), was normally prepared as a family meal. Even though some participants indicated that TZ may be made softer for children, this was not observed. Besides, most children ate left over TZ, which usually firms up when it cools. Adults and sometimes toddlers, but not infants, would eat foods accompanied by vegetable soups with mothers dipping their fingers in the liquid portion and put it in the mouths of infants. It was reported that children were given food if they showed an interest and could eat that kind of food. Importantly though, most participants could not tell when their children were introduced to a particular food. Any member of the community could introduce food to a child when the child showed interest, even in the absence of the children's biological mothers or primary caregivers. However, not everyone in the community received public health information on child feeding.

Some of the literature suggests that children may be given softer and more liquid diets than adults (Hampshire et al., 2009; Omer-Salim et al., 2007). For instance, all members of a family may feed

on milk curds in dairy cattle rearing areas but more of these curds, which were softer than other foods, may be given to children rather than other family members, especially when these curd were scarce (Hampshire et al., 2009). However, the existing literature more commonly indicated that children were fed on a variety of foods that were not different from family foods (Bezner Kerr et al., 2008; Gibson et al., 2009; Hampshire et al., 2009; Hotz and Gibson, 2001; Kruger and Gericke, 2003; Nti and Lartey, 2007b; Omer-Salim et al., 2007; Pelto and Armar-Klemesu, 2011), as was the case in my study

The lack of difference between the textures of food children and adults consumed appeared to be related to how the community processed food. It was apparent from my fieldwork that the food processing methods were mainly manual. Although participants did not relate how they felt about the processing of food, it is likely that the extent of refinement would be limited by the capacity to achieve it. This might result in a tendency for children to be given food of a texture not appropriate to their stage of physiological development, with potentially harmful consequences.

9.6.2 Taboos and restrictions

Other important factors which guided a child's dietary content were food taboos and restrictions that originated from the community's culture. A child could be restricted from eating food from any of the food groups due to a taboo or traditional belief. During the fieldwork, I observed that none of the children ate food from animal sources such as meat, eggs or fish because of such beliefs. Meat was reportedly associated with childhood misbehaviour and adult social deviant behaviour.

A common belief was that when a child ate meat, they developed a taste for 'sweet' or tasty foods, became dependent on them and could grow into an adult who lacked self-control in other aspects of their lives, and such a child could become a thief, stealing in an attempt to find money to satisfy their desires. A child stealing or requesting meat inappropriately from anyone (outsiders) to satisfy their taste was seen as a sign of poor parenting that caused embarrassment. Parents whose children behaved contrary to the expectations of the community were stigmatised. Some mothers reported that when their child was observed to be misbehaving, community members would gossip about their poor parenting. Some mothers also suggested that their husbands could divorce them if they found out that the children's had developed bad behaviour having been indulged with meat. Consequently, mothers restricted animal products in their children's diet, even if they wished to do otherwise. It was agreed that it was generally not a taboo to give children animal products from the age of five if meat was eaten in the family. However, it was generally seen as an abomination for a parent to make animal products a regular part of a child's diet. Even though I was aware my own community could stigmatise mothers for perceived poor parenting, I had not imagined its effect on the content of a child's diet. This shows how tacit taken-for-granted values may impact on child feeding.

Animal products were also believed to hinder some aspects of a child's growth, such as teeth eruption, and to be a potential cause of ill health, such as abdominal distress and pain. Similarly, in a mixed method study exploring the local social and cultural context influences on child feeding in Zimbabwe and Tanzania, it was reported that in a coastal area where fish was one of the staple foods, children were prohibited from eating fish because fish was thought to cause worms and tooth decay in children (Paul et al., 2011). Kruger and Gericke (2003) also found in South Africa, that on the basis of cultural beliefs, participants reported that meat caused worms and was never given to children but the community used a meat substitute made of soya as a source of protein. This suggests that alternative foods with similar nutrients could be promoted in circumstances some food items are restricted by beliefs.

However, considering the number of beliefs opposed to giving animal sources of food to children in this community, it is likely that some children will never taste meat throughout their childhood. This finding highlights a tension between cultural knowledge and scientific knowledge as identified by (Helman, 2001).

Specific restrictions for individual households or children, such as the avoidance of guinea corn meals and okra were also reported as part of religious observance. A father indicated that fowls were his family's totem. As a result, in that household, every first-born child did not eat fowl meat. This applied to his daughter who was included in the study. The challenge with these restrictions is that they may severely limit the variety of foods and particularly protein in a child's diet.

9.7. A child's feeding pattern

In this study, participants described how their children were fed from the day they were born to the time of the interview. Participants explained that due to the initial oral intake ritual, it might be up to four days before a child received breast milk or other substances. When children started to breastfeed, mothers did not keep track of how frequently they fed. Thus, whereas some children may have been breastfed frequently throughout the day other children may have breastfed less often. However, it was reported that traditionally a child, like an adult would eat three times a day. Several issues emerged from the observations and participant reports, explaining what influenced the actual number of meals a child had per day.

9.7.1 Seasons, poverty, and food insecurity

In some households' poverty and food insecurity were important factors in the number of meals a child ate in a day. Households' economies, work activities within the community and the ratio of dependents to income earners, were factors that affected the supply of food in the community. During the dry season, there was usually a shortage of food in some households. This impacted on the frequency of daily feeding. The source of food for most members of the community was their own farms, supplemented with food bought from the local market. However, the supply of food was inconsistent during the year because of unreliable seasonal rainfall patterns, obsolete farming practices, and low yielding crops as well as the lack of reliable income from trade.

Food shortages commonly persisted from the end of December until early July when early millet was harvested, serving as the main source of food for households. Some participants reported that it was their practice to reduce the number of meals a child ate daily during seasons of acute food shortage to ensure that there was food at other times. During this time of rationing, a child might go without food for up to 24 hours. Whilst the shortage of food was a reason why a child did not eat the desired number of meals a day, the reports showed that in some households there was adequate food throughout the year. However, from my observations, there were no obvious differences between the numbers of meals eaten by children from food insecure households and wealthier families. This phenomenon is discussed in the following section.

9.7.2 Socioeconomics

Economic reasons such as cost and lack of income were reasons for a child not receiving some foods. The relatively poor households had little or no sources of food and inconsistent or no income generating activities. Some mothers had indicated that their inability to afford specific foods and food in general largely affected the content of a child's diet. Mothers reported fruit, vegetables and animal sources of food were too expensive for them to buy, even when they plainly wished to do so.

Relative wealth and poverty existed side by side in this community but wealth did not necessarily equate to better feeding since children's diets in the various households were similar in terms of variety, quantity, and number of meals per day. In relatively wealthier households, there were large stores of food sources, such as bags of maize and guinea corn and animals such as cattle and goats. There were also individuals in such households who were actively trading or in skilled jobs such as teaching with a monthly income.

It is thought that good nutrition is proportional to the availability and accessibility of resources as this guarantees the consumption of adequate amounts and varieties of food in one's diet (Goldman, 1993; Hatloy et al.). However, the outcome of this fieldwork suggests that the availability of resources may not necessarily result in the consumption of a nutritionally adequate diet and optimal nutritional status. Other studies have shown the same. In their study in Niger Hampshire et al. (2009) found equally malnourished children in both wealthy and poor families. Mothers in their study had the ability to purchase food but used their money to acquire other things, such as jewellery and household utensils. These mothers reported that they did not use their money to buy food because their husbands had that duty. Similarly, in a qualitative study to explore Gambian fathers' influence on how mothers make health and nutrition choices for their children, Mwangome et al. (2010) reported that child nutritional needs may not be the main priority for households when they had money. Instead, men may use their money to obtain a dowry to marry more wives. These studies illustrate how sociocultural factors may not necessarily favour a child's nutrient intake despite the availability of resources.

The determinants of feeding practices are multiple, diverse in context and interact uniquely to determine actual outcomes. Thus, whilst positive connections may exist between nutrient intake and resource availability they may not always result in adequate diets, either in quantity or diversity in all contexts.

One factor which explained the lack of difference in the diets of children in poorer and wealthier households in the current study appeared to be the representation of food as a symbol of wealth. Food in general and animals' sources of food were observed to be symbols of wealth in the community. Animals were regarded as capital items, either kept as assets or sold for cash to meet household expenditure, such as to buy 'satisfying foods' during lean seasons when there was food insecurity. During the fieldwork, it became apparent that the presence of the animals signified a household's status. This appeared to be more valued than the provision of food, by some members of the community -, especially men. This narrowed the opportunity for children to have a variety of foods in their diets and feed regularly throughout the year. It was not uncommon for members of households to lament their inability to afford foodstuffs even when they owned animals. The availability and use of resources for other purposes, that allowed community members to 'fit in' and maintain their social status, appeared to be very important. A grandfather asked, rhetorically, if it was not disgraceful for him to fail to have a number of cattle in his house, and insinuated that he would be disrespected if this was the case. A woman also suggested that even though her husband owned fowls, which were seen in their compound, they were to be kept for a day when he may require a fowl to sacrifice to the gods.

The order of priorities and its impact on child feeding has also been reported in the previous literature, though, from a different perspective. The Tuareg and Hausa women in Niger reported that they did not use their personally generated money to provide for their children because they had to possess some domestic items to maintain respect in their community (Hampshire et al., 2009). They indicated that rather than use their money to care for their children, they would use it to buy cosmetics and dresses to look good so that their husband would not take other wives (Hampshire et al., 2009). Even though the findings of the previous studies are not the same as those of my study, there are some similarities in how social obligations can prevent the use of resources to provide children with food.

9.7.3 Ineffective shared child care

Another factor that appeared to explain why children did not eat regularly in the community was ineffective shared child care. Community members were expected to care for children during their parents' absence. Mothers could leave their children in the care of other community members for hours and sometimes days or weeks to pursue other activities. It was observed that some of these children might not be fed regularly for several reasons. Firstly, other members of the community had other activities to pursue. Secondly, there was sometimes no explicit communication from a mother to others to feed her child, and so that child could be overlooked accidentally. Thirdly,

some of the caregivers may not have had food to share with the child left behind due to food insecurity. Consequently, children might go without food for many hours.

9.7.4 Breast milk: a complementary diet substitute

It was observed that a breastfeeding child was more likely to receive fewer solid meals than a weaned child at a stage when exclusive breast-feeding was no longer appropriate. Mothers considered breast milk as sufficient to meet the nutritional needs of children up to three years old. Breast milk was therefore used as a replacement food if there was inadequate food to satisfy all household members. The available food was shared among older children who did not breastfeed and the breastfeeding child was solely dependent upon breast milk regardless of age. Additionally, some participants believed that some children did not like food at particular times and would eat at their appropriate time. Such children were therefore reportedly fed only breast milk as participants considered it adequate. The difficulty with this finding is that most mothers in Ghana have received adequate information on child feeding (Gyampoh et al., 2014). However, mothers' belief in the adequacy of breast milk beyond six months of a child's life appeared to suggest that the dietary advice mothers receive may be insufficiently understood or accepted by some mothers.

9.7.5 Sex life of breastfeeding mothers

A belief associated with the sex life of breastfeeding mothers was found to influence child-feeding. The community generally believed that sexual intercourse contaminated breast milk and is, therefore, unhealthy for children. Mothers were expected to abstain from sexual intercourse until their child stopped breastfeeding. A child may be fully weaned by 24 months according to WHO/UNICEF recommendation (Dewey, 2001) but in my study, participants explained that it could be up to 3 years and beyond before a child may be weaned at which time mothers could customarily resume sexual relationships. In the study community, historically, a child may continue to breastfeed until they voluntarily stopped. Furthermore, it had been obligatory for mothers to stay with her parents for up to 3 years after giving birth to prevent sexual relations with her husband. A grandmother explained that this expectation had been relaxed and mothers stayed with their husbands. However, it was expected that mothers would abstain from sex whilst breastfeeding and mothers who were suspected of having sexual intercourse whilst breastfeeding were judged by the rest of the community to be bad mothers who did not value their children.

The community appeared to believe it could detect if a mother was failing to comply with the practice of abstinence. A grandmother lamented that it was likely that most mothers were not complying considering the frequency of childhood illnesses in the community. It was also suggested that when a mother began to wean her child in line with health professionals' advice, such a mother was suspected of resuming a sexual relationship with her husband earlier than normal community expectations. Women suspected of resuming sexual relationships were considered jealous as their act was assumed to be a measure undertaken to prevent their husbands from seeking out other women or wives. Such women were also considered to be

treating their children uncaringly. Whilst some of the participants were not interested in discussing the issue or did not indicate their opinion on the possible harm caused by resuming sexual relations whilst breastfeeding, these ideas worried some mothers who genuinely wished to give their children complementary foods.

Due to this communal pressure mothers appear to use an 'illusive compliance' strategy in public to signify that they were complying with the norm. Meanwhile, it was found to be acceptable to give liquid portions of foods to a child to taste when they showed an interest and some mothers used this practice to deceive the community. Mothers used this window of opportunity by allowing children to taste foods as a cover up for feeding their children in private. One mother indicated that, due to gossip in the community, she generally preferred to feed her child in private when she could prevent other community members commenting on how quickly she had started complementary feeding and on what food she gave her child. Whilst, the findings show that some mothers attempted to overcome the conflict and ensure that their children were fed adequately, in the midst of the communal living context, breastfeeding was commonly prolonged because of the constant social interaction which denied the mothers privacy and autonomy.

Sexual abstinence has been addressed in the feeding and nutrition literature. Grandmothers in Malawi believed that husbands and wives defiance of a one year sexual abstinence expectation after the birth of a child was one of the main causes of malnutrition and child mortality in their village (Bezner Kerr et al., 2008). Similarly, in my study, grandparents were particularly concerned about the lack of sexual abstinence practice. This goes to suggest that due to grandparents' input, health professionals' ideas may not be effectively integrated in community feeding practices to ensure optimal child feeding.

These beliefs such as the initial oral intake ritual and sexual abstinence during breastfeeding appeared to present for most mothers significant conflicts between professional dietary advice and the sociocultural factors. The initial oral intake and the almost exclusive breastfeeding ran counter to advice on exclusive breastfeed from birth to 6 months, and complementary feeding recommendations. The latter and all the conflicting advice was a general concern expressed verbally and non-verbally by most mothers.

9.8. Summary

This chapter pulled together the findings and demonstrated the implications of the existing feeding practices and influences that were unveiled in the fieldwork. This was discussed in the context of the implications on the optimal feeding of the child. The next chapter presents the final analysis of the findings, juxtaposing them with recommended practices and indicate the implications for child nutrition policy, and interventions.

CHAPTER TEN
CONCLUDING ANALYSIS AND RECOMMENDATIONS

Chapter 10: Concluding analysis and Recommendations

Indigenous child feeding practices were explored. The aim was to contribute to an explanation of why public health nutrition interventions were not resulting in the desired outcome of appropriate child feeding and optimal nutrition.

10.1. Prevailing vs. Recommended IYC dietary advice

In order to understand the implications of this study's findings, I compare here the community practices uncovered with professionally recommended infant and young child feeding practices. Notable practices that were uncovered during the fieldwork include the initial oral intake; predominant use of foodstuffs that provided a feeling of satiety and family foods in a child's diet; food taboos/restrictions such as sexual abstinence during breastfeeding delaying weaning, and food rationing and reduced feeding frequencies.

The primary purpose of child feeding is to promote growth and development and provide energy for daily activity through the appropriate intake of nutrients (Rao and Beckingham, 2013; Engle et al., 1999; Norgan et al., 2012). The nutrients required and the ability of a child to eat specific foods should guide the selection of foods to include in a child's diet. Foods given to children are expected to vary in content and texture and be different from adults' foods at least until the child is mature enough to eat family foods.

A child should be put to the breast within the first hour of birth to receive colostrum, exclusively breastfed for six months (Kramer and Kakuma, 2012) and then introduced to a special complementary diet specific to their age and continue to breastfeed until at least 24 months of age (Brown et al., 1998). These guidelines have been proven to ensure that the nutritional needs of children are met. However, in this study, all children at birth were reportedly fed with a fluid varying in composition before starting breastfeeding or receiving other substances to meet their nutritional needs. Participants reported that after the initial newborn fluid intake, a child may receive breast milk and other fluids, some of which might be non-nutritive substances, immediately or up to four days later. Delay in feeding a child breast milk has possible malnutrition related outcomes. Non-nutritive substances can displace breast milk preventing a child from receiving appropriate amounts of required nutrients (Brown et al., 1998). Breast milk also contains immune properties vital in protecting children during their first few months when their immune system is immature. This is particularly important if their mothers were unable to pass immune properties on to them intrauterine (Brown et al., 1998). When a mother's immunity is low children may not receive these immune properties leaving them to rely on colostrum and breast milk for their initial immunity. Unfortunately, as reported by participants, children may not receive colostrum immediately after birth but would rather receive substances that could be contaminated.

Guinea corn flour, which was one of the substances used in the initial intake ritual, is reportedly powdered on a local milling stone and mixed with water, and the liquid part drained and fed to the baby.

From observation, the milling stone, the cooking area, and the cooking utensils used for preparing the cereal fluid could be sources of contamination. Figure 10.1 depicts a typical area for storage of utensils which could be used in preparing newborn fluids. This stone as seen in Figure 6.1 is also used to mill other ingredients and it is not washed but swept with a broom after use. The limited immunity of a newborn child and the potentially contaminated nature of the fluid create a double opportunity for poor child nutritional and health status. Poor food hygiene has been reported as a major contributor to undernutrition as it can cause diarrhoea, preventing the absorption of nutrients, and cause infections leading to lack of appetite. Additionally, during illness, the metabolic rate rises increasing the demand for nutrients further impacting nutrient requirements.

At 6 months breast-feeding episodes should gradually reduce until the child is completely weaned by the age of 24 months (WHO and UNICEF, 2003). In this study, most mothers suggested that they breastfed continuously and could not keep track of the number of times a child was fed. Breastfeeding was also used as a substitute for complementary feeding, and it appeared that in such cases a child might be breastfed more frequently. However, breast milk alone cannot provide sufficient nutrition for a child after 6 months of age. Accordingly using breastfeeding as a substitute for complementary feeding may result in a child lacking some nutrients. It might be argued that due to the high frequency of breast feeding reported, this community could be said to be practising the WHO recommendation on predominant breastfeeding at the early stages of the weaning process.

Figure 10.1: Typical storage of utensils



However, the frequent breast-feeding could displace other foods which contain nutrients necessary to supplement the breast milk. Besides, some other breastfeeding children (6 months and above)

were observed to be without their mothers for many hours and were only breastfed when their mothers returned.

Additional foods are expected to be given to children to complement breast milk from 6 months onwards. An appropriate complementary diet, helping a child's transition to an adult diet, providing diverse diet, foods of appropriate consistency, sufficient frequency of meals, responsive behaviour when feeding a child, sensitivity to hunger and satiety cues and appropriate feeding techniques are recommended for children (PAHO/WHO, 2003). The rationale for these recommendations is to ensure safe feeding whilst providing a child with the right nutrients.

After six months a child actively interacts with the environment and is prone to infections. A child's nutritional needs increase due to this increased activity and the rapid growth and development occurring during this time. In line with this, it is recommended that a child under 24 months receives food from at least 4 of the 7 food groups stipulated by (WHO, 2008) and, since children below 24 months are unable to consume large amounts of foods, their diet should consist of regular, frequent small meals and have high concentration of nutrients (WHO, 2005), including protein and micronutrients, required to meet their daily needs.

However, the content of the children's diets observed and reported upon during the fieldwork did not meet these criteria. Most children ate mainly from two of the food groups only. Foods that were deemed satisfying, including grains, cereals, and legumes (i.e. mainly carbohydrates with some trace elements and vitamins) were the preferred food for a child. Children were not given food from animal sources nor fruit and vegetables. Fats were not generally included in a child's diet. During the fieldwork, there was only one household where a mother was observed using the World Food Program (WFP) distributed oil to prepare a family meal and this was mainly used as a condiment.

The varieties of food used in the community were generally limited and a child prevented from eating from that already limited range due to a taboo had their diet further depleted. The children studied appeared to barely receive the minimum nutrients required. In fact, it was reported in a study assessing the nutritional content of children's diets in developing countries, including Ghana, most diets were especially lacking in micronutrients (Dewey, 2003). Unfortunately, the foods observed to be excluded from the diets of children were those most essential for infants and young children. Indeed, food from animal sources such as poultry, dairy, meat, fish, and eggs are highly recommended to make up for iron, zinc, calcium, vitamins and mineral (Dewey, 2003) deficiencies in the children's diets, which were observed to be mainly caloric in nature. Although the current study did not include detailed nutritional analysis of the diet of children, the common food groups that made up the children's diets suggested that their diet was mainly carbohydrates.

Another important factor to consider was the consistency of the foods offered to children. Child feeding is expected to ensure the intake of an adequate amount and quality of food to meet the

nutritional needs without harm to the child. Maturity of the muscular and nervous systems determines a child's ability to efficiently consume food. Children from 6 months and mainly between the ages of 7-12 months are expected to be given pureed, mashed and soft chopped foods (Brown et al., 1998). These foods are given to children to correspond with their eating skills such as suck and gag reflexes, and sucking, munching and chewing. Most children in my study were given family foods. Some of the children were above 24 months, an age at which they could consume solid foods, and appeared to be receiving the right texture of foods. However, children require four times the amount of time to consume solid foods as they would consume very viscous foods (Brown et al., 1998). This suggests that children may find it difficult to consume family foods which were mainly solids. This explains reports of food refusal by some of the children which could be related to a child's frustration at their inability to consume the food. Generally, there were no child specific foods seen or reported except breast milk. Even though there was porridge for sale in the village which could be considered to be of appropriate consistency, it was not routinely fed to most children.

The number of meals a child consumes in a day also contributes to ensuring that they receive the required number of nutrients for their daily needs. The capacity of a child's stomach is limited thus the nutrient density of children's diets needs to be high (Dewey, 2003) and their meals more frequent. In this study, the amount of food was not measured neither was the nutrient and energy density determined. However, most children received 0 to 1 meal, and 2 children received more than 4 meals, a day. Irrespective of age, the community's norm for the number of meals an individual received daily was reportedly three meals. This suggests that the number of meals most children consumed in this community daily did not meet their needs. The recommended number of meals a day for children 6-8 months is 2 to 3, and for 9-23 months old children, 3 to 4 meals daily (WHO, 2008). Inadequate meal frequency may lead to undernutrition. However, unnecessarily high frequency may lead to over nutrition or the displacement of breast milk at ages when children still require it. This suggests that the frequency of meals observed was not consistent with recommended practices.

Another important practice is responsive feeding. The elements of this practice include recognising a child's hunger and satiety cues, being patient during a child's feeding and encouraging him or her to eat without force (WHO, 2008). It also involves the use of different food varieties, textures and flavours to encourage a child to receive food and to manage food refusal (WHO, 2008). There were a variety of interactions between children and caregivers. There were instances of encouragement but lack of supervision during feeding especially when a child self-fed. However, forced feeding was common in younger children who were fed by mothers. Responsive feeding appeared to be about food provision. Most participants appeared to suggest that by providing a meal for a child they had paid attention to the child's nutritional needs. However, some mothers

conceded they were not providing adequate number of meals for their children, but blamed it on their inability to access food regularly as mothers' sometimes saved food for the future.

As indicated earlier, the textures of food given to a child were limited and there were equally limited flavours and varieties of food. Most foods were savoury. Even though few children were given porridge with sugar, sweetened food was restricted for children less than one year. It was reported that some children preferred the sweetened foods and refused other foods. However, a mother was cautioned by other women in the household that it was not proper to feed a child sweetened food. This mother was observed force feeding her child with salted maize dough porridge, which she said the child disliked. Contrary to this force feeding, in responsive feeding, a child is expected to be encouraged to eat, and different flavours of foods given to children as a strategy for managing food refusal. Only one child was observed being encouraged to eat.

Good hygiene practices in child feeding are also essential for achieving optimal nutrition. Good practices prevent diarrhoeal diseases due to the contamination of food and use of unclean utensils and poor personal hygiene. In my study, some unhygienic practices were observed. Most children were fed with fingers and in most cases, there was inadequate hand hygiene. Utensils for the preparation of food were usually left in the open area in the compound. Leftover food was usually covered but because of the high temperatures and lack of refrigeration it appeared to be decomposing and smelt stale. Some participants commented on the stale nature of food as they fed children. Wholesome water was available from boreholes and used for cooking and in some households this water was stored in covered containers, but in others, the water was kept in open containers. These practices provide opportunities for contamination and the potential of children ingesting bacteria. However, during the fieldwork, none of the children included in the study experienced any contaminated food related illness.

These practices show that children are inadequately fed, and the associated factors appear to present a complex challenge for mothers to feed children optimally.

10.2. Navigating the social complexities: the challenge to mothers

The results highlight the impact of familiar and taken-for-granted socioeconomic and socio-cultural factors which overwhelmingly impacted on mothers' ability to feed children using public health nutrition information and recommendations. Child feeding involved mothers navigating conflicting discourses of public health recommended dietary practices and the competing community socio-cultural practices within the context of poverty and food insecurity, and the community's shared structures and living arrangements. Mothers play the central role in child feeding but are not necessarily empowered to make independent decisions regarding this. Community influences dominated and directed child feeding, resulting in practices that conflicted with recommended dietary practices. This raised implications for practice, policy, and research.

10.3. **Implications**

This study cannot make definite statements about the association between the community practices and child nutritional status. However, as seen in section 10.1, the community feeding practices were not consistent with the recommended Infant and Young Child feeding practices. Meanwhile, children's nutritional status in the upper east region is known to be a matter of public health concern. This raises questions about the content and success of child feeding interventions and health professionals' knowledge of the existing practices. Mothers face challenges in implementing child feeding advice due to taken-for-granted factors and implicit realities in the community that influence child feeding.

Mothers talked about child feeding in the language of health professionals acknowledging that certain nutrients enhance intelligence, blood, and growth. Mothers also demonstrated they received such information from health professionals. However, children's diets and feeding did not include foods providing nutrients that ensure such benefits. This indicates a gap between mothers' beliefs about the benefits of child feeding, child feeding practices, and their actual practice. This suggests that in addition to all the factors that burden mothers in feeding their children as they might choose, they may not have fully understood the information received from health professionals.

10.4. **Recommendations**

10.4.1 **Practices**

Considering the nature of community influences on child feeding, a practical step would be to establish a community wide approach in the provision of health education on child nutritional needs. Even though current service delivery includes home and community based services, it does not appear to include most household members involved in child feeding. A community wide approach would ensure that other community members who may pressurise mothers will have access to the same knowledge. Some individuals (grandmothers, diviners) may be more powerful than mothers in their influence on child feeding. These individuals should be specifically targeted using culturally acceptable strategies to harness their support in promoting optimal feeding practices. The use of "the Senegalese grandmothers' advocate maternal and child health" (Aubel et al., 2004a) model may be useful. This model specifically encouraged grandmothers to support optimal nutrition practices. In the strategy, a baseline study found that grandmothers were deemed experts in maternal and child health in the communities of study but that they had limited contact with health professionals. Grandmothers were also found to be custodians of tradition and promoted local practices (Aubel et al., 2004b) that were detrimental to child health. Such grandmothers could be active recipients of dietary advice from health professionals. A participatory research approach may be a useful tool to involve grandmothers and diviners in nutrition interventions that could help change their attitudes.

There is a health volunteer system in Ghana that uses community members to provide some health services. This system could be used to provide nutrition information to community members, especially the most influential individuals, who could then contribute to the acceptance of the health professionals' advice.

Furthermore, persuading community members to value well-nourished children and linking that to household social status may change the community's practice of keeping foodstuff to maintain their social status by directing resources and attention towards child nutrition. Members of the community maintain prestige by keeping animals. However, evidence indicates that children are considered very valuable (Lystad, 1960; Sam, 2001), and the presence of educated members in a family elevate the prestige and social status of such families in Ghana. Health workers could use this as a basis for providing nutrition information by not only emphasizing the immediate benefits of nutrition but also the potential social benefits of well-nourished children achieving high educational goals.

Cultural restrictions or preferences limit the use of locally available, but not necessarily traditionally locally grown, foods, which could benefit child nutrition. In addition to the latter, poverty may also prevent community members from using food stuff available in the market leading to the exclusion of some food groups from children's diets. Health professionals could encourage the use of alternative food sources grown in the community but not considered as essential sources of nutrients. Some fruit trees present in the northern part of Ghana are not referred to in the literature as sources of specific nutrients. The fruit of the baobab and the dawadawa trees, freely available in the wild most of the year, are rich sources of vitamin C, carotene, and other nutrients. Documenting and promoting the use of these food items may not be a direct responsibility of health professionals but may make it easier for participants to feed their children a variety of foods without being criticised or feeling that they were betraying their culture.

Physical household structures and communal living arrangements within the community were significant influences on child feeding as they enabled open interaction, shared responsibility, resources and accountability. This paints the picture of a strong social support system. However, the findings also indicated that this system could work against optimal child feeding because of its lack of clarity. Due to the shared responsibility towards each other in the community, mothers did not explicitly ask other mothers to feed their children when they were not home and just assumed that their children would be fed. Health workers could work with mothers on how to consciously negotiate, prior to their absence, to feed each other's children on a scheduled basis during their absence.

10.4.2 Policy

The findings show the need for the promotion of optimal child feeding in the community to go beyond current health professionals' practices. The current evidence on child feeding practices, food insecurity, and poverty, lack of income generating opportunities and farming practices all

point to the need for a wider approach to managing nutrition. This suggests that a policy involving a range of sectors such as agriculture, trade and industry, employment, social welfare, education, finance, and health is essential for managing nutrition broadly. A framework, showing the strategic roles and specific functions of each sector need to be created in line with the recommendations of Ghartey (2011), and the current Ghanaian national nutrition policy (GHS, 2012). A business model, which considers the outcomes of managing nutrition in Ghana in terms of the economic logic of value for money (Ovans, 2015), and indicates the need for areas of joint action by these agencies, is required. The policy should include home-grown sources of funding for the implementation of nutrition related interventions nationally and locally as the reliance on foreign sources of funding such as donations and grants has been a major source of ad hoc and abrupt implementation and then cessation of some health and nutrition interventions in Ghana (Ghartey, 2011).

The policy should also provide for some nutrition education materials to be translated into local languages and for training community level health personnel in the specific local Ghanaian languages to enable them to give nutrition education messages directly to all community members.

10.4.3 Research

The study raises the question of how much health professionals know about these communities. Investigating health professionals' understanding of the communities and their cultural dynamics may help develop more appropriate interventions. Exploring the language used by health professionals in the provision of nutrition information to communities could contribute to the understanding of why participants are knowledgeable in scientific nutrition language but child feeding does not reflect that knowledge. Evidence generated could then be used by health professionals to provide culturally relevant, tailored community-based services.

Whilst this study has demonstrated the dominance of culture in child feeding, it is not conclusive that this is the only influence. Another avenue for future research may be to explore health professionals' implementation of nutrition interventions to create some understanding of factors which may promote the local community practices over the health professionals' advice.

The community wide approach proposed in the practice recommendations section could be implemented through participatory action research approach. As shown in the findings, child feeding is a community wide matter. Moreover, certain individuals within the community appear to have more authority than mothers who receive public health child feeding information. This makes it difficult for mothers to make child feeding decisions based on this information they receive.

Using a community wide action research approach would be useful in engaging all members of the community in determining child feeding issues that may impact on child wellbeing and working with community members to identify more appropriate and culturally acceptable ways of feeding children which are aligned with public health child feeding recommendations may be accepted and sustained.

A way of using this participatory approach could be by exploring the concept of nutrition and child wellbeing with the community. Community members would generate community information and limitations on child feeding and wellbeing. Considering that all the types (community culture and public health child feeding knowledge) all exist in the community, members of the community will facilitate the exploring of this information to identify child feeding practices areas of disagreements and agreements, and how these impact child wellbeing, develop and implement sustainable strategies that would affect child feeding positively.

Considering the nature of the impact of the family networks on child feeding practices, identified on in this study, I believe that this strategy could help bridge the gap between the recommended and the actual practices.

10.5. Limitations of my study

Ethnography aims to record all, or an aspect, of a group's culture for the purpose of demonstrating from the perspective of the group what their cultural principles and practices are in relation to a particular phenomenon. Ethnography tends to be more about depth than the breadth of phenomena, and that was the case with this study. Due to the context specific nature of the study, the results cannot be read as evidence for a broader context and the study is limited by the small size of the geographical area and cultural context.

10.6. The study's strengths

The strength of the study is that it gives due weight to the influence of culture because it is from the perspective of participants. It is not based on the preconceived assumptions of the researcher. Data collection methods and sources were triangulated, and it was possible to obtain data from several perspectives to understand the phenomenon of child feeding in a more comprehensive way. The flexibility of the methods also allowed for the recruitment of individuals who were identified during the data generation process thus providing rich data important in explaining the phenomena. An in-depth exploration of the concepts identified during the field work, to the point where no new data emerged, was possible because of the duration of the fieldwork. The duration also helped to reduce self-reporting bias. For instance, initially, some participants appeared to report what they thought I expected to hear. However, as time passed and most participants became used to me, some participants made changes to things they initially told me and actually indicated that they were not sure of how I would react.

10.7. Unique contributions of the study

This study generated evidence about the cultural feeding practices and the influences on these practices in rural northern Ghana. The study has introduced the idea that cultural practices could be providing a competing discourse to that of official health guidelines which potentially hinders optimal child feeding in the community. It has provided an explanation for the suboptimal feeding practices of children identified through the Ghana demographic and health surveys and the

multiple cluster indicator surveys carried out to track the progress and evaluate the outcome of the millennium development goals. It has particularly shown the mechanisms through which community processes influence child feeding, demonstrating how social networks, social interactions, and living arrangements interact to influence the feeding of children

This is the first study that has applied ethnographic principles in northern Ghana: combining interviews with participant observation to generate data about cultural feeding practices over a considerable (7 months) period.

10.8. Conclusion

Explaining the persistence of malnutrition and suboptimal child feeding practices in northern Ghana remains a challenge. In an attempt to contribute to this body of knowledge, household child feeding practices were explored using ethnographic principles. The results show that the community's religious and socio-cultural norms, its beliefs and values and health professional's advice on child feeding exist side by side. However, child feeding practices are mainly underpinned by information originating in the community, which is spread and reinforced by communal living arrangements, social interaction processes within the community and food insecurity. Examples of child feeding practices are new-borns initial oral intake, food taboos, and communal cooking. The results provide some insights into why malnutrition and suboptimal child feeding persist in this part of Ghana. Several implications have been synthesised and appear to show the tensions mothers experience with many aspects of feeding their children. A number of recommendations for practice, research and policy have been outlined, which could contribute to improving and promoting the optimal feeding of children in rural northern Ghana.

References

- WHO Global Strategy for Infant and Young Child Feeding (n.d.). WHO, Available: http://www.who.int/maternal_child_adolescent/topics/child/nutrition/global/en/index.html. Accessed 31 July 2012.
- Abercrombie, N., Turner, S., Abercrombie, B. S. N., Hill, S. & Turner, B. S. (2006). *The Penguin dictionary of sociology* (5th ed.): Penguin Books.
- Aborigo, R. A., Moyer, C. A., Rominski, S., Adongo, P., Williams, J., Logonia, G., Affah, G., Hodgson, A. & Engmann, C. (2012a). Infant nutrition in the first seven days of life in rural northern Ghana. *BMC Pregnancy And Childbirth*, 12.
- Aborigo, R. A., Moyer, C. A., Rominski, S., Adongo, P., Williams, J., Logonia, G., Affah, G., Hodgson, A. & Engmann, C. (2012b). Infant nutrition in the first seven days of life in rural northern Ghana. *BMC Pregnancy and Childbirth*, 12(1), 1-10.
- Applefield, J. M., Huber, R. & Moallem, M. (2000). Constructivism in theory and practice: Toward a better understanding. *The High School Journal*, 35-53.
- Appoh, L. Y. & Krekling, S. (2005). Maternal nutritional knowledge and child nutritional status in the Volta region of Ghana. *Matern Child Nutr*, 1(2), 100-10.
- Armah, F. A., Yawson, D. O., Yengoh, G. T., Odoi, J. O. & Afrifa, E. K. (2010). Impact of floods on livelihoods and vulnerability of natural resource dependent communities in Northern Ghana. *Water*, 2(2), 120-139.
- Aubel, J., Toure, I. & Diagne, M. (2004a). Senegalese grandmothers promote improved maternal and child nutrition practices: the guardians of tradition are not averse to change. *Social Science & Medicine*, 59(5), 945-959.
- Aubel, J., Touré, I. & Diagne, M. (2004b). Senegalese grandmothers promote improved maternal and child nutrition practices: The guardians of tradition are not averse to change. *Social Science and Medicine*, 59(5), 945-959.
- Awumbila, M. (2003). Social dynamics and infant feeding practices in Northern Ghana. *Institute of African Studies Research Review*, 19(2), p. 85-98.
- Bagchi, K. (2004). Iron deficiency anaemia—an old enemy. *East Mediterr Health J*, 10(6), 754-60.
- Baye, K., Guyot, J. P., Icard-Verniere, C. & Mouquet-Rivier, C. (2012). Nutrient intakes from complementary foods consumed by young children (aged 12-23 months) from North Wollo, northern Ethiopia: the need for agro-ecologically adapted interventions. *Public health nutrition*, 16(10), 1741-50.
- Belmain, S. & Stevenson, P. (2001). Ethnobotanicals in Ghana: reviving and modernising age-old farmer practice. *Pesticide outlook*, 12(6), 233-238.
- Bernard, H. R. (1994). *Research methods in anthropology*: Rowman Altamira.
- Bernard, H. R. (2011). *Research methods in anthropology*: Rowman Altamira.
- Bettany-Saltikov, J. (2012a). *How to do a systematic literature review in nursing: a step-by-step guide*: McGraw-Hill Education (UK).
- Bettany-Saltikov, J. (2012b). *How To Do A Systematic Literature Review In Nursing: A Step-By-Step Guide: A Step-By-Step Guide*: McGraw-Hill International.
- Bezner Kerr, R., Dakishoni, L., Shumba, L., Msachi, R. & Chirwa, M. (2008). "We Grandmothers Know Plenty": Breastfeeding, complementary feeding and the multifaceted role of grandmothers in Malawi. *Social Science & Medicine*, 66(5), 1095-1105.
- Bilinski, H. N., Duggleby, W. & Rennie, D. (2010). The Meaning of Health in Rural Children: A Mixed Methods Approach. *Western Journal of Nursing Research*, 32(7), 949-966.
- Blench, R. (2005). *background conditions in Upper East region, Northern Ghana, 2005* [Online]. [Accessed 15/10 2015].
- Blumer, H. (1986). *Symbolic interactionism: Perspective and method*: Univ of California Press.
- Bourgois, P. (1990). Confronting anthropological ethics: Ethnographic lessons from Central America. *Journal of Peace Research*, 27(1), 43-54.
- Briggs, P. (2014). *Ghana*: Bradt travel guides.
- Brown, K., Dewey, K. & Allen, L. (1998). Complementary feeding of young children in developing countries: a review of current scientific knowledge.
- Callender, S. T., Mallett, B. J. & Smith, M. D. (1957). Absorption of haemoglobin iron. *British journal of haematology*, 3(2), 186-192.

- Cassell, J. & Jacobs, S.-E. (1987). *Handbook on ethical issues in anthropology*. American Anthropological Association Washington DC.
- Castro-Gómez, S. & Johnson, A. (2000). traditional and Critical theories of Culture. *Nepantla: Views from South*, 1(3), 503-518.
- Cattaneo, A. & Quintero-Romero, S. (2006). Protection, promotion, and support of breastfeeding in low-income countries. *Semin Fetal Neonatal Med*, 11.
- Cialdini, R. B. & Trost, M. R. (1998). Social influence: Social norms, conformity, and compliance.
- Clifford, J. & Marcus, G. E. (1986). *Writing culture: The poetics and politics of ethnography*. Univ of California Press.
- Colecraft, E., Marquis, G. S., Aryeetey, R., Sakyi-Dawson, O., Lartey, A., Ahunu, B., Canacoo, E., Butler, L. M., Reddy, M. B. & Jensen, H. H. (2006). Constraints on the use of animal source foods for young children in Ghana: a participatory rapid appraisal approach. *Ecology of food and nutrition*, 45(5), 351-377.
- Colecraft, E. K., Marquis, G. S., Bartolucci, A. A., Pulley, L., Owusu, W. B. & Maetz, H. M. (2004). A longitudinal assessment of the diet and growth of malnourished children participating in nutrition rehabilitation centres in Accra, Ghana. *Public health nutrition*, 7(04), 487-494.
- Commisceo-global. (2016). *Ghana guide* [Online]. Available: <http://www.commisceo-global.com/country-guides/ghana-guide> [Accessed 20/06 2016].
- Cooke, A., Smith, D. & Booth, A. (2012). Beyond PICO the SPIDER tool for qualitative evidence synthesis. *Qualitative Health Research*, 22(10), 1435-1443.
- Cooke, E., Haque, S. & McKay, A. (2016). Ghana poverty inequality report.
- CRD. (2009). *Systematic reviews: CRD's guidance for undertaking reviews in health care*: Centre for Reviews and Dissemination.
- Creswell, J. W. & Clark, V. L. P. (2007). Designing and conducting mixed methods research.
- CT.gov. (2016). <attachf_guidelines_consistency_mod_foodliquids.pdf> [Online]. Available: http://www.ct.gov/dds/lib/dds/health/attachf_guidelines_consistency_mod_foodliquids.pdf [Accessed 15/10 2016].
- Cultures & Countries (2016). Culture of Ghana - history, people, clothing, traditions, women, beliefs, food, customs, family. 2016.
- De Onis, M. (2006). *Complementary feeding in the WHO Multicentre Growth Reference Study*. Acta Paediatrica, International Journal of Paediatrics. 95 (SUPPL. 450) (pp 27-37), 2006. Date of Publication: April 2006.
- de Onis, M., Onyango, A. W., Borghi, E., Garza, C. & Yang, H. (2006). Comparison of the World Health Organization (WHO) Child Growth Standards and the National Center for Health Statistics/WHO international growth reference: implications for child health programmes. *Public health nutrition*, 9(07), 942-947.
- Denzin, N. K. & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research*: Sage.
- Devlin, K. (2012). Stunting Limits Learning and Future Earnings of Children. *World*, 40, 26.
- Dewey, K. (2003). Guiding principles for complementary feeding of the breastfed child.
- Dewey, K. G. (2001). Nutrition, Growth, and Complementary Feeding of The Breastfed Infant. *Pediatric Clinics of North America*, 48(1), 87-104.
- Dewey, K. G. & Brown, K. H. (2003). Update on technical issues concerning complementary feeding of young children in developing countries and implications for intervention programs. *Food and Nutrition Bulletin*, 24(1), 5-28.
- Dewey, K. G., Onyango, A. W., Garza, C., de Onis, M., Alasfoor, D., Albernaz, E., Bhandari, N., Bjoerneboe, G. E. A., Lartey, A. & Reference, W. H. O. M. G. (2006). Complementary feeding in the WHO Multicentre Growth Reference Study. *Acta Paediatrica*, 95, 27-37.
- DGHS. (2015). *Ghana: DHS 2014 - Key Indicators Report (English)* [Online]. Available: <http://dhsprogram.com/pubs/pdf/PR59/PR59.pdf> [Accessed 07/10/ 2015].
- Eastwood, M. A. (1997). *Principles of human nutrition*. London: London: Chapman & Hall.
- Ellis, P. (2016). *Evidence-based Practice in Nursing*: Learning Matters.
- Ellwood, C. A. (1918). Theories of Cultural Evolution. *American Journal of Sociology*, 23(6), 779-800.
- Emerson, R. M., Fretz, R. I. & Shaw, L. L. (2001). Participant observation and fieldnotes. *Handbook of ethnography*, 352-368.
- Engle, P. L., Menon, P. & Haddad, L. (1999). Care and Nutrition: Concepts and Measurement. *World Development*, 27(8), 1309-1337.

- FAO. (2015). *The state of food insecurity in the world 2014: strengthening the enabling environment for food... security and nutrition* [Online]. Food & Agriculture Org. Available: <http://www.fao.org/hunger/en/> [Accessed 1/10 2016].
- FAO & WHO (2014). WHO | WHO and FAO announce Second International Conference on Nutrition (ICN2). *WHO*, 2016.
- Fetterman, D. M. (1989). *Ethnography: step by step / David M. Fetterman*. Newbury Park, Calif.London: Sage.
- Fisher, L. (1993). Heidegger's Hermeneutic Circle. *Journal title Eidos*, 7-17.
- Fiske, A. P. (1992). Knowledge and Ideology in the Sociology of Education. *Psychological Review*, 99(4), 689-723.
- Folbre, N. (2006). Measuring care: Gender, empowerment, and the care economy. *Journal of human development*, 7(2), 183-199.
- Fouts, H. N. & Brookshire, R. A. (2009). Who feeds children? A child's-eye-view of caregiver feeding patterns among the Aka foragers in Congo. *Social Science & Medicine*, 69(2), 285-292.
- Fox, S. I. (1996). Human Physiology 9th Edition.
- Furber, C. (2010). Framework analysis: a method for analysing qualitative data. *African Journal of Midwifery & Women's Health*, 4(2).
- Gale, N. K., Heath, G., Cameron, E., Rashid, S. & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC medical research methodology*, 13(1), 117.
- GDHS (2003). <GDHS 2003 Report.pdf>.
- GDHS (2008a). Ghana demographic and health survey.
- GDHS. (2008b). *Ghana Demographic and Health Survey 2008 [FR221] - FR221[13Aug2012].pdf* [Online].Available:<http://dhsprogram.com/pubs/pdf/FR221/FR221%5B13Aug2012%5D.pdf> [Accessed 2013].
- Geertz, C. (1973). Thick description towards the interpretative theory of culture. *The interpretation of cultures< selected essays*. BasicBooks.
- Gershwin, M. (1985). *Nutrition and immunity*. Elsevier.
- Ghanaweb.(2014).*Ethnicgroups*[Online].Available:<http://www.ghanaweb.com/GhanaHomePage/tribes/> [Accessed 06 2014].
- Ghartey, A. B. (2011). *Making Nutrition Policy Central to Development - GhanaNutritionPolicyDPMenno.pdf*[Online].Available:<http://siteresources.worldbank.org/HEalthnutritionandpopulation/Resources/2816271095698140167/GhanaNutritionPolicyDPMenno.pdf> [Accessed 2014].
- GHS.(2009).*GHSAnnualReport*[Online].Available:http://www.ghanahealthservice.org/includes/upload/publications/FINAL_DRAFT_2009_GHS_Annual_Report%20final%20final.pdf [Accessed 2011 2014].
- GHS. (2010). *Health Programmes:: Ghana Health Service.org* [Online]. Demographic and Health Survey (DHS) 1998-2003; Preliminary Multiple Indicator Cluster Survey (MICS) 2006 * Prevalence of undernutrition in 1993 is among children under three. Available: <http://www.ghanahealthservice.org/nmccsp.php> [Accessed 20/12 2013].
- GHS. (2012). *Health Programmes:: Ghana Health Service.org* [Online]. Demographic and Health Survey (DHS) 1998-2003; Preliminary Multiple Indicator Cluster Survey (MICS) 2006 * Prevalence of undernutrition in 1993 is among children under three. Available: <http://www.ghanahealthservice.org/nmccsp.php> [Accessed 2013].
- GHS.(2013).*ghananutritionpolicy*[Online]. Available:<https://www.google.co.uk/webhp?sourceid=chromeinstant&ion=1&espv=2&ie=UTF-8#q=ghana%20nutrition%20policy> [Accessed 21/09 2016].
- Gibson, R. S., Abebe, Y., Hambidge, K. M., Arbide, I., Teshome, A. & Stoecker, B. J. (2009). Inadequate feeding practices and impaired growth among children from subsistence farming households in Sidama, Southern Ethiopia. *Maternal & child nutrition*, 5(3), 260-75.
- Gold, R. L. (1958). Roles in sociological field observations. *Social forces*, 217-223.
- Goldman, A. S. (1993). The immune system of human milk: antimicrobial, antiinflammatory and immunomodulating properties. *The Pediatric infectious disease journal*, 12(8), 664-672.
- GSS. (2011). Accra, Ghana: Ghana Statistical Service.
- GSS (2012). *Census2010_Summary_report_of_final_results.pdf*.

- GSS, GHS & ICF (2016). Ghana Demographic and Health Survey 2014.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ*, 29(2), 75.
- Guba, E. G. & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2, 163-194.
- Guesry, P. (1998). The role of nutrition in brain development. *Preventive medicine*, 27(2), 189-194.
- Guest, G., Namey, E. E. & Mitchell, M. L. (2012). *Collecting Qualitative Data: A field manual for applied research*: Sage.
- Gupta, N., Gehri, M. & Stettler, N. (2007). Early introduction of water and complementary feeding and nutritional status of children in northern Senegal. *Public Health Nutrition*, 10(11), 1299-1304.
- Gyampoh, S., Otoo, G. & Aryeetey, R. (2013a). *Maternal nutrition knowledge is associated with meeting the minimum acceptable diet among children 6-23 months in Ghana*: Annals of Nutrition and Metabolism. Conference: 20th International Congress of Nutrition Granada Spain. Conference Start: 20130915 Conference End: 20130920. Conference Publication: (var.pagings). 63 (pp 1124), 2013. Date of Publication: 2013.
- Gyampoh, S., Otoo, G. & Aryeetey, R. (2013b). Maternal nutrition knowledge is associated with meeting the minimum acceptable diet among children 6-23 months in Ghana.
- Gyampoh, S., Otoo, G. & Aryeetey, R. (2014). Child feeding knowledge and practices among women participating in growth monitoring and promotion in Accra, Ghana. *BMC Pregnancy and Childbirth*, 14(1), 180.
- Gyimah-Boadi, E. (2001). A peaceful turnover in Ghana. *Journal of Democracy*, 12(2), 103-117.
- Hagenaars, A. & De Vos, K. (1988). The definition and measurement of poverty. *Journal of Human Resources*, 211-221.
- Hammersley, M. (2007a). *Ethnography Principles in Practice*. Hoboken: Hoboken: Taylor and Francis.
- Hammersley, M. & Atkinson, P. (2007). *Ethnography Principles in practice* (4th ed.): Routledge.
- Hammersley, M. A., P. (2007b). *Ethnography Principles in practice* (4th ed.): Routledge.
- Hampshire, K., Casiday, R., Kilpatrick, K. & Panter-Brick, C. (2009). The social context of childcare practices and child malnutrition in Niger's recent food crisis. *Disasters*, 33(1), 132-151.
- Hatloy, A., Hallund J Fau - Diarra, M. M., Diarra Mm Fau - Oshaug, A. & Oshaug, A. Food variety, socioeconomic status and nutritional status in urban and rural areas in Koutiala (Mali). (1368-9800 (Print)).
- Hawker, S., Payne, S., Kerr, C., Hardey, M. & Powell, J. (2002). Appraising the evidence: reviewing disparate data systematically. *Qualitative Health Research*, 12(9), 1284-1299.
- Helman, C. G. (2001). *Culture, health, and illness*: Arnold, Hodder Headline Group.
- Heneghan, C. (2009). EBM resources on the new CEBM website. *Evidence Based Medicine*, 14(3), 67-67.
- Higgins, J. & Green, S. (2005). Cochrane handbook for systematic reviews of interventions 4.2. 5 [updated May 2005]. *The cochrane library*, (3).
- Hotz, C. & Gibson, R. S. (2001). Complementary feeding practices and dietary intakes from complementary foods amongst weanlings in rural Malawi. *European Journal of Clinical Nutrition*, 55(10), 841-849.
- Huang, F. L. (2010). The role of socioeconomic status and school quality in the Philippines: Revisiting the Heyneman–Loxley effect. *International Journal of Educational Development*, 30(3), 288-296.
- Huang, X., Lin, J. & Demner-Fushman, D. (Year). Evaluation of PICO as 1693 a knowledge representation for clinical questions. *In*: AMIA Annual Symposium, 2006.
- Indexmundi (2016). External debt stocks, public and publicly guaranteed (PPG) (DOD, current US\$) by Country. 2016.
- Jacob, S. A. & Paige Furgerson, S. (2012). Writing Interview Protocols and Conducting Interviews: Tips for Students New to the Field of Qualitative Research. *Qualitative Report*, 17(42).
- Jacobs, A., Miller, F., Worwood, M., Beamish, M. & Wardrop, C. (1972). Ferritin in the serum of normal subjects and patients with iron deficiency and iron overload. *British Medical Journal*, 4(5834), 206.
- Jana, L. (2011). *Fighting Infection: Baby's Immune System* [Online]. @BabbleEditors. Available: <https://www.babble.com/baby/newborn-immune-system/> [Accessed].

- Jehu-Appiah, C., Aryeetey, G., Spaan, E., De Hoop, T., Agyepong, I. & Baltussen, R. (2011). Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why? *Social Science & Medicine*, 72(2), 157-165.
- Joanna Briggs, I. (2011). *Joanna Briggs Institute Reviewers' Manual: 2011 Edition*: Joanna Briggs Institute.
- Karlberg, T. (2003). *Elderly people in Ghana-about roles and life situation from their own perspective*[Online]. Available: <http://www.orebromissionsskola.se/bilder/uppasatser/2008%20Karlberg,%20Therese%20Elderly%20people%20in%20Ghana%20-%20about%20roles%20and%20life%20situation%20from%20their%20own%20perspective.pdf> [Accessed 20/06/ 2016].
- Kass, N. E., Myers, R., Fuchs, E., Carson, K. & Flexner, C. (2007). Balancing justice and autonomy in clinical research with healthy volunteers. *Clinical Pharmacology & Therapeutics*, 82(2), 219-227.
- Katepa-Bwalya, M., Mukonka, V., Kankasa, C., Masaninga, F., Babaniyi, O. & Siziya, S. (2015). Infants and young children feeding practices and nutritional status in two districts of Zambia. *International Breastfeeding Journal*, 10(1), 1-8.
- Keesing, r. M. (1974). *Theories of culture* [Online]. Available: http://kodu.ut.ee/~cect/teoreetilised%20seminarid_2009%20s%C3%BCgis/1_seminar_KU_LTUUR_29.09.2009/text_1.pd [Accessed 08/09 2016].
- Kerr, R. B., Berti, P. R. & Chirwa, M. (2007). Breastfeeding and mixed feeding practices in Malawi: timing, reasons, decision makers, and child health consequences. *Food & Nutrition Bulletin*, 28(1), 90-99.
- Kimani-Murage, E. W., Madise, N. J., Fotso, J. C., Kyobutungi, C., Mutua, M. K., Gitau, T. M. & Yatich, N. (2011). Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya. *BMC Public Health*, 11.
- Kramer, M. S. & Kakuma, R. (2012). Optimal duration of exclusive breastfeeding. *Cochrane Database Syst Rev*, 8, Cd003517.
- Kruger, R. & Gericke, G. J. (2003). A qualitative exploration of rural feeding and weaning practices, knowledge and attitudes on nutrition. *Public Health Nutrition*, 6(2), 217-223.
- Kvale, S. (2008). *Doing interviews*: Sage.
- Lawrence, M. & Worsley, T. (2007). *Public health nutrition: from principles to practice*. Maidenhead: Maidenhead: Open University Press, McGraw Hill.
- Leechor, C. (1994). Ghana: frontrunner in adjustment. *Adjustment in Africa: Lessons from country case studies*, 153-192.
- Leshabari, S. C., Koniz-Booher, P., Astrom, A. N., de Paoli, M. M. & Moland, K. M. (2006). Translating global recommendations on HIV and infant feeding to the local context: the development of culturally sensitive counselling tools in the Kilimanjaro Region, Tanzania. *Implementation Science*, 1.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., Clarke, M., Devereaux, P. J., Kleijnen, J. & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Annals of internal medicine*, 151(4), W-65-W-94.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75): Sage.
- Little, M. (1999). Research, ethics, and conflicts of interest. *Journal of medical ethics*, 25(3), 259-262.
- Littleton, C. S. (1970). The new comparative mythology. *Western Folklore*, 29(1), 47-52.
- Lloyd, C. B. & Gage-Brandon, A. J. (1993). Women's Role in Maintaining Households: Family Welfare and Sexual Inequality in Ghana. *Population Studies*, 47(1), 115-131.
- Lloyd, L. E., McDonald, B. E. & Crampton, E. W. (1978). *Fundamentals of nutrition*: WH Freeman and Co.
- Lystad, M. H. (1960). Traditional Values of Ghanaian Children. *American Anthropologist*, 62(3), 454-464.
- Malinowski, B. (1922). *Argonauts of the Western Pacific: An account of native enterprise and adventure in the archipelagoes of Melanesian New Guinea*: Routledge.
- Marshall, C. (2006). *Data Collection Methods*. 4th ed. California: Sage.
- Marshall, C. & Rossman, G. B. (2010). *Designing qualitative research*: Sage.

- Marshall, C., Rossman, G. B. & (2006). Data collection. *Designing Qualitative Research*. London: Sage.
- Martorell, R. (1999). The nature of child malnutrition and its long-term implications. *Food & Nutrition Bulletin*, 20(3), 288-292.
- Matsuyama, A., Karama, M., Tanaka, J. & Kaneko, S. (2013). Perceptions of caregivers about health and nutritional problems and feeding practices of infants: a qualitative study on exclusive breast-feeding in Kwale, Kenya. *BMC public health*, 13(1), 525.
- Mauthner, N. S. & Doucet, A. (2003). Reflexive accounts and accounts of reflexivity in qualitative data analysis. *Sociology*, 37(3), 413-431.
- Mbanya, D., Tagny, C., Akamba, A., Mekongo, M. & Tetanye, E. (2007). [Causes of anaemia in African children aged 5 to 10 years]. *Sante (Montrouge, France)*, 18(4), 227-230.
- MICS. (2011a). *Ghana_MICS_Final.pdf* [Online]. Available: http://www.unicef.org/ghana/Ghana_MICS_Final.pdf [Accessed 2013].
- MICS (2011b). Multiple indicator cluster survey
- Mintz, S. W. & Du Bois, C. M. (2002). The anthropology of food and eating. *Annual review of anthropology*, 99-119.
- MoFg (2016). Ghana's Public Debt Report | Ministry of Finance - Government of Ghana. 2016.
- Moodley, K. & Myer, L. (2008). Participant remuneration for research-how much is enough? *South African Medical Journal*, 93(9), 677.
- Mwangome, M., Prentice, A., Plugge, E. & Nweneka, C. (2010). Determinants of appropriate child health and nutrition practices among women in rural Gambia. *Journal of health, population, and nutrition*, 28(2), 167.
- Mwaseba, D. J. B. & Kaarhus, R. (2015). How do intra-household gender relations affect child nutrition? Findings from two rural districts in Tanzania. *Forum for Development Studies*, 42(2), 289-309.
- Nordang, S., Shoo, T., Holmboe-Ottesen, G., Kinabo, J. & Wandel, M. (2015). Women's work in farming, child feeding practices and nutritional status among under-five children in rural Rukwa, Tanzania. *British Journal of Nutrition*, 114(10), 1594-603.
- Norgan, N. G., Bogin, B. & Cameron, N. (2012). Chapter 6 - Nutrition and Growth. In: Cameron, N. & Bogin, B. (eds.) *Human Growth and Development (Second Edition)*. Boston: Academic Press.
- Northstone, K., Emmett, P. & Nethersole, F. (2001). The effect of age of introduction to lumpy solids on foods eaten and reported feeding difficulties at 6 and 15 months. *Journal of human nutrition and dietetics*, 14(1), 43-54.
- Nti, C. A. & Lartey, A. (2007a). Effect of caregiver feeding behaviours on child nutritional status in rural Ghana. *International Journal of Consumer Studies*, 31(3), 303-309.
- Nti, C. A. & Lartey, A. (2007b). *Young child feeding practices and child nutritional status in rural Ghana. [References]:* International Journal of Consumer Studies. Vol.31(4), Jul 2007, pp. 326-332.
- Nurani, L. (2008). Critical review of ethnographic approach. *Journal Sosioteknologi Edisi 14 Tahun*, 7.
- Oeye, C., Bjelland, A. K. & Skorpen, A. (2007). Doing participant observation in a psychiatric hospital— Research ethics resumed. *Social Science & Medicine*, 65(11), 2296-2306.
- Olupona, J. K. (2014). *African religions: a very short introduction* (Vol. 377): Oxford University Press.
- Omer-Salim, A., Persson, L.-Å. & Olsson, P. (2007). Whom can I rely on? Mothers' approaches to support for feeding: An interview study in suburban Dar es Salaam, Tanzania. *Midwifery*, 23(2), 172-183.
- Osei-Assibey, E. (2013). *Inequality in Ghana: A Fundamental National Challenge* [Online]. Available: [file:///F:/Ghana-unicef%20Inequality%20Briefing%20Paper%20FINAL%20DRAFT%20Apr%202014%20\(1\).pdf](file:///F:/Ghana-unicef%20Inequality%20Briefing%20Paper%20FINAL%20DRAFT%20Apr%202014%20(1).pdf) [Accessed].
- Ovans, A. (2015). What is a business model? *Harvard Business Review*, 23.
- Owino, V., Amadi, B., Sinkala, M., Filteau, S. & Tomkins, A. (2008). Complementary feeding practices and nutrient intake from habitual complementary foods of infants and children aged 6-18 months old in Lusaka, Zambia. *African Journal of Food, Agriculture, Nutrition and Development*, 8(1), 28-47.

- PAHO/WHO. (2003). Washington D.C: Pan American Health Organization/World Health Organization.
- Parahoo, K. (2006). *Nursing research: principles, process, and issues*. Palgrave Macmillan.
- Patton, M. Q. (2005). *Qualitative research*: Wiley Online Library.
- Paul, K. H., Muti M Fau - Khalfan, S. S., Khalfan Ss Fau - Humphrey, J. H., Humphrey Jh Fau - Caffarella, R., Caffarella R Fau - Stoltzfus, R. J. & Stoltzfus, R. J. (2011). Beyond food insecurity: how context can improve complementary feeding interventions. (0379-5721 (Print)).
- Pellatt, G. (2003). Ethnography and reflexivity: emotions and feelings in fieldwork. *Nurse researcher*, 10(3), 28-37.
- Pelletier, D. L., Frongillo Jr, E. A., Schroeder, D. G. & Habicht, J.-P. (1995). The effects of malnutrition on child mortality in developing countries. *Bulletin of the World Health Organization*, 73(4), 443.
- Pelto, G. H. & Armar-Klemesu, M. (2011). Balancing nurturance, cost and time: complementary feeding in Accra, Ghana. (Special Issue: Consequences of malnutrition in early life and strategies to improve maternal and child diets through targeted fortified products.). *Maternal and Child Nutrition*, 7(s3), 66-81.
- Pelto, G. H. & Armar-Klemesu, M. (2015). Identifying interventions to help rural Kenyan mothers cope with food insecurity: results of a focused ethnographic study. *Maternal and Child Nutrition*, 11, 21-38.
- Polit, D. & Beck, C. (2012). Essentials of nursing research. *Ethics*, 23, 2.
- Quansah, E. (1991). Custody of children: Customary principles in Ghana and Nigeria. *Commonwealth Law Bulletin*, 17(1), 347-355.
- Quartey, P. (2008). Financial sector development, savings mobilization and poverty reduction in Ghana. *Financial Development, Institutions, Growth and Poverty Reduction*. Springer.
- Raina, S. K. (2013). Limitations of 24-hour Recall Method: Micronutrient Intake and the Presence of the Metabolic Syndrome. *North American Journal of Medical Sciences*, 5(8), 498-498.
- Ramji, S. (2009). Impact of infant & young child feeding & caring practices on nutritional status & health. *Indian J Med Res*, 130(11), 624-626.
- Rao, M. & Beckingham, A. (2013). 1.07 - Food, Nutrition, and Public Health. In: Pielke, R. A. (ed.) *Climate Vulnerability*. Oxford: Academic Press.
- Rice, E., Smale, M. & Blanco, J.-L. (1998). Farmers' use of improved seed selection practices in Mexican maize: Evidence and issues from the Sierra de Santa Marta. *World Development*, 26(9), 1625-1640.
- Rice, L. P. & Ezzy, D. (2000). *Qualitative research methods*: Oxford University Press, Melbourne.
- Ritchie, J., Spencer, L. & O'Connor, W. (2003). Carrying out qualitative analysis. *Qualitative research practice: a guide for social science students and researchers*, 219-262.
- Robinson, J. G. (2011). Ethical pluralism, pragmatism, and sustainability in conservation practice. *Biological Conservation*, 144(3), 958-965.
- Rolfe, G. (2006). Validity, trustworthiness, and rigour: quality and the idea of qualitative research. *Journal of advanced nursing*, 53(3), 304-310.
- Rubin, L. & Murray, P. (1961). *The Constitution and Government of Ghana*: Sweet & Maxwell.
- Ryan, G. W. (nd). *what are standard of rigor for qualitative research* [Online]? Grand Corporation. Available: <http://www.wjh.harvard.edu/nsfqual/Ryan%20Paper.pdf> [Accessed 12/03 2014].
- Salm, S. J. & Falola, T. (2002). *Culture and customs of Ghana*: Greenwood Publishing Group.
- Sam, D. L. (2001). Value of children: effects of globalization on fertility behavior and child-rearing practices in Ghana. *Research Review*, 17(2), 5-16.
- Savin-Baden, M. (2004). Achieving Reflexivity: Moving Researchers from Analysis to Interpretation in Collaborative Inquiry. *Journal of Social Work Practice*, 18(3), 365-378.
- Schoepf, B. G. (1991). Ethical, methodological and political issues of aids research in Central Africa. *Social Science & Medicine*, 33(7), 749-763.
- Schrag, B. (2009). Piercing the veil: Ethical issues in ethnographic research. *Science and engineering ethics*, 15(2), 135-160.
- Sellen, D. W. (2001a). Weaning, complementary feeding, and maternal decision making in a rural east African pastoral population. *Journal of Human Lactation*, 17(3), 233-244.

- Sellen, D. W. (2001b). Weaning, complementary feeding, and maternal decision making in a rural east African pastoral population. *Journal Of Human Lactation: Official Journal Of International Lactation Consultant Association*, 17(3), 233-244.
- Silverman, D. (2010). *Doing qualitative research: A practical handbook*: SAGE Publications Limited.
- Silverman, D. (2013). *Doing qualitative research: A practical handbook*: SAGE Publications Limited.
- Smith, J. & Firth, J. (2011). Qualitative data analysis: the framework approach. *Nurse researcher*, 18(2), 52-62.
- Smith, L. C. & Haddad, L. J. (2000). Explaining child malnutrition in developing countries: A cross-country analysis. Intl Food Policy Res Inst.
- Spradley, J. P. (1979). *The ethnographic interview*: Holt, Rinehart and Winston New York.
- Spradley, J. P. (1980). Participant observation.
- Srivastava, A. & Thomson, S. B. (2009). Framework analysis: a qualitative methodology for applied policy research.
- Stoltzfus, R. J. (2001). Defining iron-deficiency anemia in public health terms: a time for reflection. *The Journal of nutrition*, 131(2), 565S-567S.
- Tabi, M. M., Powell, M. & Hodnicki, D. (2006). Use of traditional healers and modern medicine in Ghana. *International Nursing Review*, 53(1), 52-58.
- Tessema, M., Belachew, T. & Ersino, G. (2013). Feeding patterns and stunting during early childhood in rural communities of Sidama, South Ethiopia. *The Pan African medical journal*, 14, 75-75.
- Thairu, L. N., Pelto, G. H., Rollins, N. C., Bland, R. M. & Ntshangase, N. (2005). Sociocultural influences on infant feeding decisions among HIV-infected women in rural Kwa-Zulu Natal, South Africa. *Maternal and Child Nutrition*, 1(1), 2-10.
- Thorpe, S. A. (1991). *African traditional religions: An introduction* (Vol. 16): University of South Africa.
- Trail, J., d'Ieteren, G., Maille, J. & Yangari, G. (1991). Genetic aspects of control of anaemia development in trypanotolerant N'Dama cattle. *Acta tropica*, 48(4), 285-291.
- UN. (2006). *Dependency ratio* [Online]. Available: http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/demographics/dependency_ratio.pdf [Accessed 01/08 2016].
- UNICEF. (2009). *Tracking progress on child and maternal nutrition: A survival and development priority* [Online]. UNICEF. [Accessed].
- UNICEF. (2016a). *FROM THE FIRST HOUR OF LIFE* [Online]. Available: <https://data.unicef.org/wp-content/uploads/2016/10/From-the-first-hour-of-life-1.pdf> [Accessed 20/11 2016].
- UNICEF (2016b). Types of undernutrition: growth failure - Chronic Malnutrition: Stunting.
- UNICEF, WHO & Bank, T. W. (2012). *Levels and trends in child malnutrition: Joint child malnutrition estimates* [Online]. [Accessed].
- UNICEF, I. (2012). Infant and young child feeding. *Nutrition*.
- Vasilachis de Gialdino, I. (Year). Ontological and epistemological foundations of qualitative research. In: Forum Qualitative Sozialforschung/Forum: Qualitative Social Research, 2009.
- Wagner, R. (1981). *The invention of culture*: University of Chicago Press.
- Ward, D. J., Furber, C., Tierney, S. & Swallow, V. (2013). Using framework analysis in nursing research: a worked example. *Journal of advanced nursing*, 69(11), 2423-2431.
- Whitehead, T. (2004). What is ethnography? Methodological, ontological, and epistemological attributes. *Ethnographically Informed Community and Cultural Assessment Research Systems (EICCARS) Working Paper Series, University of Maryland. College Park, MD*.
- Whitehead, T. L. (2005). Basic classical ethnographic research methods. *Cultural Ecology of Health Change*.
- WHO (2005). Guiding principles for feeding non-breastfed children 6-24 months of age.
- WHO (2008). Indicators for assessing infant and young child feeding practices: part 1: definitions: conclusions of a consensus meeting held 6-8 November 2007 in Washington DC, USA.
- WHO.(2014). *Exclusive breastfeeding*[Online]. Available: http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/ [Accessed 06 2014].
- WHO (2015). WHO | 10 facts on breastfeeding.
- WHO (2016). Ghana. 2016.
- WHO & UNICEF (2003). Global strategy for infant and young child feeding.

- Winkelman, M. (2008). *Culture and health: applying medical anthropology*. John Wiley & Sons.
- Wolcott, H. F. (1999). *Ethnography: a way of seeing / Harry F. Wolcott*. Walnut Creek ondon: AltaMira Press.
- Wondafrash, M., Amsalu, T. & Woldie, M. (2012). Feeding styles of caregivers of children 6-23 months of age in Derashe special district, Southern Ethiopia. *BMC Public Health*, 12, 235-235.
- WorldBank. (2014). *Ghana* [Online]. Available: <http://www.worldbank.org/en/country/ghana> [Accessed 06/2014].
- Worldfactbook (2016). The World Factbook " Central Intelligence Agency. 2016.
- Wyatt, A. J., Yount, K. M., Null, C., Ramakrishnan, U. & Girard, A. W. (2015). Dairy intensification, mothers, and children: an exploration of infant and young child feeding practices among rural dairy farmers in Kenya. *Maternal and Child Nutrition*, 11(1), 88-103.

Appendices

Appendix 1: Snapshot of literature search from Web of science database

The screenshot shows a Web of Science search results page. The search criteria are: **TOPIC:** (nutri* practices Or weaning practices Or customary feeding practices Or cultural feeding practices) AND **TOPIC:** (child* Or children under-five years old OR early childhood OR infant Or Pre-school) AND **TOPIC:** (House* Or families Or communities Or ethnic groups) AND **TOPIC:** (rural populations Or developing countries Or challenging settings Or low income settings Or Africa). The results are sorted by **Publication Date -- newest to oldest**. The first four results are:

- Combining Intensive Counseling by Frontline Workers with a Nationwide Mass Media Campaign Has Large Differential Impacts on Complementary Feeding Practices but Not on Child Growth: Results of a Cluster-Randomized Program Evaluation in Bangladesh**
By: Menon, Purnima; Phuong Hong Nguyen; Saha, Kuntal Kumar, et al.
JOURNAL OF NUTRITION Volume: 146 Issue: 10 Pages: 2075-2084 Published: OCT 2016
- Handwashing, sanitation and family planning practices are the strongest underlying determinants of child stunting in rural indigenous communities of Jharkhand and Odisha, Eastern India: a cross-sectional study**
By: Saxton, Jennifer; Rath, Shibanand; Nair, Nirmala, et al.
MATERNAL AND CHILD NUTRITION Volume: 12 Issue: 4 Pages: 869-884 Published: OCT 2016
- Dietary diversity predicts dietary quality regardless of season in 6-12-month-old infants in south-west Ethiopia**
By: Wondafrash, Mekitie; Huybregts, Lieven; Lachat, Carl, et al.
PUBLIC HEALTH NUTRITION Volume: 19 Issue: 14 Pages: 2485-2494 Published: OCT 2016
- The impact of a conditional cash transfer programme on determinants of child health: evidence from Colombia**
By: Lopez-Arana, Sandra; Avendano, Mauricio; van Lenthe, Frank J., et al.
PUBLIC HEALTH NUTRITION Volume: 19 Issue: 14 Pages: 2629-2642 Published: OCT 2016

Appendix 2: Summary of review findings and Characteristics of included papers

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Qualitative methods					
Aborigo et al., 2012 WA/Ghana	To explore feeding practices of infants in the first seven days of life in a resource poor- setting	Explorative qualitative design In-depth -interviews and focus group discussion	Purposive sampling of 35mothers with newborn infants 8 traditional birth attendants and healers 16 community leaders 78 households and 22 compound head 81 grandmothers	<p>All community participants Knowledge of breastfeeding guidelines:</p> <p>such as; Putting children to breast immediately after birth, colostrum cleans inside of children, make children strong</p> <p>Breast milk protects against disease</p> <p>No water until six months</p> <p>Source of knowledge: nurses and midwives.</p> <p>Initiation and continuous breastfeeding:</p> <p>prevalent breastfeeding, breastfeeding starts under 1 hour after birth</p> <p>Determinants of Breastfeeding:</p> <p>place of birth, sex of child, taste of breast milk, availability of breast milk, age of mother</p>	<p>Strengths</p> <p>Clear abstract, aim and background information justifying study</p> <p>adequate information on context</p> <p>Sampling was clearly justified</p> <p>Triangulation of data sources</p> <p>Use of participants home is good opportunity for participants to relax and respond to interviewers</p> <p>Use of multiple individuals in the analysis of data means rigour of the process</p> <p>Very elaborate description of the analysis process</p> <p>Themes in results are presented with verbatim quotes from participants</p> <p>Limitations discussed</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Ignoring guidelines</p> <p>anxiety of mothers due to sickness of child</p> <p>complementary feeding</p> <p>new-borns fed with; grip water, flour or guinea corn water, warm water, formula</p> <p>Local healers prescribe supplementing diet when children do not suckle adequately</p> <p>cultural practices:</p> <p>testing the bitterness/poisonous breast milk, treating breast milk prior to children sucking, cleansing of first time mothers whilst child consumes herbal preparation or wet nursing(being rejected because of diseases)</p> <p>seeking the assistance of soothsayers to diagnose problems with child food refusal</p> <p>sacrifices to as part of consultation</p> <p>Religion:</p> <p>Traditional African religious believers</p>	<p>Limitations</p> <p>Theoretical bases of methodology not stated</p> <p>Sample calculation was mentioned, though a qualitative approach</p> <p>Though report mentioned the development and pre-testing of data collection, content was not reported</p> <p>No indication of what data was elicited from health personal and community members</p> <p>Use of many interviewers to collect interviews may prevent the identification of new concepts due to dilution</p> <p>Inconsistency participant numbers cast doubt on actual numbers</p> <p>Uncertain with how the data was managed considering the volume of data qualitative interviews and focus group discussions can generated, could depth be lost?</p> <p>Issues mentioned are not completely</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>engage in newborn rituals and cleaning mothers rituals delaying breastfeeding initiations, Christians do not</p> <p>Grandmothers: Grandmothers insist on cultural practices which was confirmed my health workers</p> <p>Location of birth: Hospital births associated with early initiation of breastfeeding and continuous breastfeeding</p> <p>Colostrum may be expelled with home births</p>	<p>discussed</p> <p>Though results on some traditional practices did not show these were imposed by men discussion appears to suggest that. This is actually inconsistent with their report that grandmothers were more of the challenge</p> <p>Interviews questions for health professionals could be improved if same interviewers did all the interviews</p> <p>Specific content elicit was not stated.</p>
Kruger & Gericke, 2003 SA/South Africa	Exploration of rural feeding and weaning practices and knowledge and attitudes on nutrition	Qualitative Structured interview schedule with FGD	mothers/ caregivers0-3yrs	<p>Breastfeeding choice of baby feeding:</p> <p>Quantity of breast milk fed to children was not considered by mothers breastfeeding was done to;</p> <p>stop children crying</p> <p>Pacify them</p> <p>Put children to sleep</p> <p>Quench thirst</p>	<p>The research aim was not clear, as it indicated that, the study was to study practices and attitudes towards mothers,</p> <p>Eventually, the study actually reported on practices of mother and caregivers of children under 36 months</p> <p>Rationale for using FGD is flawed. FGD is associated with lack of privacy, but authors indicated it was used</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>No ecbf, breast feeding was supplemented with food if it was perceived that BF was not sufficient for children.</p> <p>Children 2 & 3 months had other foods besides BM and by 7-9 months a mix of family foods</p> <p>Bottle feeding alternative when breastfeeding was impossible (illness & breast illness) & choice, lack of milk, reduced breast milk)</p> <p>Low use of cow milk due to; Hygiene reasons (unpasteurised) Perceived inadequate nutritional adequacy Powdered milk would be used for bottle feeding</p> <p><i>No link between nutrition or food intake with children health status</i></p>	<p>because of sensitivity of issues (not mentioned)</p> <p>Qualitative design is most appropriate to understand practices and attitudes</p> <p>However, structured interviews do not provide opportunity for probing to unearth underlying rationales for practices</p> <p>Practices of feeding, in particular, are physical and use of observation, a seeing data collection method would be a better choice of actually witnessing the practices.</p> <p>So many concepts mentioned were not explained, making it difficult to understand many things from the methodology</p> <p>e.g. six age groups related to six phases of diet changes is not known and no reference provided</p> <p>collecting data at the clinic was not appropriate as participants could be influenced by the power imbalance the setting</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Food type, variety and quantity not considered in children feeding, Child appearance, and growth chart indicators are the consideration in feeding children</p> <p>Introduction of solid food knowledge was inadequate</p> <p>Food textures ranged from very watery to soft.</p> <p>Children food description, overcooked, over washed and over diluted</p> <p>Soft maize porridge was fortified with margarine and powdered milk.</p> <p>Not to allowed to eat same pot with pregnant mother</p> <p>Meals per day was 3+ for children:</p> <p>hunger</p> <p>satiety,</p> <p>stomach capacity</p> <p>adequate growth</p>	<p>Besides using validity and reliability strategies to ensure quality of qualitative study, authors did not also indicate how the process of ensuring quality was done.</p> <p>Analysis was had more information, but terminology was reflective of commonly known relate terminology.</p> <p>Contrary to the weaknesses of the methodology, a lot of data was presented.</p> <p>No informed consent mentioned</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Awumbila, 2003 /WA/Ghana/	examines infant feeding practices of women with children 0-6 month	qualitative research methods: FGD, 24hr dietary recall & food frequency assessments and observations in-depth interviews	30 mothers of Children 0-6 months 24key informants (opinion, religious, traditional healers, birth attendants, grandmothers or mother in- laws)	Household structured for polygamous extended families Men as household heads and breadwinners No inheritance for women but has to rely on male family members for resources. Initiation of BF Breastfeeding is widespread Starts hours to 3 days after birth Initiation of BF depends on mother in- law Delay in initiating BF is to allow blood contaminated BM to convert to breast milk Water and herbs are used prior to that An extinct gender based feeding existed. Boys were breastfed after 3days and girls after 4 days. Colostrum though considered clean has mostly been fed to children wet nursing was done in waiting to expel colostrum	The aim of the paper was not clearly stated. It was not clear where the author centred on only BF or feeding in general. Insufficient information on the design and the data collection methods mentioned. The basic tenants of such methods were not evident in the reports for judgement Even though a brief mention of the areas of data collection was mentioned, data analysis was not mentioned Whereas the authors gave an aim of studying breastfeeding, the results presented were also about solid feeding. No informed consent was mentioned

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>for those who still practice it.</p> <p>However, most mothers consider it unhealthy</p> <p>EBF</p> <p>1/3 of the children 0-6 were ecbf</p> <p>Religion and custom was the reason for low ecbf</p> <p>Water herbs sheabutter and glucose are given 1-3 days after birth</p> <p>The substances have various purposes:</p> <p>Shea butter fills tommy of children</p> <p>Herbs and gripe water remedy or prevent abdominal and naval pain</p> <p>Welcome baby into wealth</p> <p>Ecbf was perceived by most mothers as almost impossible</p> <p>Express bm a strategy to promote ecbf is culturally unacceptable in the community</p> <p>Introduction of complementary</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>feeding;</p> <p>Koko the commonest initial food, a highly diluted fermented millet or maize porridge is introduced at 2 months</p> <p>The porridge is gradually thickened as children grow.</p> <p>It is thicker at 6 months at which time children may eat other family foods.</p> <p>Reasons for early introduction of foods;</p> <p>Teach children for future eating skills</p> <p>Prevent mothers from reducing weight</p> <p>Mothers work away from home (market/farm)</p> <p>Leaving children in the care of others e.g. Siblings</p> <p>weaning</p> <p>ends between 24-48 months</p> <p>pregnancy may make this time shorted</p> <p>Roles individuals in kids feeding:</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Mothers;</p> <p>Bear children, do housework, provide Child care</p> <p>Utilise approval received from elderly women to enhance their activities</p> <p>With age, they enter decision making</p> <p>Delegate their duties to younger wives or sister's in-laws</p> <p>Mother's in-laws;</p> <p>Key decision makers in infant feeding</p> <p>Bf initiation, Weaning, Complementary feeding</p> <p>Their recommendations are based on customs and beliefs</p> <p>Mothers eventually become mothers' in-laws and hold similar power like them.</p> <p>Beliefs, values, and perceptions of children feeding:</p> <p>Long duration of bf</p> <p>Introduction of pre-lacteal, early</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				introduction of complementary foods Water to welcome new-borns Lactating mothers not to eat specific foods No bf lying down etc.	
Thairu et al, 2005/ SA/SA/	Sociocultural, economic and psychological influences of infant feeding practices	ethnographic study	Convenient sample of 22 HIV positive mothers	Feeding choices in HIV/stigma: Choice of feeding and declaration of HIV status stigmatisation Fears of infecting children with mixed feed or breastfeeding Hide status to breastfeed successfully Family influences: Senior women's decisions to give children other feeds when they are crying versus choice of mother to exclusively breastfeed Independence is a challenge in feeding choice	Strengths Informed consent mentioned Rationale for specific community given Analysis described was clear but pictorial evidence of content of the various stages would make it more transparent. Results were effectively presented. Clearly stated themes with verbatim quotes. weaknesses No mention of how recruitment process was and how No triangulation makes results

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Economics</p> <p>Lack of money to buy formula in replaced feeding</p> <p>Beliefs about transmission to children</p> <p>Fear infecting children results in replaced feeding by some women</p> <p>Breast milk quality perception:</p> <p>Breast milk superiority</p> <p>Protects against diseases</p>	<p>difficult to accept</p> <p>Though author emphasized on ethnography, only interviews were used and appeared more of a snapshot, single point interview than ethnographic.</p>
Jegade et al, 2006/ WA/Nigeria,	To describe forced feeding of children and the contributory factors.	Ethnographic design with narrative interviews Focused group discussion Non-participant observations	N=27 men, women, health workers and community leaders	<p>Child lying on mums' laps and nose blocked whiles food pour in mums' hand attached to child mouths for child to take in food when attempting to breath orally,</p> <p>Passed down from mothers Quick to get food into children ill-fed children are difficult to manage all measures to get child to feed must be applied</p> <p>Mother in-laws' insistence or actions</p> <p>It creates intimacy as child lies on mum's</p>	<p>Strength</p> <p>Data collection instruments were pretested and corrected</p> <p>Confidentially of patient information maintained</p> <p>Results presented with verbatim quote</p> <p>Weaknesses</p> <p>Limited and incomplete information</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				lab to feed. it is used generally for bitter medicines that kids do not always want to take	on the Data collection methods and inconsistencies in some cases, e.g. fieldwork was six months and then data collection lasted six months? No ethical approval mentioned. Re-transcription of sampled audiotaped interviews to ensure integrity of data inadequate information about data analysis,
Omer-Salim et, 2007 /EA/Tanzania		Qualitative semi-structured interview	N=8mothers of children 6months and below	Mother perceptions and approaches to baby feeding; Crying means insufficient breast milk and need for H2O or porridge Water and BM can all be given to child Grandmothers suggests add others feeds Too much sun means quick thirst and BM is inadequate Water giving 2days after birth is traditional. Crying is a signal to feed a child with other foods Individuals in baby feeding;	Strengths Context well presented Informed consent Interview guide tested and back-translated Content of guide stated Influences Only to have considered reflexivity and accounted for their influences Analysis was relatively clear. Results had verbatim quotes to explain themes

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Support for care include friends' family friends neighbour advise</p> <p>Experiences</p> <p>Older women are particularly key in advising how to feed the child & contradict health workers teaching</p> <p>All sources of child feeding information are valid</p> <p>Team corporation is necessary for child care especially with mothers who work away from home</p> <p>Though final feeding decisions rest with mothers their absence cannot ensure that decision taken are implemented by secondary caregivers</p> <p>Advices may be contrary to clinics</p> <p>Motivation and experience of mothers determine their line of action</p> <p>Fathers are laidback and children feeding decisions</p> <p>Child feeding and other activities:</p> <p>Child feeding regarded as any other</p>	<p>Weakness</p> <p>Recruiting directly at the clinic could make sample potentially bias as well as collecting data could be influenced</p> <p>Responses to questions</p> <p>Use of nutritionist as an interviewer and their role in the research make it difficult to judge the data</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				household chore & all must adjust to each to each other	
Bezner Kerr et al., 2008 /SA/ northern Malawi,	examine grandmothers' role and views of child feeding practices in	Qualitative case study: semi-structured interviews focus groups and a participatory workshop. Semi-structured interviews on childcare and feeding practices were carried out with 21 informant Interviews and focus groups: the five authors, As well as a Canadian nutritionist.	older women, traditional medicine practitioners, young women, and food insecure house-holds)	<p>Role of grandmothers:</p> <p>Paternal grandmothers are usually the prime contributors of care providing physical assistants and making decisions:</p> <p>Introduction of foods</p> <p>Identifying illness with the child</p> <p>Identify the adequacy of mothers' breast milk</p> <p>Suggested when breastfeeding should be ended and took children with them.</p> <p>Food introduced before six months:</p> <p>Water, root infusions</p> <p>Porridge</p> <p>Porridge and water combined</p> <p>Reasons:</p> <p>Root infusions protect against illness</p>	<p>Weakness</p> <p>Presented information about a different that was not relevant to current study confusing reader reliability and validity were used to denote that without information to explain the meanings of that</p> <p>Strengths</p> <p>Grounded theory principles were used to ensure quality of data,</p> <p>Very elaborate background</p> <p>Results were adequately demonstrated with verbatim quotes</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>sometimes before breastfeeding commences</p> <p>Insufficient breast milk requires supplementing with porridge or water.</p> <p>GM power and other practices:</p> <p>They play very significant roles in their sons marriage life and can recommend anything including child care, that binds the marriage more than mothers and health carers</p> <p>They disagree with the frequency of feeding children</p> <p>Sexual abstinence is essential according to Gm's after birth to prevent malnutrition</p> <p>Grandmothers sent porridge and root infusion to secretly feed children in hospitals.</p> <p>Were noted as barriers to nutrition education by health workers</p> <p>Most mothers lie to health workers on exclusive bf.</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
(Fouts and Brookshire, 2009/ CA/Republic of Congo	identifying who is directly providing food to children, we explore three factors that may predict child feeding Involvement by various individuals.	8 months of ethnographic fieldwork	22 families with children between two and four years of age	Food providers Mothers alone provision of food to children is equal to what all other members of the family provided for the children Mothers were more likely to provide food for children who did not have younger siblings	A very confusing methodology. Ethnographic with observations It is completely flawed to do statistical analysis of data collected qualitatively from 8 women with no sampling technique described and no total population known Results were inappropriately presented in stats
Hampshire et al, 2009/ WA/Niger/	Explore the cultural context of child care practices and nutritional vulnerability	Qualitative anthropological study, with semi- structured interview, direct participant observation & informal focus group discussions	N=: 40mother N=9 siblings(9- 18yrs) & N=6grandmot hers of children	Millet based foods and medicinal herbs infusions are given to children right from birth. Commonly given food to children is millet with large amounts of water & sometimes milk curd are given to kids (good quantitative. but qualitative?) Quant reduces with scarcity	Strength Ethical approval obtained Very elaborate background and clear aim Results presented with quotes

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
			<p>under five years</p> <p>N=13village chiefs/elder</p> <p>N=25Women groups, TBAs, and traditional leaders</p>	<p>Millet food is communally eaten, not shared even kids have to help themselves</p> <p>Meat and other high qual. foods are shared (Frs. take the best portions)</p> <p>Children over 1 yr. eat with other kids communally</p> <p>Weaning and sick children are not treated specially</p> <p>Identity/status in clothes and utensils than child care cost</p> <p>Polygamy, uncooperativeness =reduced or not using of wealth for family wellbeing</p> <p>Older wife kids could be neglected</p> <p>No breastfeeding when pregnant</p> <p>Early weaning maybe in preparation for unforeseen pregnancy</p>	<p>Weakness</p> <p>Very little information on methods, data collection, and analysis for assessing study qualitative</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Mwangome et al, 2010/ WA/Gambia/	Explore factors determining mother's choice child health and nutrition practices	Qualitative/ Focus Group Discussion	63 mothers of children <3years	<p>Women, the main breadwinners:</p> <p>Women sole care for children</p> <p>Women work and neglect child feeding sometimes</p> <p>Men do not help in child care?</p> <p>Food allocation:</p> <p>Men eat best quality & bigger share of food at home</p> <p>Children eat second best</p> <p>Household decision making;</p> <p>Men make or influence decisions</p> <p>Men may marry more with money obtained</p> <p>Women respect for men</p> <p>Poverty & women breadwinner roles:</p> <p>Absence of resources for food</p> <p>Women go out to find food Children are</p>	<p>Weaknesses</p> <p>Not good abstract</p> <p>Design not explicitly stated</p> <p>Verbal consent obtained Very limited information about the data analysis</p> <p>Strengths</p> <p>Sampling information scanty.</p> <p>Clear aim</p> <p>Results partially well presented.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>left with children while mothers work if no other networks (senior siblings*GMs, friends)</p> <p>Beliefs on sickness and cause of malnutrition:</p> <p>Malnutrition is blamed on evil spirit, season and not food.</p> <p>Nutritional concept not explored.</p>	
Ogunba, 2010 /WA/Nigeria	450 mothers of children under 0-24 months	interviews		<p>Caregivers in the feeding of children:</p> <p>Mothers grandmothers nannies and day-care centres</p> <p>Those including fathers and children themselves feed the children.</p> <p>Introduction to complementary feeds:</p> <p>1-7 months was the range of time for commencing cf.</p> <p>A mixture of utensils was used in the feeding of children.</p> <p>Feeding ranged from autonomous to</p>	<p>Too many aims for the study, Methodology not specified</p> <p>Inappropriate data collection for number of participants</p> <p>Inappropriate data analysis methods for type of data generated and</p> <p>Limited data on data collection</p> <p>Poorly presented results.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>being feed. Age groups not stated?</p> <p>Cues of hunger:</p> <ul style="list-style-type: none"> Child crying Asking for food Being irritable <p>Cues of fullness:</p> <ul style="list-style-type: none"> Refusal to eat more Played with food Played around Observed increase in size of abdomen <p>Measure for promoting children feeding:</p> <ul style="list-style-type: none"> Force feeding Encouraging Use of drugs <p>Feeding settings:</p> <ul style="list-style-type: none"> Anywhere in the house <p>Relating with children during</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>feeding;</p> <p>Caregivers sat and talked with children whilst they ate.</p>	
<p>Pelto and Armar-Klemesu, 2011 /WA/Ghana</p>	<p>examined the multiple factors that influence the selection of foods for infants and young children in this urban setting</p>	<p>focused ethnographic study protocol: interviews 24hr recall</p>	<p>30 Caregivers of children 6–24 months of age.</p>	<p>Numbers of meals per day: Children under 8 months were not fed the recommended mothers, but 9-24 were fed accurately.</p> <p>Diets of children Family staple foods, cereals, porridge(Hausa coco and cerelac dominated) Weanimix was not common in the diet</p> <p>Age related foods: Breakfast: Infants would be given cereals, whilst young children may take tea or milo sometimes without bread</p> <p>Lunch; Children would take similar family food for lunch.</p> <p>Fruits were not present in the recalls though in interviews mothers think</p>	<p>Clear objective, appropriate methodology, and well explained sampling process.</p> <p>Interview protocol pre-existing, little information about.</p> <p>Context of study indicated.</p> <p>Data analysis moderately explained.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>children should be given fruits especially juices</p> <p>Participants perspective of optimal children's diet;</p> <p>16 food most of which were not in the 24hr recalled foods</p> <p>5 were porridges, which were also associated with children under 8 months</p> <p>Whilst families foods were those mostly mentioned for the age above 8 months</p> <p>Mothers views on health and nutrition</p> <p>Most mothers discuss in general others did not mention nutrition in relation to health until they were prompted</p> <p>Others found it easy to feed their children and others difficult to feed children.</p> <p>Decision making in the feeding of children;</p> <p>Health of food</p> <p>Cost...Influences Child willingness to</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>feed ease of obtaining food</p> <p>Difference in food items;</p> <p>Porridge and cereals:</p> <p>Hausa koko was ranked the worst</p> <p>And commercial cereals having diverse opinion on them peanut butter, fish powder soy flour were noted as good for fortifying Hausa koko, but milk and cerelac were ranked high</p> <p>Family foods:</p> <p>These were almost considered by consensus nutritious</p> <p>Mothers conception of healthy foods;</p> <p>Whilst some mothers had the concept of nutrients and different nutrients as coming together to make healthy food, others did not.</p> <p>Fruits to a mother are not food.</p> <p>A mother has never heard vitamins</p> <p>manufactured food is healthy food to a</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>mother only homemade food is safe and healthy</p> <p>Children acceptance determines mothers' food choices.</p> <p>Poverty, food insecurity and food cost;</p> <p>Mother suggests that even if they knew what to feed their children, they could not provide it consistently</p> <p>Influences on food choices;</p> <p>Husband provide money for food</p> <p>Child welfare nurses</p> <p>Mothers</p> <p>Sisters etc.</p> <p>Access and distance to obtain food;</p> <p>More expensive food was closer to households</p> <p>Hausa koko was next though cheaper version</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Weanimix is the less accessible food.</p> <p>Homemade foods had different variation of access among participant indicating the variation in proximity to individuals households</p> <p>Competing activities means short distances make it easier to choose food one deem appropriate for their children</p>	
Matsuyama et al, 2013/ EA/Kenya/ 2011	Identify how and why caregivers engage in certain feeding practices	Qualitative methods/ in-depth ethnographic interviews & Direct observations	<p>N=30households with children under 2yrs</p> <p>N=key informant:</p> <p>16: mother; 7 grandmothers</p> <p>4 traditional healers, 1 health staff</p>	<p>Under 6months feeding:</p> <p>Secluded 40days postnatal to prevent evil eye during breastfeeding which may cause abdominal pain</p> <p>Children are fed before 6month perception of insufficient BM</p> <p>Syringes, bottles, and fingers are mediums of feeding children</p> <p>Substances given during this time:</p> <p>Water</p> <p>Over the counter medications</p>	<p>Strengths:</p> <p>Choice of study design clearly defined</p> <p>Sampling techniques mentioned but not explained</p> <p>Descriptive discussion of analysis</p> <p>Well-presented results.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Herbs</p> <p>Sugar solution</p> <p>Mother in-laws advice to give herbs/ mum thoughts</p> <p>Reasons for pre6month feeding;</p> <p>Baby crying is a way of knowing insufficient breast milk</p> <p>Orange juice make baby fat</p> <p>Salt, sugar solution give kids appetite</p> <p>Gripe water to acclimatise child stomach with breast milk</p> <p>Herbs fluids and maize based porridge are popular food for kids</p> <p>Spoon & cups are common feeding style, but fingers and syringes also</p> <p>Insufficient milk syndrome</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Aubel, Toure & Diagne 2004 /WA/ Senegal/2004	Summarise the role of grandmothers in child and maternal health and nutrition	Qualitative community study 33focus group discussion	76 WRA(10 groups); 60 men with children under five (eight groups); 10 male CLs (5 groups); and 114 grandmothers (10 groups).	Grandmothers give advice in the households. They give help in work. They mediate and resolve conflicts Supervise children and WRA Play lead role in child /WRA Perceived as having those expertise, they diagnose, prescribe and administer or recommend administration of treatment They determine what should or not be eaten by WRA/children Drink herbs Wear spirit expelling talisman 4Eating less to avoid big foetus Work hard during pregnancy Wait and initiate breastfeeding later: Child mouth/throat to open Colostrum to finish	Conceptual underpinning stated Results presented with verbatim quotes Triangulation of data from more than one source Limited details on analysis of data Appropriate method Data collection moderately described.

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Breast milk to come</p> <p>Roles in households</p> <p>Age and experience make them revered as knowledgeable in maternal and child health in particular but also socialisation in other aspects of life.</p> <p>MCH specific roles of grandmothers:</p> <p>Younger women are described as blind and cannot be relied upon to independently manage children such as feeding</p>	
Pelto and Armar-Klemesu, 2015 /EA/Kenya	to identify potential interventions to improve the quality, availability, and affordability of foods consumed by infants and young children	ethnographic study	key informants (N=at least 8–10 individuals in a study site) and Community observations. The results from Phase 1 are Analysed and	<p>IYC diet within family foods;</p> <p>Millet porridge are special for infant</p> <p>IYC start having family core at the second half of their 1st year and share family food from then onwards</p> <p>Food sources;</p> <p>Buying</p> <p>Producing</p>	<p>strengths</p> <p>Clear aim,</p> <p>Conceptual framework</p> <p>Philosophical underpinning of design</p> <p>Appropriate design for phenomena</p> <p>Ethics and consent obtained</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
			<p>used to fine-tune the modules for Phase 2.</p> <p>Phase 2, which is conducted with a small representative sample of at least 32 caregivers of infants and young children (6–23months of age),</p>	<p>Borrowing</p> <p>Household food production;</p> <p>Though households produce food, not much of it is used for home consumption</p> <p>Most of food especially for IYC feeding is bought from market.</p> <p>Millet which is the preferred staple for children porridge is minimally produced by the study communities.</p> <p>Food insecurity and children feeding;</p> <p>Seasonal shortage of food</p> <p>Absence of food</p> <p>Absence of money to buy other foods to prepare kids diet</p> <p>Variety:</p> <p>Food quality and variety is compromised during these times</p> <p>Maize which is not usually considered good for children diet is rather used</p>	<p>Weaknesses</p> <p>Inadequate information about analysis</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Vegetables are not available for stews</p> <p>Number of feeds;</p> <p>Number of meals are reduced</p> <p>Food allocation is shifted to ensure that children ate better than adults</p> <p>However, most feed is not just nutritional but social as well</p> <p>Hungry children cry and disturb adults so food is given to them to reduce their disturbance of adults.</p> <p>Roles of individuals in the provision of IYC food:</p> <p>Women have the food production roles which puts food on the table for children</p> <p>But also have the care roles</p> <p>These 2 can make both insufficient especially without social support from other family members for both.</p> <p>Diet and feeding of IYC is then affected by these.</p> <p>Mothers cultural value of their roles</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>in the care of children and consequences for children feeding;</p> <p>Mothers consider themselves responsible for the wellbeing of children</p> <p>Depression can then end in mothers' efforts and ability to care affecting their IYC feeding related activities.</p> <p>Strategies for managing IYC feeding in families:</p> <p>These strategies included non and income generating activities, ranging form</p> <p>Farming, selling, providing labour and petty trading</p> <p>Borrowing</p> <p>Remittance from husbands</p> <p>Benefits</p> <p>Crediting foods</p> <p>Family structure:</p> <p>Large family or small have positives and</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>negatives to children feeding</p> <p>Depending on the sources of income</p> <p>Ability of family members to contribute care and support mothers</p> <p>Smaller families put pressure on mothers as they are alone to care for the children needs</p> <p>Other effects</p> <p>Water absence prevent preparation of food</p> <p>May make mothers travel far compromising feeding times.</p> <p>Food storage and preparation;</p> <p>Fire wood acquisition is hard and expensive</p> <p>Food is cooked and stored may not be reheated because of economics of firewood</p> <p>Absence of fridges for storing compromises quality of food</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Understanding of food to children;</p> <p>Concept of food for health, growth, and development is positive.</p> <p>Biomedical interpretation of child nutrition!</p>	
Leshabari et al, 2006/EA/ Tanzania	To identify existing beliefs and behaviour of feeding infant of HIV mothers	Mixed Qualitative formative research 15 interviews 8 focus group discussion	Traditional birth attendants Community elders, community health team members Nurse counsellors	<p>Exclusive breastfeeding is not a customary practice</p> <p>Also not feasible because mothers had to resume work outside home</p> <p>Perception of breast milk not always be sufficient</p> <p>General belief that babies need water: boiled and gripe water is given alongside breastfeeding. Water is given at least once daily</p> <p>Complementary foods introduced by 3 months of children life:</p> <p>Light porridge with Cow's milk</p> <p>Diluted cow milk also supplements BM</p>	<p>Strengths</p> <p>Context of the study clearly stated</p> <p>Methodology moderately justified</p> <p>Transferability is easily recognisable and indeed applicable</p> <p>Limitations</p> <p>Sample size and sampling technique not stated</p> <p>There is not adequate information on data collections methods and analysis</p> <p>Results were not adequately presented to represent participants' perspective.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Formula used by few</p> <p>Formula considered expensive</p> <p>Inappropriate for children</p> <p>Expressing breast milk perceived as cause of stillbirths</p> <p>Breast milk must not be heated</p> <p>knowledge ad and time consuming advocate discard</p> <p>wet nursing no more advocated because of HIV</p> <p>Breastfeeding used by mothers to demonstrate good mother status as it is a community value</p> <p>Social pressure and lack of control determine mothers choice of feeding</p> <p>Mother must live with mother in-laws, who require mothers to breastfeed and give water with mother unable to refuse</p> <p>Mothers give water and food to preserve their own energy/prevent stigma</p> <p>Mother who had prior knowledge</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>provided by health professionals were more informed on issues than other members of the community who did not have such information</p> <p>nurse worker perspectives</p> <p>perceive replacement feeding as best for HIV mothers</p> <p>but commercial formula was expensive</p> <p>did not promote exclusive breastfeeding because of perception that mothers may not comply</p> <p>feeding option information giving was characterised by giving options and advocating a specific one</p> <p>no practical guidance</p> <p>no supportive dialogue</p>	
Quantitative methods					

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Hotz and Gibson, 2001/SA/Malawi	To estimate nutritive quality and quantity of complementary diet and identify feeding practices and dietary modifiers	Cross sectional survey: 24hr recall of diet Feeding practices questionnaire Anthropometric survey	163 Mother of children 0-24 months	<p>Breastfeeding</p> <p>All children are breastfed</p> <p>Breastfeeding up to second year. of child's age</p> <p>50% of mothers gave non-nutritive fluids before 4 months of child's age</p> <p>Reasons for fluids food is:</p> <p>mothers perceptions of inadequacy of breast milk</p> <p>always crying, baby</p> <p>All children received complementary foods by 4 months</p> <p>Foods given to kids included;</p> <p>Light (before 6 months) and hard (after 6 months of age)maize porridge</p> <p>Complementary feeding frequencies were;</p> <p>children 6 – 8 months = 4; 9 -11months =5; and 12- 23 months =5</p> <p>Content of complementary foods:</p>	<p>Weaknesses</p> <p>Methodology not appropriate for all variables (attitudes/practices) in the study. These could be best described with qualitative observations</p> <p>Sampling not described limiting generalisation of results to similar population.</p> <p>Potential high recall bias, because of the use of data collection tool</p> <p>No description of questionnaire development</p> <p>Limited details on analysis of data</p> <p>Strengths</p> <p>Listed the data collection tools</p> <p>Ethical approval obtained</p> <p>Content of questionnaire and pre-tested done to validate</p> <p>Single recall interview cannot give a pattern of feeding</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>In the 6 -8 month median intakes of energy and all nutrients presented, except for protein, >80% of The estimated needs.</p> <p>In the 9 - 11 month age group, (niacin and calcium, and zinc and iron bioavailability levels, inadequate); energy and riboflavin marginally adequate.</p> <p>Children 12 - 23 months of age, energy, niacin, riboflavin, calcium, zinc and Iron intakes inadequate.</p> <p>Bioavailability of Iron was low for all age groups</p> <p>Zero to 4% of iron was derived from meat/poultry/fish sources, with the remainder coming from plant or other animal sources (mostly maize and legumes), thus the contribution of iron haem to total iron intake was negligible.</p> <p>At 6 - 8 months of age, vitamin A, niacin, riboflavin, calcium, iron and zinc densities below desired levels.</p> <p>For children 9 -11 and 12 - 23 months</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>of age, vitamin densities were adequate (80%), however, calcium densities, and iron and zinc densities at low bioavailability, were still far below desired levels.</p> <p>Cereals provided 62 -75% of energy from complementary foods, while other food groups contributed much less to non-breast milk energy intake: vegetables, tubers, legumes, eggs and dairy, and meat, poultry and insects</p> <p>Cereals also contributed 50 - 67% of protein, 54 - 76% of iron, 56 - 75% of zinc, 78- 80% of niacin, and 69 - 73% of riboflavin intakes from complementary food, and also accounted for most of the total intake of phytate 83 -94%.</p> <p>Vegetables provided 67 - 97% of vitamin A, 39 ± 88% of ascorbic acid, 37 - 77% of calcium, 6- 16% of iron, and 8 - 16% of zinc. Legumes provided 6 - 10% of iron and 3 ± 11% of zinc, and 3 ± 8% of calcium. Fish provided up to 45% of the calcium intake from complementary foods,</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Nti and Lartey, 2007b/ WA/Ghana	to study Young child feeding practices and child nutrition situation in the area.	cross-sectional survey; structured interviews using questionnaire , dietary assessment and anthropometry,	400mothers of children 0-18 months	<p>Breastfeeding :</p> <p>98% of children breastfed at birth, and 97% still being breastfed at the time of the survey</p> <p>Breastfeeding initiation varied less than an hour to over 24 hours after delivery.</p> <p>Number of daytime breastfeeding ranged between 1 and 20,</p> <p>30% of the mothers could not tell breastfeeding frequency. Breastfed on demand,</p> <p>Weaning:</p> <p>3% of the children (11 out of 400) completely weaned off the breast.</p> <p>Mean age of weaned =13 month.</p> <p>46% weaned off between 8 and 12 months, and 27%, respectively, between 13 and 15 and 16 and 18 months.</p> <p>Complementary feeding:</p> <p>14% of the mothers introduced complementary foods first 3 months of</p>	<p>Weakness</p> <p>There appear a some mismatch between the aim and the title total population from which sample was drawn was not mentioned</p> <p>There is no indication of statistical analysis calculations</p> <p>Whilst anthropometric values were presented statistically this was not described</p> <p>The title of the study gave and impression that nutritional status wold be accessed against feeding practices and dietary quality. However, all the results were presented independently</p> <p>Strength</p> <p>Validation of measurements was explained</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>child life. 32%, mostly between the ages of 0 and 6 months, were yet to be introduced to complementary foods.</p> <p>Mean age of introduction to family food was 7.6 months.</p> <p>By 6 months, 6% of the children had already been introduced to family food.</p> <p>9% and 55% were introduced between the ages of 6–9, and 10–12 months, and 31% between 13 and 18 months.</p> <p>Content of food:</p> <p>Unfortified cereal porridge (<i>koko</i>) was the first food offered by 65% of the mothers,</p> <p>Cereal porridges fortified with legume flour and/or groundnut paste added (27%), and canned infant formula (7%).</p> <p>Frequency of feeding:</p> <p>Number of times a child was fed with complementary food the previous day ranged between 1 and 5, with a mean value of 3.4.</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Seventy-six per cent of the children were fed 2–3 times, 17% over 3 times a day and 12% were fed once a day.</p> <p>Quality of food:</p> <p>In all cases, actual intakes, except for vitamin A, were lower than expected for children in all the three age groups.</p> <p>Calories, intakes of the children ranged between 84% and 91% of the expected intake Protein intakes were just about adequate while intakes for calcium, iron and the B-vitamins were particularly low in all age groups.</p> <p>Vitamin A intakes were far above expected intake due to frequent consumption of palm oil and palm nut soup</p>	
Wondafrash et al., 2012 EA/Ethiopian	to determine caregivers' feeding styles (behaviours) and identify predictors	Cross sectional study face-to-face interview technique using the adapted Caregiver's Feeding	Multistage stratified random sampling 826 caregivers	<p>Breastfeeding</p> <p>64.9% Of 80% of participants fed children less than 8 times a day</p> <p>Complementary feeding started before 6 month in 38.7% of children</p> <p>Substances given are water, gruel, and</p>	Detail information on abstract and introduction, Sampling determination explained Question development and pre-testing explained Acknowledge attrition and inadequate

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
		Styles Questionnaire	of children 6-23 months	<p>other cereal based semi-solid preparations.</p> <p>Perceived insufficient breast milk is reason for half of children receiving other foods before six months</p> <p>Complementary feeding frequency was increased with age:</p> <p>6-8months 4.6</p> <p>9-11months 5.1</p> <p>12-24months 6.2</p> <p>Caregivers feeding styles</p> <p>76% responsive feeding</p> <p>Child refusal to eat was interpreted as not being hungry or child is sick</p> <p>Refusal to eat was caused by</p> <p>Forced feeding</p> <p>Not encouraged to eat</p> <p>Other caregiver feed the child than the other</p>	<p>data for some questionnaire</p> <p>Limitations</p> <p>No mention of theoretical framework, rationale for methodology</p> <p>Inadequate information on setting</p> <p>Non observational methods for feeding behaviours may result in self-reporting bias</p> <p>Information on content of data collection is scanty</p> <p>In adequate information on how absent information was managed.</p> <p>Results about frequency of breastfeeding did not include age group</p> <p>Though child population understudy was stated as 6-23, results were reported for up to 24 months</p> <p>Definition of responsive was not clearing (responsive if caregiver used more than one of different styles of feeding?)</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Food refusal management</p> <p>Serving children separately</p> <p>Encouraging verbally</p> <p>Forced feeding during illness</p> <p>Definition of feeding style</p> <p>Laissez faire feed means no effort from mothers to ensure child feeds</p> <p>Not common in rural setting</p> <p>Laissez fair was common in women who breastfeed frequently</p> <p>Mothers with other children</p> <p>Controlling style</p> <p>Control time, type and amount of food a child eats</p> <p>Non biological mothers</p> <p>Infrequent breast feeders</p>	<p>Some aspects of the findings not clear. Issues like optimal birth interval appeared vague.</p> <p>There is very low transferability of this study because it is self-reported and one time</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Gibson et al., 2009 /EA/Southern Ethiopia	Explore breastfeeding and complementary feeding practices and behaviors, and assess the energy and micronutrient intakes and dietary quality of the complementary diets of young children	cross-sectional study with questionnaire focus group discussion, anthropometric measurements, 1day dietary assessment of children	100 apparently healthy infants and young children aged 6–23 months,	<p>Breastfeeding:</p> <p>Questionnaire: 68% (66/97) of the children were reportedly breastfed within 1 hour after birth and the remainder within 1 day</p> <p>FGD: most of the mothers discarded colostrum 7% of the children were given prelacteal feeds consisting of plain water, or extracts of fenugreek two (10%;2/20) in the</p> <p>6–8 months age group were still exclusively breastfed</p> <p>introduction of other substances:</p> <p>Plain water was fed most frequently (71%; 69/97),</p> <p>Followed by fresh animal milk (20%) (mainly goat's milk); 9% children consumed fenugreek extract their children had received fluids, as well as breast milk before 6months of age children, were breastfed 'on demand' at the time of the study, with the exception of two in the 12–23 months age group</p>	<p>Weakness</p> <p>Cross sectional design may also be inappropriate for an aspect of the study, which is complementary feeding behaviours</p> <p>Focus group discussion is not also appropriate for eliciting data in a cross sectional study.</p> <p>Convenient sample is inappropriate for cross sectional study</p> <p>Whilst it also mentions random sample it does not indicate from the total population the sample is drawn from compromising potential utilisation of results for similar population owing to lack of representations</p> <p>Analysis of food group data not presented</p> <p>Some results were not presented and anthropometric results that required statics were instead described as negative or positive</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Water & food hygiene:</p> <p>No mother boiled water for child or washed their hands before cooking or feeding their infants,</p> <p>Stored food in places exposed to contamination</p> <p>Introduction of complementary foods:</p> <p>Fifty per cent of the mothers commenced complementary feeding because they perceived insufficient breast milk.</p> <p>Frequency:</p> <p>94% Infants aged 6–8 months fed solid or semisolid foods 2 daily plus breast milk,</p> <p>75% of 9-23 fed similarly</p> <p>Most children not fed any additional nutritious snacks or minimum number of food groups</p> <p>Content of food:</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Most children consumed only 0–2 food groups, rarely included foods rich in vitamin A or iron sources</p> <p>Grains, roots or tubers used. Most frequently consumed food group and maize was the predominant food</p> <p>Nutrient diversity: energy intakes met or slightly below the estimated needs for infants aged 6–8 months, 9–11 months, Inadequate: for children aged 12–23 months</p>	
Kimani-Murage et al., 2011/ EA/Kenya/2007-2010	Assess breastfeeding and infant Feeding practices	longitudinal study Urban Health and demographic Surveillance System (NUHDSS) Data	Women with 4299 children under 24 months	<p>Breastfeeding: Most children (99%) were ever breastfed More than a third (37%) were not breastfed in the first hour following delivery</p> <p>Introduction of other substances at birth: Little or no breast milk (35%); baby being asleep/tired (23%); baby being</p>	<p>Weaknesses Inadequate information on the methodology and why it was chosen. Inappropriate data collection method mentioned and development and validation -not described.</p> <p>Sampling and sample size calculation not indicated nor justified very minimal information</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>sick (13%); and mother being sick (9%).</p> <p>Introduction of other substances before 6 months:</p> <p>Plain water (56%), with most children on it having been given within the first month (69%); porridge (54%), most children introduced from 3-4months (64.7%);</p> <p>Fresh or powdered milk sweetened/flavoured water:</p> <p>78% children introduced within the first month of life.</p> <p>Complementary feeding:</p> <p>98% of children by the age of 6 months introduced to complementary foods (liquids or solids).</p> <p>Liquids introduced by 1 month</p> <p>Solids by 3.5 months.</p> <p>Boys introduced to foods early</p>	<p>about analysis</p> <p>Strength</p> <p>Continuous consent after initial written consent in addition to ethical board approval</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Baye et al., 2012/ EA /Ethiopia August to October 2010	To characterize current feeding practices and to evaluate the adequacy of energy and nutrient intakes of young children in subsistence farming rural households	cross-sectional study anthropometry, Breast-feeding, complementary feeding practices using two in-home non-consecutive 24h recalls.	76 young children aged 12–23 months	<p>Frequency of complementary feeding:</p> <p>90% of the children were fed complementary foods at least three times daily</p> <p>Few BF children consumed three or more food groups and fed at least 3 times daily. Most Non Breastfed children not fed according to recommended IYCF practices</p> <p>Diversity of food:</p> <p>less than half met the minimum number of food groups</p> <p>Low (0–2) children’s dietary diversity scores & medium (3–4) range.</p> <p>Content of diet:</p> <p>Predominantly cereals and legumes Consumption of ASF, fruits, and vegetables was very low- Fruit consumption higher in the lowlands</p> <p>all children consumed Injera, a flat fermented pancake ate with stews</p>	<p>Weaknesses</p> <p>Total population not stated to justify sample size</p> <p>Pre-informing mothers not to alter diet could influence dietary recall information</p> <p>Limited information on methods in general</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Cereals used injera (teff and sorghum) in the lowlands, whereas mixes of barley and wheat or wheat and red sorghum used in the highlands. Injera consumed at all main meals, only stews vary.</p> <p>Shiro commonly consumed with stew (consists of roast, decorticated and ground legumes grass pea and broad beans).</p> <p>Specifically prepared meals (gruels/porridges) for the children.</p> <p>More gruels/porridges were consumed by NBF than BF children. Snacks consisted of leavened bread, unleavened bread (kitta) or fruits.</p> <p>children mostly drank tea with their breakfast, which was usually wheat bread</p> <p>the main sources of nutrients in the young children's diet were cereals (injera1bread</p> <p>Adequacy of nutrients:</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Low intakes of energy, Ca, vitamin A and C from complementary foods below estimated needs</p> <p>Zn intakes also below the estimated needs</p> <p>Fe intakes from complementary foods met estimated needs even under the assumption of low bioavailability (5 %).</p> <p>NBF children ate larger quantities had higher energy and nutrient intakes.</p> <p>Diets of BF and NBF children were similar; hence, the nutrients found to be suboptimal were the same.</p>	
Tessema et al., 2013/EA/Ethiopia	Assess feeding practices of children less than two years of age, household food security status and their association with stunting	cross-sectional study	Random 575 participants mother to children age 0-23 pairs	<p>Breastfeeding:</p> <p>The majority (93.6%) of the mothers reported initiating breast-feeding their children within 1 hour after birth</p> <p>The overall rate of EBF for infants under 6 months was 62.4%; however, EBF rates declined from 67.7% in the first month to 60.6% for age 4-5 months.</p> <p>40.6% of the mothers reported</p>	<p>Strength</p> <p>Detail information on sampling</p> <p>Indicating a potential for generalisation</p> <p>Ethical approval and consent of participant and gatekeepers was all obtained</p> <p>Instrument validation</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>practicing pre-lacteal feeding.</p> <p>Diversity of food: Eighty-six per cent of the children had dietary diversity below the minimum dietary diversity recommended by the WHO (< 4 food groups).</p> <p>Content of food majority (93.1%) of mothers reported that IYC consumed complementary foods made from grains, roots, and tubers (specifically corn bread and potato). Most of the children (62%) did not consume any fruits and vegetables during the preceding 24 hours before the survey only 6.3% of children consumed vitamin-A rich fruits and vegetables such as carrot or yellow pumpkin in the 24-hours preceding the survey. In this study, only 1.9 % of the infants and young children consumed meat, fish, or poultry and 3.4% consumed eggs in the 24 hours before the survey.</p> <p>Children consumed these flesh foods once per month or less throughout the year; whereas cereal-based food, mainly</p>	<p>Content of instrument mentioned</p> <p>Appropriate statistical tests were done but</p> <p>The method is most appropriate for comparing the feeding patterns with the stunting</p> <p>Weakness: Development of instrument not adequately described.</p> <p>However, the design is not very appropriate for exploring patterns of feeding since these include hands on activities and rationales that make the concept well understood.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>maize, was consumed daily by most of study subjects</p> <p>Approximately 86% of mothers in the study areas fed their child below the minimum dietary diversity recommended by WHO</p> <p>Meal frequency:</p> <p>The results in the current study showed that 30(38 %) of IYC in the age 6-8 months and 147(37 %) in the age 9-23 months were reported to receive below the recommended minimum meal frequency.</p>	
Nordang et al., 2015) EA/Tanzania	To assess the nutritional status of children under 5 years of age, feeding practices and risk factors of under nutrition	cross-sectional study Structured questionnaire and a 24 h dietary recall. Children's length/height and weight were measured	152 households with children under 5 years main caretaker and the household head,	<p>Breastfeeding:</p> <p>Participating children were breastfed, Exclusive breast-feeding for 6 months was extremely rare (<1 %).</p> <p>All mothers (98.9 %) reported to have breastfed their child for 1 year, whereas 60 % continued Breast-feeding for 2 years.</p> <p>Introduction of other fluids:</p>	<p>Weakness</p> <p>The sampling of individual children is not indicated to show representativeness of sample and generalisation of finding to the whole population</p> <p>Unclear description of how mothers' memory was maintained in the 24-hour recall of diet no clear details on how confounding factors were</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>60 % continued Breast-feeding for 2 years. Most mothers (72·4 %) introduced pre-lacteals, mainly sugar-water, first few days after birth</p> <p>More than half (65·6%) continued with plain water after sugar-water was discontinued</p> <p>Uji, a thin gruel made principally from finger millet (61·1%) or maize (38·9 %), introduced at 2 months of age</p> <p>(25th–75th percentiles; 1–3 months) after birth</p> <p>Introduction of other complementary foods:</p> <p>Ugali stiff maize, Family food, Green leafy vegetables, Tomatoes, Onions, Beans and groundnuts, Fish and sardines, Some milk, eggs, and oil</p>	<p>handled.</p> <p>Associations between dependent and independents variables could, therefore, be influenced by other potential factors</p> <p>Recall bias could occur on the number of farming days and Economic indicators were not validated</p> <p>Strength</p> <p>DDS positive way of strengthens data from 24 hour recall</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Issaka et al., 2015 /WA/Ghana	To explore complementary feeding practices and identify potential risk factors associated with inadequate complementary feeding practices in Ghana by using the WHO infant feeding indicators and data from the nationally representative Demographic and	Cross sectional 822 Secondary demographic and health survey data Questionnaire,	Children 6-23 months 4916; women 15-49	<p>Children's diet; 89.2% of the children's diet was grains, roots, and tubers. Other food groups such as legumes.</p> <p>Introduction to food; 6-8 months olds=597 of the 822 children ate soft, solid and semi -solid foods.</p> <p>More than half of children meet minimum diet diversity</p> <p>Less than half children met frequency criteria</p> <p>30% of all the children meet all the complementary feeding criteria</p> <p>Inadequate feeding causes: Related to birth at hospital, region of birth, and age of the child.</p> <p>Children with mothers who did not listen to radio and fathers were farmers</p> <p>Rural areas</p> <p>Poorer households</p>	<p>Strengths Indicated the source of the data, provided a brief explanation of source sampling frame, but did not mention the total number of population which the sampling frame was drawn. Give indication of source of details of the sampling and data collection tool(questionnaire)</p> <p>Presentation of data is confusing at too much varied data presented on one table</p> <p>Weakness A summary of the data collection methods would give readers first-hand knowledge of the level of appropriateness of the data for measuring what it intended to measure.</p> <p>Considering the nature of the practices, it is about counting specific number, which is okay to do, but these do not give a good picture of the underlying explanation to the predictors would not be an earth</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Non-Christians</p> <p>Born at home</p> <p>Northern regions more likely not to meet meal frequency</p> <p>Foods:</p> <p>All categories of food groups included in the diet of children</p> <p>6-8 months had least categories with dairy products most lacking, followed by meat and fish</p> <p>Increasing trend in the food consumption with age</p>	<p>since practices are hands-on activities, measuring levels may not be enough to guide interventions and may actual misguide the direction of interventions some of the outcome variables were not discussed, even though these are in the results tables.</p>
Mixed methods					

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Sellen, 2001/EA/Tanza nia/1989-1993	Examine the cause of variation in weaning patterns and the extent infant- centred, maternal or household cues in weaning decision making	Mixed method, longitudinal observation, semi structured interviews and focused group discussions (FGD), 24hr recall of food	Purposive sampling N=41 households children under 3 years N= FGD, 12 mothers 40infants Monthly 24hr recall of food	Breastfeeding, weaning, knowledge, attitudes, practice, Africa, seasonality, rainfall, seasonal food supply, herding, food beliefs, infant developments Individual influencing the supplementation of kids food; Mothers decide when to add other foods to BM and wean children Other determinants: Seasons Maternal perceptions Rationales for introduction of cow milk: Perceived insufficiency of breast milk Maternal illness Availability of cow milk Rationales for introduction of maize meals: Dry season Less milk for both women and children	Strengths Background information clear and contextualised Weaknesses No rationale for methodology. Methodology not clearly described Information on sampling incomplete No description of data collection tools Even though the study mentioned observations as one of its data collection strategies, there is no observational data described no how it was collected Statistical analysis of qualitatively generated data Results of focus group discussions presented as descriptive statistics

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>A way to teach children how to eat other foods before cow milk completely finishes</p> <p>Women work load also makes them introduce children to maize</p> <p>Indicators for weaning;</p> <p>Scarcity of animal milk</p> <p>Insufficient maternal and car milk</p> <p>Maternal illness</p> <p>Pregnancy</p> <p>Unprocessed cow milk right from birth</p> <p>Stiff maize porridge was common food and prevalent after 6 months as child competence to eat: Tooth eruption,</p> <p>Walking child</p> <p>Maternal workload reduces time for kids</p> <p>Dry season</p> <p>Feeding patterns;</p> <p>Children fed up to 6 to 24 months</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>No exclusive breastfeeding</p> <p>Duration of breastfeeding was related to introduction of maize meals</p> <p>Children's diet:</p> <p>Cow's milk was introduced to children earlier</p> <p>Butter</p> <p>Ghee</p> <p>Meat</p> <p>Water</p> <p>Gruel</p> <p>Curdled milk served as intermediate meal</p> <p>Maize solid diets were then introduced</p> <p>After which there is weaning</p> <p>Child diet in sickness:</p> <p>Cessation/ reduction of breastfeeding</p> <p>Diet restriction is common in diarrhoea</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Elimination of solid diets during sickness</p> <p>Feeding with only maize gruel without milk, exclusive breastfeeding or just water during sickness</p> <p>Few mothers prepare special diets during sickness</p>	
Gupta et al., 2007 /WA/Senegal	The objective of this study was to determine if an association exists between the early introduction of water and complementary foods (CFs) and the nutritional status of children in northern Senegal.	cross-sectional/ interviews mixed methods	374 children ages: 6 and 23 months 311 households, Interviewing of; 43 mothers One religious leader 2 health worker	<p>Introduction to other substances:</p> <p>Water was introduced to about 85% of the children in the first 3 months of life and 62% were given CFs before 6 months.</p> <p>Early introduction of water was often dependent on tradition, while early introduction of CFs was often initiated with the perceived lack of breast milk or with perceived food-seeking behaviours by the infant.</p> <p>Introduction of animal milk often preceded the introduction of solid CFs by several months</p>	<p>Weaknesses</p> <p>Sampling not described</p> <p>No detail information to judge the representation of the sample.</p> <p>The difference between the 2 studies not stated. Mixed methods study is for complementarity but this did not come clearly in the report</p> <p>No analysis information</p> <p>Results were not clearly presented to show the primary and secondary outcomes clearly.</p> <p>Qualitative results not stated</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Traditional practice:</p> <p>The custom of ritual administration of religious water or milk to the new-born on the first day of life was common, and this practice was considered by the mothers (and for our analyses) to be different from introduction of water or CFs.</p> <p>Early introduction of water was often dependent on tradition</p> <p>Sources of knowledge:</p> <p>knowledge of medical recommendations for 6 months of exclusive breastfeeding varied greatly among mothers, and mothers'</p> <p>Medical knowledge was customarily superseded by the recommendations of elders.</p>	<p>transparently</p> <p>Strengths</p> <p>Informed consent provided and ethical approval obtained from an ethics board</p> <p>Some information is given for some understanding of the methods but not complete</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Kerr et al., 2007 /SA/Malawi/ February 2002	To characterize early infant foods in rural northern Malawi, who the decision-makers are, their motivation, and the consequences for child growth, in order to design a more effective program for improved Child health and nutrition.	combination of qualitative and quantitative research	160 caregivers of children 6 to 48 months from 264 households	<p>Perception of feeding:</p> <p>Colostrum and breast milk main source of children's food, but no exclusive breastfeeding</p> <p>Breast milk protects a baby from diseases, helps their bowels develop, and gives them energy.</p> <p>Other foods given when baby cries.</p> <p>Crying of a baby was seen as a sign of hunger inadequate breast milk.</p> <p>Other foods given:</p> <p>thin maize porridge</p> <p>gripe water or different herbal infusions</p> <p>time of introductions</p> <p>65% introduced to some form of food in 1st month</p> <p>Almost exclusive breastfeeding is common in 1st month with gradual addition of other food substances (water, thin porridge, other roots</p>	<p>Strengths</p> <p>Interview question for qualitative study based on a test interview of some informants</p> <p>Informed consent obtained& ethics obtain</p> <p>Weaknesses</p> <p>Objective not specific and clear</p> <p>Method of study not justified</p> <p>Lack of calculation of sample size</p> <p>Insufficient information about the methods in general</p> <p>Inconsistent information about qualitative and quantitative sample</p> <p>Poor organisation of analysis</p> <p>Limited information about quantitative analysis</p> <p>Results fairly presented</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>infusions) mostly within 1st 6 months</p> <p>96% eat any food by 6 months</p> <p>No age specific introduction of foods</p> <p>Wealthier families may introduce other substances later</p> <p>Perception that mothers in poor home had inadequate breast milk.</p> <p>Reasons for food introductions in general:</p> <p>Thirsty, hungry or crying child</p> <p>Protection with some herbs due to father and mothers promiscuity</p> <p>Decisions makers range from mother, mother in-law, and father in laws</p> <p>Mothers in-laws more power and crying babies are perceived as poor care by mother in –laws- may take babies from mothers</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Owino et al., 2008 /SA/Zambia/ March 2008	to establish current complementary feeding practices of mothers/caretak ers living in a medium income urban community	qualitative and quantitative methods: semi-structured Mixed methods: questionnaire to interview 34 mothers, 20 of whom were observed for 12 hours at home and their infant's dietary intake measured by 12-h weighed food record and 24-h recall	children 6-18 months in focus group discussions involving 9 health workers, 7 mothers, and 8 fathers	<p>Breastfeeding; Knowledge of benefits of breast milk for first 2years Feeding on demand supported Adequacy of breast milk questioned</p> <p>Complementary feeding: Commences 1-9months</p> <p>Reasons: Crying babies Baby not satisfied with Breast milk HIV status of mothers</p> <p>Children diet Rice beans Maize fish Groundnuts milk Fruits (bananas, oranges, and pawpaw) Vegetables (carrots, pumpkins, green vegetables). Eggs</p>	<p>Strengths Clearly stated aim Justified the methods and gave reasons and content both qualitative and quantitative Some good points on the presentation of the findings.</p> <p>Weaknesses No clear separation of qualitative and quantitative data collection content Limited details on data analysis</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Oil</p> <p>Food aid multi-nutrient pack was also given</p> <p>Influence of content of diet:</p> <p>Availability (seasons)</p> <p>Affordability (cost;</p> <p>Commercial foods available are expensive)</p> <p>Affordability was linked to educational attainments</p> <p>Beliefs in use of home prepared food over commercial foods</p> <p>Home food contain all nutrients</p> <p>Some home foods may not be appropriate e.g. cold food</p> <p>Mistrust of freshness of commercial foods</p> <p>But considered convenient</p> <p>Variety was factor in choice</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Cessation of breastfeeding:</p> <p>19 months</p> <p>Nutritional value determine food choice also</p> <p>More income=choice or more nutritious</p> <p>Diet</p> <p>Preparation of food:</p> <p>Main infant food porridge (light or stiff,) prepared for easy eating by infants was prepared for 20 to 45 minutes</p> <p>Meal time behaviour:</p> <p>Feeding was in living areas</p> <p>Children were fed on laps of caretakers e.g. Mother, Grandmother, House help, Siblings</p> <p>Encouragement was used to coax children to eat.</p> <p>Nutrient value of foods varied</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Paul et al, 2011 /SA/Zimbabwe & Tanzania/2011	Determine the local social and cultural context influences on feeding practices and nutritional intake	Mixed methods: 24- hour dietary recalls, household interviews, and focus group discussions	32 mothers of 6 to 12 months-old infants in rural Zimbabwe and 44 mothers of 6 to 12 months old infants in Pemba Island, Zanzibar, Tanzania	<p>Introduction of other food: Before 6 months because of the crying of children Breastfeeding not on demand because mothers work away keep them for up to 6hours</p> <p>Cessation of breastfeeding: This occurs in pregnancy because breast milk goes bad</p> <p>Nutrient gap: Absence of specific food in children diets</p> <p>Absent foods include: Animal sources Legumes Fruits and vegetables Where there was fish it was not given to children Protein and energy foods limited in</p>	<p>Strengths Ethics and consent obtained appropriately Indicate the frame guide qualitative data collection</p> <p>Weaknesses Methods not clearly statement No description of sampling Data collection not detailed enough Limited information about analysis in general Some results not appropriately presented.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>children's diets</p> <p>Reasons for absence of food in children diets:</p> <p>Beliefs about children inability to eat such foods</p> <p>Food insecurity</p> <p>Belief that children can only eat some food when teeth erupts</p> <p>Or cannot swallow other foods</p> <p>Lack of knowledge of food processing</p> <p>Children did not eat vegetable sin some places because families did not eat them</p> <p>Fish is not given to children in coastal areas where fish is abundant because fish causes fish decay and worms</p> <p>seasonal cost of fruits such as mangoes prevented children from eating them</p> <p>Hygiene practices;</p> <p>No hand washing</p> <p>Perception that in one's own house one</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>cannot contact germs</p> <p>Leftover food not properly stored.</p> <p>Bottles are used to feed children, but not properly cleaned</p>	
Mwaseba and Kaarhus, 2015 /EA/Tanzania/ 2010-2012	Determine how intra-household gender relations, in terms of access to and control over household's productive assets, affect children's nutritional status in different societies where nutrition-sensitive development interventions	Mixed method: semi-structured interviews, participant observation, in-depth interviews, and focus group discussions	16 households & 647 children from Njombe, 16 households & 1592 children from Mgeta community leaders, health practitioners from nearby health facilities and traditional healers, as	<p>Feeding frequencies</p> <p>2-3 feeds a day, some children 1 meal daily (no age specific, all under-fives)</p> <p>No concept of children food.</p> <p>Adults and children ate indigenous green vegetable if in diet</p> <p>Sources of foods:</p> <p>Own markets</p> <p>Maize flour, sugar cooking oil, etc. bought by Mgeta's</p> <p>Food providers:</p> <p>Men are providers</p>	<p>Weaknesses</p> <p>No mention and clear rationale for mixed method</p> <p>Sampling for quantitative was not representative and did not appear random,</p> <p>strengths</p> <p>Describe the significance of qualitative approach in understanding intra-household gender processes</p> <p>Qualitative results well organised with quotes</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
	have been Implemented.		well as elderly men and women	<p>Proceeds from men's farming for providing food have other use such as household maintenance and buying local brew.</p> <p>Food consumption thus gets its meagre share of funds</p> <p>Milk is a common product in both communities. Milk is not a routine meal for children can be taken by any family member as medicine.</p> <p>Milk is sold to generate income to supplement household income</p> <p>It is also given to animals offspring</p> <p>Women control of assets did not result in prioritising for children nutritional needs</p> <p>Responsibilities related to children nutrition:</p> <p>Mothers care for children, fathers are absent</p> <p>In addition to all household chores</p> <p>Including preparing food and feeding</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>children, fetching water, firewood,</p> <p>Women also farm in all its forms in her own land (which produce she would use to feed the family) and that of her husbands</p> <p>Peak farm times prevent mothers from giving adequate care to children.</p> <p>Men, on the other hand, sell all the producers of farming as a duty to deal with the outside world.</p> <p>In another villages,</p> <p>In this community, whilst women may fetch firewood men have to split it</p> <p>Men do most of the farming work and sell the produce whilst women help in the harvesting.</p> <p>Women also have some farmlands.</p> <p>However, because men go to sell the produce they determine to a large extent the use of the produce, including what is used for children.</p> <p>Men inability to provide adequately,</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				however, lead to divorce	
Wyatt et al., 2015 /EA/Kenya, June-July, 2010	Explore the relationship between level of household dairy production and infant and young child feeding (IYCF) practices in the context of rural dairy farming	Mixed methods approach: FGD, household survey, qualitative & quantitative data collection	30 households with young children (0–60 months) who lived in households not currently producing dairy, 31 households each from two groups of children(0-60 months) who lived in	IYCF introduction of other feeds: median age was 3 months substance introduced: cow milk porridge mashed or semi- solid foods water Reasons for mixed feeding of children: Insufficient breast milk was the overarching reasons for introducing	Strengths State from outset the methodology Provided reason for not sample calculation in the study as a pilot study Use GPS to locate houses in study sites Analytic method appropriate and clear. Ethics and consent obtained

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
			households Currently producing dairy.	other substances Reasons for perceived insufficiency of breast milk: Inadequately nourished mother Illness of mother Workload diminished their breast milk production. <i>Extra work of mother affect feeding practices</i> Women are paid by amount of work in tea plantations and thus would not interrupt their work to breastfeed Women who graze cattle can feed better Farming mothers say they stop tilling the land and feed, but why? diary production and food diversity: Cow milk was introduced earlier in areas with high production of diary. Exclusive breastfeeding compromised: Perception of dairy products enough in	weaknesses sample size not big enough The qualitative analysis was not clear. Appear more like enumerated as content of data collection tool.

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>children's diet:</p> <p>Milk is considered very essential in the household and Children diet.</p> <p>Milk is added to most foods of the family</p> <p>It is also taken alone if available.</p> <p>It is especially considered essential for children</p> <p>If inadequate, it is used for only the children for both producers and non-producing households</p> <p>Women use of decision power to save milk for children;</p> <p>Evening milking is for household consumption</p> <p>Morning milk is for sale</p> <p>Some Morning milk is retained for children.</p> <p>Women said she divides it and keep some for the children food throughout the day.</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
Nti and Lartey, 2007a/WA/Ghana/2007	Assess the role of caregiver feeding behaviors on child nutritional status using a modified positive deviance approach	observational study, observations weight, and height measurements	100 mothers with infants between the ages of 6 and 12 months	<p>Meal frequency</p> <p>Most children ate 2 meals a day</p> <p>-deviant children had 1 meals a day</p> <p>+deviant had more 3 meals a day.</p> <p>Diet diversity</p> <p>Positive deviants had regular feeding times</p> <p>Responsiveness of care givers during feeding</p> <p>+Deviant children:</p> <p>Caregiver demonstrated feeding to children</p> <p>Encouraged children to eat</p> <p>offered more food</p> <p>supervised feeding</p> <p>-deviant feeding atmosphere;</p> <p>Tensed</p> <p>Forced feeding</p>	<p>Strength</p> <p>Clear objective</p> <p>Mentioned appropriate data analysis method</p> <p>Weaknesses</p> <p>Methodology not explained</p> <p>Sampling did not appear, representative</p> <p>Limited information given.</p> <p>Instrument development not clear</p> <p>Data collection is not also completely clear</p> <p>Limited details on analysis process</p> <p>Specific caregivers behaviors were not related to specific nutrients</p> <p>One outcome was not reported</p> <p>Using statistical package the analyze data that is recorded through physical observation and description</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Ignoring children</p> <p>children's appetite practices;</p> <p>+deviant children approached feeding positively than the –deviants</p> <p>Caregivers hygiene;</p> <p>+deviant children caregivers</p> <p>Washed hands before and after feeding children</p> <p>Dry hand with clean towels</p> <p>Use clean water and soap</p> <p>Use and clean utensils</p> <p>Generally:</p> <p>All caregivers did not have a specific feeding location for their children, although the situation was slightly better in the case of positive deviants. The children were fed at any convenient place, either in the kitchen, on the veranda or in the open compound.</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>The majority of caregivers in both groups prepared meals, served and physically helped their children to eat.</p> <p>The children were fed either sitting on their mother's laps or next to them</p>	
Appoh Krekling, 2005/WA/Ghana	Explore the relationship between mother's nutritional knowledge, maternal education, and child nutritional status (weight-for-age)	Questionnaire interview,	55 well-nourished and 55 malnourished mother-child pairs.	<p>Nutritional knowledge more than formal education was significant in optimal nutritional practices.</p> <p>Mothers beliefs related to feeding:</p> <p>Colostrum is dirty, smelly and causes diarrhea</p> <p>Breastfeeding:</p> <p>Most mothers initiate</p> <p>Breastfeeding soon after delivery and give colostrum to their infants.</p> <p>Others: Time introduction of complementary food:</p> <p>Newborns are given pre-lacteal feeds</p>	<p>Methodology not identified</p> <p>Limited details on sampling and establishment of the representation of the sample.</p> <p>Development of instrument unclear only content mentioned</p> <p>Data analysis test mentioned but explained</p> <p>Though qualitative and quantitative data generated, all data was analyzed quantitatively.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>such as water both as a substitute for breast milk during the time breast milk is withheld and also as a complement to breast milk later on. The main weaning food (koko) is carbohydrate rich only. Weanimix may also be given</p> <p>Negative beliefs and practices such as food prohibitions significantly influence the feeding behaviours of mothers but was not associated with nutritional status in this study</p> <p>Economics:</p> <p>Economics was not found as a factors in the choice of feeding practices of mothers</p>	
Katepa-Bwalya et al., 2015 /Zambia,	To describe feeding practices and nutritional status among infants and young children (IYC)	Qualitative and quantitative: Questionnaire, anthropometric measurements FGD Semi-structured interviews	634 Caregivers of children under 24 months fathers, grandmothers, health workers and traditional birth	<p>Feeding under 6 months:</p> <p>Crying was an indicator for feeding</p> <p>May give water to children on perception of their throat being dry.</p> <p>main reason given in favour of EBF was that the intestines of the infant were too</p>	<p>Strengths</p> <p>Clearly articulated abstract and aim</p> <p>Methods of data collection mentioned, and content outlined</p> <p>Ethical approval and consent of participants obtained</p> <p>Weaknesses</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
			attendants	<p>immature and small to handle other foods and the baby</p> <p>would get sick and have stomach pains if given other foods</p> <p>main barrier to practicing EBF was that the caregiver feared that babies would not be accustomed to other foodstuff in case the mother is not able to breastfed due to illness or death</p> <p>Knowledge of participants:</p> <p>Received information about breastfeeding</p> <p>Some talked positively about colostrum: Was good and protected the baby from diseases.</p> <p>Complementary feeding initiation baby can grow healthy on breast milk alone and can survive for six months</p>	<p>No rationale for choice of methodology, No descriptions of the development of the data collection method. No information on how it was validated.</p> <p>Sampling was not adequately described.</p> <p>Inconsistent number of sample</p> <p>Setting was inadequately described</p> <p>Description of the data collection</p> <p>Data analysis (qualitative and quantitative) was also not adequately reported.</p> <p>Results were partially fairly presented.</p>

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>content of</p> <p>information received consisted of putting the newborn immediately to the breast after delivery, correct positioning techniques of baby when breastfeeding, exclusive breastfeeding, duration of the whole breastfeeding period and when to introduce other foods</p> <p>No knowledge:</p> <p>Participants from the rural setting though knowledgeable about the food groups could not practice giving the child different types of food giving a lot of porridge and making sure that the child is always satisfied whilst the focus for others was on making sure that the child never got cold food.</p> <p>Others:</p> <p>Colostrum not breast milk but water by some participants</p> <p>Source of information:</p> <p>Elderly people in the community</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>Health workers during antenatal visits</p> <p>Friends, community health workers, and the radio were also an important</p> <p>Complementary feeding: signs identified:</p> <p>Crying a lot, an increase in appetite and wanting to breastfeed more often than usual.</p> <p>mothers may not have adequate breast milk and would need to introduce other feeds early</p> <p>Complementary food:</p> <p>Complementary food at six months was maize and millet porridge.</p> <p>Addition of groundnuts pounded small fish (kapenta), oil, sugar, egg (especially the yolk), bean soup, and milk to the maize meal porridge was common. However, this was reported to be dependent on the economic status fruits like oranges and bananas and others who could afford gave commercially prepared foods like cerelac giving the</p>	

Author/Year/ region/ Country/	Study aim	Theoretical framework/ Resign design/ Data collection	Sampling Participants	Keys feeding practice(s)	Quality comments
				<p>child food like vegetables, porridge, groundnuts, local drink (umunkoyo), oranges, bananas and bean soup as a good way of preventing malnutrition.</p> <p>Beliefs and perceptions:</p> <p>Some participants felt that milk was a 'liquid' and not 'food' and the child needed 'food' to satisfy his/her hunger.</p> <p>Cessation of breast milk:</p> <p>Oldest child weaned was 18 months</p> <p>Cessation was due to perceived inadequacy of breast milk Cues for cessation of breast feeding:</p> <p>child being able to walk and obey requests like bringing an item to the mother</p> <p>pregnancy</p> <p>weaning process include:</p> <p>leaving child with grandmother</p> <p>giving children drinks</p>	

Appendix 3: Hawkers et al, critical Appraisal tool

Good=4

Fair=3

Poor=2

Very poor=1

Lower scores =poor quality

Notes for appraising the quality of each paper:

1. Abstract and title:

Did they provide a clear description of the study?

Good Structured abstract with full information and clear title.

Fair Abstract with most of the information.

Poor Inadequate abstract

Very Poor No abstract

2. Introduction and aims:

Was there a good background and clear statement of the aims of the research?

Good Full but concise background to discussion/study containing up-to date literature review and highlighting gaps in knowledge.

Fair Clear statement of aim AND objectives including research questions

Fair Some background and literature review. Research questions outlined.

Poor Some background but no aim/objectives/questions, OR Aims/objectives but inadequate background

Very Poor No mention of aims/objectives No background or literature review

3. Method and data:

Is the method appropriate and clearly explained?

Good Method is appropriate and described clearly (e.g., questionnaires included). Clear details of the data collection and recording

Fair Method appropriate, description could be better. Data described.

Poor Questionable whether method is appropriate Method described inadequately little description of data

Very Poor No mention of method, AND/OR Method inappropriate, AND/OR No details of data

4. Sampling:

Was the sampling strategy appropriate to address the aims?

Good Details (age/gender/race/context) of who was studied and how they were recruited. Why this group was targeted. The sample size was justified for the study Response rates shown and explained

Fair Sample size justified Most information given, but some missing

Poor Sampling mentioned but few descriptive details

Very Poor No details of sample

5. Data analysis:

Was the description of the data analysis sufficiently rigorous?

Good Clear description of how analysis was done. Qualitative studies: Description of how themes derived/ respondent validation or triangulation. Quantitative studies: Reasons for tests selected hypothesis driven/ numbers add up/statistical significance discussed.

Fair Qualitative: Descriptive discussion of analysis. Quantitative

Poor Minimal details about analysis

Very Poor No discussion of analysis

6. Ethics and bias:

Have ethical issues been addressed, and what has necessary ethical approval gained? Has the relationship between researchers and participants been adequately considered?

- Good Ethics: Where necessary issues of confidentiality, sensitivity, and consent were addressed. Bias: Researcher was reflexive and/or aware of own bias
- Fair Lip service was paid to above (i.e., these issues were acknowledged).
- Poor Brief mention of issues
- Very Poor No mention of issues

7. Results:

Is there a clear statement of the findings?

- Good Findings explicit, easy to understand, and in logical progression. Tables, if present, are explained in text. Results relate directly to aims. Sufficient data are presented to support findings.
- Fair Findings mentioned but more explanation could be given. Data presented relate directly to results.
- Poor Findings presented haphazardly, not explained, and do not progress logically from results.
- Very Poor Findings not mentioned or do not relate to aims.

8. Transferability or generalizability:

Are the findings of this study transferable (generalizable) to a wider population?

- Good Context and setting of the study is described sufficiently to allow comparison with other contexts and settings, plus high score in Question 4 (sampling).
- Fair Some context and setting described, but more needed to replicate or compare the study with others, PLUS fair score or higher in Question 4.
- Poor Minimal description of context/setting
- Very Poor No description of context/setting

9. Implications and usefulness: How important are these findings to policy and practice?

- Good Contributes something new and/or different in terms of understanding/insight or perspective. Suggests ideas for further research Suggests implications for policy and/or practice
- Fair Two of the above (state what is missing in comments).
- Poor Only one of the above
- Very Poor None of the above

SOURCE: Hawker, S., Payne, S., Kerr, C., Hardey, M. & Powell, J. (2002). Appraising the evidence: reviewing disparate data systematically. *Qualitative Health Research*, 12(9), 1284-1299.

Appendix 4: Quality assessment scores of papers

Articles	Design	Quality criteria	Area of assessment									
			Abstract and title	Introduction and aim	Methods/data	sampling	analysis	Ethics/bias	Findings/results	Transferability/generalizability	Implications and usefulness	Total Score
		Good=4										
		Fair= 3										
		Poor=2										
		Very poor=1										
1	Hotz and Gibson, 2001	Quantitative	3	2	3	2	1	3	3	3	3	23
2	Wyatt et al., 2015	Mixed	4	4	4	3	4	4	4	4	4	35
3	Issaka et al., 2015	Quantitative	4	4	3	3	3	0	3	3	3	26
4	Gupta et al., 2007	Quantitative	4	4	2	3	2	1	2	2	2	24
5	Mwaseba and Kaarhus, 2015	Mixed	4	4	3	3	0	2	3	3	3	25
6	Gibson et al., 2009	Quantitative	3	4	4	2	3	4	4	4	4	32
7	Appoh and Krekling, 2005	Mixed	3	4	3	3	3	3	4	4	4	31
8	Baye et al., 201	Quantitative	4	4	3	3	3	3	4	3	3	30
9	Ogunba, 2010	Qualitative	3	4	2	2	2	0	3	3	3	22

10	Awumbila, 2003	Qualitative	4	3	2	0	0	-	4	4	4	22
11	Sellen, 2001	Mixed	3	4	4	3	1	0	2	3	4	24
12	Kruger & Gericke, 2003	Qualitative	4	3	3	2	3	0	4	3	4	26
13	Aubel, Toure & Diagne 2004	Qualitative	3	4	4	3	3	0	4	4	4	29
14	Colecraft et al., 2006	Mixed	4	3	2	2	2	0	3	4	4	24
15	Jegade et al, 2006	Qualitative	3	3	2	1	2	1	3	3	3	21
16	Leshabari et al, 2006	Qualitative	3	3	2	1	2	2	3	3	3	22
17	Kerr et al., 2007	Mixed	4	4	3	3	4	3	3	3	2	29
18	Nti and Lartey, 2007b	Quantitative	4	4	3	2	0	0	3	3	3	22
19	Nti and Lartey, 2007a	Mixed	4	3	2	2	2	0	3	3	3	22
20	Omer-Salim et, 2007	Qualitative	4	3	3	3	4	3	4	3	3	30
21	Bezner Kerr et al., 2008	Qualitative	4	4	4	3	4	0	4	4	4	31
22	Owino et al.2008	Mixed	4	3	4	2	3	3	4	3	3	29
23	Fouts and Brookshire2009	Qualitative	4	3	3	2	1	2	2	2	2	21
24	Hampshire et al 2009	Qualitative	3	3	4	3	3	1	4	3	3	27
25	Mwangome et al 2010	Qualitative	3	4	3	3	1	2	4	4	4	28
26	Paul et al, 2011	Mixed	4	4	3	1	3	2	3	4	3	27
27	Kimani-Murage et al 2011	Quantitative	3	3	2	1	3	2	2	2	2	20

28	Pelto and Armar-Klemesu, 2011	Qualitative	4	4	4	4	2	0	3	2	2	25
29	Matsuyama et al, 2013	Qualitative	4	3	4	1	2	3	4	3	3	27
30	Tessema et al.,	Quantitative	3	3	2	3	2	3	3	3	3	25
31	Katepa-Bwalya et al., 2015	Mixed	4	3	3	3	2	3	3	3	3	27
32	Pelto and Armar-Klemesu, 2015	Qualitative	4	3	4	2	3	0	4	4	4	28
33	Nordang et al., 2015	Quantitative	4	3	2	2	3		3	3	3	23
34	Wondafrash et al., 2012	Quantitative	3	3	2	4	3	3	2	1	2	23
35	Aborigo et al 012	Qualitative	4	4	3	3	2	4	4	3	3	30
36	Thairu et al.,2005	Qualitative	3	3	3	2	3	2	4	3	3	26

Appendix 5: Participants Information Sheet



Project title: Households cultural feeding practices of children under the age of five years

My name is Margaret Wekem Kukeba and I am a PhD student at the University of Manchester in England. I am currently carrying out a research study into the feeding practices of children under the age of five years in Northern Ghana. I would like to invite you and other members of your family to participate in this study.

What is the project about?

The project is about how we feed children here in Northern Ghana. I am interested in the beliefs, values and traditions that influence the food children eat, the way children's food is prepared and the techniques that are used in feeding children.

The health services that are currently provided in Northern Ghana are based on what health workers already know about your needs. The findings of this study will improve the understanding of health workers so that they can plan and provide appropriate nutrition health care for the children in this community.

Why have you been invited to take part?

You have been invited to take part because you feed the child (children) in your house and can best explain to us how you manage this. You do not have to take part - your participation is entirely voluntary. You may also decide to withdraw once the study has begun if you wish.

If you do decide to take part you will be given the opportunity to ask any questions and once you are ready, you will be asked to sign a consent form. The consent form will give you the right to withdraw at any point in the study if you decide to.

What will be my role in the study?

The study is about how children are fed and so I plan to observe the preparation of food and feeding of the children in their normal surroundings (the home). The study will involve observations of up to 15 number of families 5 number of times. The study also involves discussing with you about your choices related to feeding your children (for example why the child's food is prepared the way it is and why they are fed in a particular way)

Although I will be observing you in your home, your privacy will be respected and my observations will not be shared with any other members of the community. My observations of your feeding practices will be put together with observations of other participants and the findings will be written up as a research report in which individuals will remain anonymous.

The information will be managed in such a way that your identity will not be divulged. A number will be used in place of your name and the information (tapes and notes) will be stored in a locked facility. Any electronic information will be encrypted. The information will be destroyed 5 years after completion of the project.

If you have any concerns during the study you may contact any of the names below

When will the study take place?

The study will take place within your households if you agree to participate. This is because I want to learn how you cook and feed children.

How long will the study take?

With your permission, I hope to spend up to five days observing feeding practices in your house. The total numbers of hours that will be spent in your house depends on the frequency and amount of time used in feeding the child. The conversation times (interviews) will be negotiated with you.

What will happen to my contributions in the study?

The information you will provide in the study will be used to inform local health policy and provide information that will lead to better nutrition services. A summary of the findings of the study will also be made available to you after it has been processed.

How to obtain further information

If you require any further information related to me or the study, you can do that through:

SUPERVISORS:

1. Professor Peter Callery:
School of Nursing midwifery and social work
The University of Manchester
Oxford Road
Jean Macfarlane Building
M13 9PL
Manchester
Peter.callery@manchester.ac.uk
Rm: 4.327

2. Dr. Debbie Fallon:
School of Nursing midwifery and social work
The University of Manchester
Oxford Road
Jean Macfarlane Building
M13 9PL
Manchester
Debbie.fallon@manchester.ac.uk
Rm: 5.306

3. RESEARCHER'S NAME:

Margaret Wekem Kukeba
C/o Mwin Eric
Lands Commission
BOX 436, Opposite Ghana health service
Bolgatanga UER, Ghana

Ghana Health Service Contact person

Name to be provided by District health
Box 26
Bongo District
Tel:

Appendix 6: informed consent



INFORMED CONSENT FOR A STUDY OF HOUSEHOLDS CULTURAL FEEDING PRACTICES OF CHILDREN

I..... agree to take part in the study of household's cultural feeding practices of children.	<input type="checkbox"/>
I have read, asked questions and received an explanation of the study, and I have been given a copy of the project information sheet	<input type="checkbox"/> <input type="checkbox"/>
I am aware that I am free to withdraw from the study at any time without giving reason	<input type="checkbox"/>
I agree to be observed and interviewed during the research.	<input type="checkbox"/>
I also agree that interviews will be audio recorded and photographs of scenes where feeding takes place (e.g. Cooking areas) may be taken. No photographs of participants will be taken.	<input type="checkbox"/>
I understand that only the researchers will have access to the recorded information and transcripts and that my identity will not be revealed in any unpublished or published reports from this project.	<input type="checkbox"/>
I agree that the my anonymised quotes may be used in the reports and publications from this project	<input type="checkbox"/>

.....
Name of participant	signature	Date:
.....
Name of principal researcher	Signature	Date:

Appendix 7: data collection topic guide (1)

HOUSEHOLDS CULTURAL FEEDING PRACTICES OF CHILDREN UNDER THE AGE OF FIVE YEARS

Participant ID... **Gender: Male / Female** **Household ID.....**
Date...

- Introduction of self and background participants' observation/interview
- Obtain demographic history of participants
- Prime content of the interview

TOPIC/DESCRIPTION	SIGNPOSTS	PROBES
	Observations	Interviews
<p>Food for Children:</p> <p>These questions aimed at finding out what kinds of food children are given, what the quantities are? What Cultural or traditional factors influence these decisions? And How the food is acquired</p>	<p>Observe the ingredients for every meal</p> <p>note the major components</p> <p>note food from:</p> <ul style="list-style-type: none"> • animal sources • plants sources • others sources • amounts of food <p>note food given to different ages</p> <p>food given to sick child</p> <p>Note whether food for male and female children differ</p> <p>Note proportion and quality of household food given to children</p> <p>Note Cooked or raw foods</p> <p>Food cooked at home or bought etc.</p> <p>Textures of foods</p> <p>What is a day's meal like?</p> <p>Note the classification of food</p>	<p>Tell me about the food you give to the children ...</p> <p>What influences your choice of food?</p> <p>Do you ever deviate from your food choices?</p> <p>Does your child like the food you prepare?</p> <p>Are there any foods that you would absolutely not feed to your child? Why?</p> <p>Tell me will your child be given specific foods on special occasions</p> <p>Etc.....</p> <p>How do you decide the quantity of food to give the child at a time</p> <p>Does the child eat between meals? If so, what other food might they access and where do they access it?</p> <p>Can you tell me about how your child/ren was weaned?</p>
<p>Preparation of Children's Food</p> <p>This topic seeks to find out the traditional and cultural influences on food preparation</p>	<p>Observe the initiation of food preparation</p> <p>Observe the combination of ingredients</p> <p>Note Length of various food preparation</p> <p>Note persons preparing the food</p>	<p>Tell me how you prepare the child's food? And what influences these decisions</p> <p>Besides you, who else is involved in preparing the child food? And what are their roles?</p> <p>How did you decide who else</p>

	<p>Note approaches used in preparation</p> <p>Take complete inventory of cooking tasks</p> <p>Observe if children food is cooked separately from other family foods</p> <p>Check difference or similarities between children and adult food</p>	<p>might be involved in the feeding of your child?</p> <p>Are there particular ways of mixing ingredients when cooking a child's food? What influences this?</p> <p>Could you tell me any particular reasons why you do these (example of chores) when cooking?</p> <p>Are there different ways of cooking this food (name of food) this way?</p> <p>How different is the cooking of children food and adult food</p>
<p>Children Feeding</p> <p>The aim of this topic is to find out the traditional ways of feeding children and the cultural influences of feeding techniques</p>	<p>Check times of child feeding</p> <p>Number of feeding</p> <p>Note Sitting position of child and carer</p> <p>Note Style of feeding/implements used?</p> <p>Note Frequency of feeding</p> <p>Observe difference in feeding among different carers</p> <p>Note the characteristics of people feed the child</p> <p>Observe the relationship between child and carer during feeding</p> <p>Note if there are age related feeding techniques</p> <p>Observe similarities and difference of child feeding</p> <p>Note children who self-feed</p> <p>Note if there is group eating</p>	<p>What makes you to feed the child at a particular time?</p> <p>How do you know when your child is hungry</p> <p>Who normally feeds the child? Who else might get involved?</p> <p>Tell me are there particular reasons why those individuals' feed the child?</p> <p>How did you all learn how to feed the child?</p> <p>Could you describe how the child is fed?</p> <p>Are there any difference in how you feed the child now and when the child was younger?</p> <p>Why do you do it this way?</p> <p>How would you know if a child is satisfied</p> <p>Tell me how your child learns to eat independently</p> <p>How do you know if your children have had enough of the food?</p> <p>How do mealtimes usually end?</p>
<p>Kinship activities related to child feeding</p>	<p>Observe the following:</p> <p>Relationship of all carers to</p>	

child

Roles of these individuals in the child's care

Decision making roles in household on child feeding

Traditional practices and customs in relation to the child food and feeding styles

Household leadership and child feeding

Others.....**This part is to be updated during the observation when new concepts come up and require probing**

If the children are fed separately to the adults, when do they begin to eat with the adults?

Are they involved in adult mealtimes in any way

Closing: Is there anything else about the child feeding you would like to tell me?

If you have any question for me you could please ask

Thank you for the time; I am still around. If you remember anything you would like to tell me please contact me through (name of identified contact in community)

Appendix 8: additional topic guide

TOPIC GUIDE FOR INTERVIEWING DIVINERS

1. As you know, during my discussion with households on child feeding, I found out that you have some contribution on it. Can you please tell me what your role is in child feeding?
2. At what stage do you get involved in the feeding of child?
3. What are some of your prescriptions on the feeding of children?
4. I understand by your prescription children may not eat some foods, can you please explain some of the prescriptions and tell me what could happen if children do not comply with such prescriptions?
5. Would you sometimes prepare food for the children as part of the process of managing a child's food and feeding?
6. Will taboos about children feeding differ and could you tell me something about these differences?
7. Is there anything else about children feeding that you usually deal with that we have not discussed?
8. I am very grateful that you have made time to talk with me. Thank you and see you later

Extended topic guide derived from interviews

Role of diviner in children feeding

1. I understand from some of the households that when a child is born, a diviner may be consulted. Is this applicable to you?
2. What is the role of the diviner in the feeding of a child?
3. Did the diviner have to give you a guide on the feeding of this child?
4. What information did the diviner give you about the child's feeding?
5. What do you personally feel about the information?
6. Is there anything about the role of the diviner in child care that you may want to share with me?

Content of food

1. How do you feel about the foods that are currently given to children?
2. Which of those foods will you consider indigenous and which will you consider non-traditional?
3. Do you have any preference for the food that should be given to children?
4. Why do you prefer this food over the other?
5. Does it really matter, which food should be given to children?
6. How do you feel if your child chooses to stay without eating food a whole day?
7. When will you resort to only breastfeeding or food only?
8. How will you describe the role of breastfeeding in the nutrition of your child?

Child feeding social influence

1. Kindly describe how the relationship between the weaning of the child and the time of initiating other food to the child?
2. I understand that children weaning may be related to the wishes of a mother to have more children quickly or to prevent their husbands from going out after other women, can you tell me more about this?
3. Is there any reason why a woman cannot have sexual relationship with their husbands without resorting to initiating weaning or introducing the child to food early?

Food insecurity

1. What can you say about the availability of food in this community for children?
2. Are there people who may have food but would not necessarily feed their children with it?

Appendix 9: Example of interview transcript

Participant: Lamisi (interviewee)
Relationship with child: A mother
Setting of interview: Compound of mother
MK: Margaret Kukeba (interviewer)

INTRODUCTORY ACTIVITIES

MK: How are you and the family?

Lamisi: Everyone is doing well. What about your family too?

MK: we are fine. I am here today, having observed how you cook the child's food; I hope we can talk about some of the things we could not discuss during the cooking. Are you still happy to have this conversation as discussed?

Lamisi: Yes, I am happy to have the conversation.

MK: as we discussed, you will have to thumbprint the form to show that you understand and agree to the conversation?

Lamisi: is that not the same form, you gave us the other day, I still have it.

MK: Yes, you know the forms were two; one that tells you about the project and the other to sign to show you understand.

Lamisi: but you know I understand.

MK: that is true. So you just thumbprint the form to show that.

Lamisi: OK, so where do I thumbprint.

MK: do you really understand what we would be discussing if you have any more questions about the discussion you may ask before we continue?

Lamisi: my sister, is it now that, I am going to disagree. I agreed to the conversation from start. But if you do not start asking me the questions how will I know the exact question you intend to ask if you say these are those we could not talk about during the observations.

MK: OK, that is fine as I ask the questions, if you are not interested, in answering some questions, just let me know. However, it is about everything that you know and practice in your child's feeding.

Lamisi: ok, (while we talk, I place the stamp pad ink and consent form on a stool in front of participant and she stretches forward and thumbprints.

PRIME CONTENT OF THE INTERVIEW

MK: Lamisi, could you tell me everything about the feeding of this child, from the time you gave birth till now.

Lamisi: When I gave to this child, we bathed it and came to the hospital, and they told me not to give it water until 6 months. So when we started giving him water we gave in small quantities. We also gave him small porridge, and then when it was 2 months, we started to give him some TZ bit by bit. When it was now 2 years, he started eating any family food that we cooked. So we were doing everything gradually. The porridge was always very light and that applied to the TZ when it started eating until he was grown enough to eat the family fed.

MK: so when did you start giving him water?

Lamisi: When we returned from the hospital after the injected him. We did give plenty. It was just small. You know the herbs. Is that what we use to welcome children? Then, when I gave him plain water, jut small to push down the breast milk. He likes to suckle.

MK: ok, what food where you giving him when he started eating?

Lamisi: these family food included TZ, soup, savoury and the porridge. You know what the sell in the market place. We use to buy and give him in the morning and then he would continue to breastfeed throughout the day

MK: any other?

Lamisi: when we also cook rice he eats. But you know, initially, he could not eat rice well.

MK: Why do you give him such foods?

Lamisi: I decided to add those foods because we realised that the breast milk alone was not enough for him. He will be crying and when you put something in his mouth he swallows so that was why I decided to give him food. There are other things I did not mention; Dawadawa, fruit, mangoes and the sibusibi.

MK: so do you give all these things you have just mentioned?

Lamisi: ehn (pause), yes, we can give them, but you know those things, the small (younger) children cannot eat some of these things. How do you preparing them? So when they grow. Like now, when the children go out and harvest mangoes and come he also eats, but you see the seeds of these things an choke them. So I do not really like the children giving him these things.

MK: so what foods do you not get to give to him?

Lamisi: you know our foods are the vegetables and the baobab fruits that we eat but all the others that we do not grow here; we do not get such to give to him.

MK: are there any other foods that you may give to him on special occasions?

Lamisi: yes you know during these periods, these are the things we may cook that we would not usually cook. For instance, we may cook rice and meat on these occasions. The children also have the opportunity to eat them.

MK: But you indicated that you give the child rice as part of his food?

Lamisi: that is what, I mean when we cook it on special occasions. We do not have a rice farm and coming by money to buy that is not easy. So we scarcely cook rice in this house. What we mostly cook is the TZ. That is our food and that is what the children eat.

MK: and the meat?

Lamisi: meat is the same. When we get meat at the end of the year, you put small in their mouths.

MK: ok, so can you tell me how you fed him when he is sick?

Lamisi: when a child is sick, you prepare their food separately. I would usually prepare small TZ with slimy soup and sour guinea corn porridge for the sick child. But this boy, he only gets high temperature when we take him for immunizations. But he scarcely becomes sick.

MK: why would you prepare his food separately when he is sick?

Lamisi: (laughing) you know we think that as they are sick when we give them such food the sickness will not be able to overpower the child. Besides, you know when they are sick they are weak and may not be able to eat our hard TZ.

MK: so, what do you put in the food that will make the sickness less severe?

Lamisi: nothing we just feed, it is just that you make the food soft ad to me, I think that helps

MK: what makes you think that might be of help to the child?

Lamisi: you see it is nothing; it is the same food that we also eat that we prepare it separately for the child. You know ideally, we should prepare sometime nicer, but because we cannot afford, we decide that we should prepare the same food separately for the sick child and make it lighter.

MK: are there foods that you will personally not give to your child?

Lamisi: there is no food that I can think about not giving to my child. Anything we eat, he also eats.

MK: when you are feeding the child, how do you determine that the child has had enough?

Lamisi: because he was still small, when he was ok with the food, he just shakes his head and now he can actually tell you that, he is ok.

MK: when he was younger, how did you do that?

Lamisi: when he is hungry, the way he receives the food from you at the start is usually different from when he gets satisfied. Sometimes even when you give him, he refuses to receive it from your hand. And that is when I also stop and that is what I use to know if he is satisfied with the food.

MK: on a day bases, how many times, does he eat?

Lamisi: he eats about twice a day.

MK: what informs your decision to feed him twice a day?

Lamisi: you know when he is hungry, he will come and tell you, and you will give him the food. Sometimes he can actually eat up to 3 times.

MK: so are you able to feed him this number of times a day?

Lamisi: Not always, sometimes he eats once and another times twice, because of the scarcity of food.

MK: you mean sometimes you don't have the food but in this village you farm

Lamisi: you know in this our village, we do not farm and get good yield. You can just farm and harvest nothing and sometimes you have to go to market to buy food stuff and if you want to cook and eat to full satisfaction, will you get some for tomorrow? So you have to cut back the food sometimes.

MK: why do you not get good yield from your farming?

Lamisi: it is the rainfall pattern, what can we do. We do not have good rains fall in this town.

MK: I see, so this child, when did you wean him from the breast?

Lamisi: I think he was about 2 years and above before I weaned him

MK: what prompted the weaning?

Lamisi: we say when we allow children to over suck, it makes them foolish, and so we should wean them by 2 year. He is now almost 28 months.

MK: At what age would children usually be weaned in this village?

Lamisi: children could breastfeed up to three years and above before they are weaned?

MK: why are children weaned at 3 years and above?

Lamisi: they have observed that their children are not intelligent so they think if we reduced the years; it could improve the children intelligence. That is why I decided to wean him at 2 years.

MK: where did you hear the information about the intelligence?

Lamisi: it is people who have been talking about it. My colleagues, women sometimes it seems some women bring information from the health workers. People in our community, not the nurses, the women say a lot of things when we are together conversing.

MK: are there other people in your compound apart from you?

Lamisi: well my little girl, as you saw her, she can also cook. But she goes to school too.

MK: ok, so who cook for the children?

Lamisi: it is just me who cooks his food.

MK: what of your husband and mother in-law and others in your household?

A: my mother in-law is late, but my husband is travelled out of the village. He will come when the farming season is drawing near.

MK: So what kind of role does your husband play in the child's feeding.

Lamisi: when he is around, he buys food stuffs, but now that he is not there, I find the food to give to the children. However, when it becomes critical, he sends money or asks someone to lend us money for feeding. Me and him we also farm. That food is what we use most of the time until it fishes and then we buy from the market

MK: so your little girl, does she cook for the child to eat some?

Lamisi: yes sometimes she cooks and but, I cook most of the time for all of us to eat including him.

MK: so do you currently cook his food separately or cook all together?

A: you know sometimes during the day, we are not home, so we cook something small for him to eat in the afternoon. But in the evening we all eat the same thing.

MK: what times of the day do you give him food?

Lamisi: Sometimes in the morning we give him something to eat or we just cook afternoon food early, then we eat, then we have the evening meal.

MK: how are you able to tell that he is hungry?

Lamisi: when he is hungry, he will come to me and tell me.

MK: but when he was smaller how you did know that:

Lamisi: then, when his tummy goes down and he has sunken eyes, then you are able to tell that the child might be hungry?

MK: Could you tell how you learnt child feeding?

Lamisi: you know no one will teach your child feeding, but when you have a child, you also do as you can and learn on your own. As for a woman when you are growing up, you are expected to learn from the grown up women in your house before you even marry. So you have to open your eyes and learn.

MK: What of the cooking, you just learn it automatically on your own too?

Lamisi: that one your parents teach you when you are growing up. When your mother teaches you, she makes you watch her whiles she cooks and when you reach some stage, she supervises you to cook, by helping you to go about every stage of the cooking process and that is how you learn.

MK: When did your child start eating on his own?

Lamisi: it was within his 2 years, that he started eating. But even before then, he used to eat on his own sometimes. But now he eats by himself most of the time.

MK: So before he started eating on his own, how did you feed him?

Lamisi: I used to put him on my laps and put the food in his mouth.

MK: I understand that when you have a new born they consult a diviner who may determine what food the child will eat?

Lamisi: there are some, who may go because the child's temperature is high and there may be the need for them to pour libation (Pause)

MK: But I also understand that even when the children are just born there could be a consultation, what about that?

Lamisi is it about the herbs we give to children. Ok, you see there are those who may go and buy the herbs from sellers and there are those who may be directed by the diviners to dig up a particular root or harvest some special leafs and give to the child before the start sucking. This child's herbs were from the old lady in this house. She knows the herbs we use in this house. So she boiled them as she also bath the child. My husband goes to the diviners but for his own reasons which he does not tell me always. When he was travelling, he said the diviners had told him that he should sacrifice a fowl to his fathers' so that they would clear the way for him. So we poured libation and cooked before he travelled.

MK: ok, tell me all that you know about the consultation of the diviner in relation to a child's herbs?

Lamisi: ok when the new born is received and taken into the room, they will soak some herbs and drop some in the mouth of the child, when they do that, because the doctor people say we should not be giving water, they just leave it there. This is because the herb is our ancestral thing and has to be done. But as you know we did not go to the child for this child.

MK: what of the diviners house, what is done there?

Lamisi: I do not really know what they do there, but sometimes if the diviner tells them so, they can come back and say a child taboos some food like guinea corn and we have to stop giving it to that child and the mother who is breast feeding will not also eat it. (Can I go and find food for this child). He appears to be hungry.

MK; it is ok for you to go. We can always talk later. I will talk to the old lady outside. Thank you for your time.

Lamisi: you are welcome, see you later

Reflection:

This interview was interrupted to allow Lamisi feed the child. We started the interview at about 10:30 am and had done about 45 minutes. Lamisi had indicated before the start of the interview that Barry, her child had eaten left over TZ and she had planned to cook a meal for lunch a dinner.

As the interview went on Barry came in and lay on Lamisi's laps. She asked him if he was hungry and he said yes and was teary. She asked him to go and get some water. This is when she requested that we postpone the interview so that she could find food for Barry. The second part of the interview was therefore scheduled for another time.

During the interview, some of Lamisi's responses appeared to be socially desirable responses. She indicated that she had not practiced exclusive breastfeeding. She appears to suggest that members of the community were interested in breastfeeding, and while they may give a child some fluids, they exclusively breastfed their children.

PART TWO OF THE INTERVIEW:

MK: you were describing to me when the return from the diviners place what happens

Lamisi: As I told you the men cannot tell someone like me what the diviner says, unless the deity request for a fowl or something, and we have to cook the food, then they will tell you to prepare flour for the TZ for the libation. I told you. When my husband was travelling we poured libation.

MK: I see, but I actually want to know is about the child food and feeding whether the diviner would requested or prescribe something related to that and what that could be?

Lamisi: you know there are those that they would come back with the information that the person taboos something while for others there will be no pronouncements like that. so if the child taboos something they may perform all the necessary ritual that may allow the child to that food. Sometimes a child may not be able to eat that food in their life.

MK: Ok, thank you. I have been going round; I have observed that even though every household rear one animal, you said that you only gave children meat occasionally. Why is it so?

Lamisi: you see it is because of the amount of poverty in this out community. Is the money enough for one to buy foodstuff, salt, pepper and still be able to buy meat? No, that is why we do not cook meat. Even most of us do not even cook Amani and dawadawa. When we get even only salt and put in our food, it is even enough for us to eat.

MK: but you rear a lot of animals?

Lamisi: As for the rearing we do, there are those who will rear and the animals will survive and those who will rear and everything will die. Again, you may have to sell some of those animals and buy food stuff for the family when times are hard.

MK: I see, but why can't you also kill some and use to cook?

Lamisi: (laughing) if you kill some and eat and your foodstuffs finish and you want to go and buy some, where will you get the money again, that is why you should rather not kill and eat.

MK: but you can eat the meat as food?

Lamisi: you can be satisfied when you eat meat. Meat only does not fill one's tummy.

MK: So, you do not cook meat alone for the child because it does not fill the tummy.

Lamisi: yes, we use meat to cook when we pour libation and during the Christmas and New Year. But we don't eat it always and children should not be given it always.

MK: I learnt that from some people, I have already spoken too. Why should you not give children meat always?

Lamisi: you see when you do that people think badly about you and talk. Especially if you do not have enough resources and do that, and some problem come or the next day you are looking for even food to eat and you do not get, that is why people always talk about you. If for instance, you will get to eat both food and meat all the time, no one will talk about you. But if you get and use to eat meat today and tomorrow you go to beg from someone, no one will mind you.

MK: so the reason for people talking about you is because they feel you do not have and is living that kind of life? But if you do not have and prepare TZ why don't people talk bad about you, why is meat cooking different?

Lamisi: (smiles) you know as for we frafra's the way the poverty is if it is that you have enough and go to buy meat, but because you do not have you just have to look for food, will you be looking for meat?

MK: what does meat mean? Is meat it not also food?

Lamisi: it does not mean anything. You know when you eat meat, it helps in your well-being, but because you do not have the strength to buy meat, that is the problem?

MK: that is why I am asking. You have no strength to buy meat, but you are able to buy ingredients to prepare TZ? Why is meat an issue?

Lamisi: you know, they say meat is everything, so when you take it and is it not rich people talk.

MK: I agreed, but why is it so with meat and not with TZ, what about meat makes it so?

Lamisi: You know as for TZ it is a common thing that everybody eats, so if someone is eating meat people will talk

MK: but, animals you can use for meat are equally common. Why will people talk?

Lamisi: you know meat is an expensive item that is why. And there are people who cannot even afford food, but when they get small money they will go and buy meat and come. The next day you will see the wanting. There is someone who may not have anything. If the get money should they go and buy meat, should it not be ingredients for food.

MK: Ok, I also learnt that it is not proper to give children meat? Tell me something about that?

Lamisi: you know some children can eat it and get use to the meat and one day if you do not have to give them, it becomes a problem.

MK: why will it became a problem?

Lamisi: when the child does not get that to eat today and tomorrow when the see someone's own it will be crying for it and that will mean bad training.

MK: but if a child does not get TZ to eat today, won't that child cry?

Lamisi: that child can cry of cause.

MK: so why will the child cry for meat be a case?

Lamisi: you know the meat is called meat. If it is the TZ and the child is crying, you know the child is hungry so you find food for the child, but if it is meat, it does not satisfy tummy. But if you have your own to give him, faire enough, but if you do not have, then that child will give you problems. You see like this one you can give a bit occasionally. But imagine the younger ones, their stomach will pain. Especially fresh meat, if you try it the child will cry the whole night. So we don't even try younger children.

MK: I also learnt something as I went round the houses. Why will weaning one's child early prevent a husband from going out?

Lamisi: (laughing) that their husband should not go out because there are so many diseases now so that they will not be infected.

MK: uhm, I see. So how does the child waning prevent the husband from going out?

Lamisi: you know it is that the women should even protect themselves so that they and their husband will be there. But uh, you see, if you have a baby and sleep with your husband, it is dirt. That is why I am saying the woman should protect herself.

MK: tell me more about that?

Lamisi: I don't know a lot about that. But imagine giving children meat and they get used to it.

MK: you have mentioned ingredients and food. What is the difference between these two?

Lamisi: The ingredients are different from the food. You know millet is TZ and ingredients or baobab leaves are for the soup.

MK: so can you give one can leave the other to a child to eat?

Lamisi: No, you can't do that, the child cannot eat or swallow only the TZ without soup; you need the soup for the TZ to be swallowed. The mouth cannot taste the TZ and swallow without soup. It is not just possible to eat that unless there is extreme poverty and you use water in place of the soup.

MK: you have mentioned poverty several times. Can you tell me how that affects children?

Lamisi: That is what I have already said. If there is no food and money, how can we feed the children well? We don't have and that is it. We all starve. All the things the clinic people are always talking about is it not all money we need to buy.

MK: But others say there is abundance of food and their children still don't eat well. What is your opinion about this?

Lamisi: it is a matter of opinion. As for me, it is my responsibility to take care of my children so that in future they can care for themselves in future.

MK: why will people with enough not care for their children?

Lamisi: you see those who have and they do not want to give to the children because some of the children become irresponsible so if you leave them, they will become wise.

MK; are you suggesting that when you take care of a child well it does not become wise?

Lamisi: yes, so you have to give them just enough as that makes the child wise.

MK; why will that happen?

Lamisi: you know when some children get too much they become spoilt but when you give a little, they become wise, even sometimes you the parents have not had what they are enjoying, but the child starts t misbehave. So it is important that people do not over indulge their child.

MK: is there any other thing, you remember that you will like to tell me?

Lamisi: No, when you come around. Thank you for coming (whiles rising up)

MK: thank you very much for your time. Bye.

Appendix 10: Example of observation field notes

Observation field notes 7th to 14th November 2014

Abaa, s Household, Compound 1

Context:

This is observation conducted in compound one of Abaa's household. Abaa's household is made of three compounds, two of which had children under five living in it. The house is made up of 3 major compounds, comprising of 2 brothers and their wives, a daughter in-law and one auntie. The 2 compounds had 3 children less than five years included in the study. One of the brothers had travelled to one the towns I southern Ghana in search of greener pastures as was reportedly the practice during the dry non-farming season for most of the men. One of the children's fathers was also said to live in the big town.

During the fieldwork, the people living in the household included one of the brothers, his wife, and child, and his daughter in law and her child in one compound. This man's brother's wife also lived in another compound with her two children. The third compound was occupied a woman simply described as auntie of the man. One of the children lived in different compound and observations were carried out differently in that compound. Two of the children are in the same compound. This observation was is about the compound with the two children.

The first child (Palo) is a male and was 15 months at the start of the fieldwork. The second child (Tee's) is a girl and was six months when the fieldwork started. The relationship between the two children in the one compound is that they are a nephew and uncle.

Palo's father is the grandfather of Tee, and also the head of the Abaa's household. He is a cattle trader and a farmer and travels occasionally to neighbouring villages to buy any category of animals such as sheep, poultry and cattle and sells them to people in the bigger towns. Abaa, as this father is called, consented to the study and gave a thumbprint. However, he said he was sceptic about fraudsters going round deceiving people and collecting their money and he needed reassurance that, I would not ask for payment for collecting information to showcase their community to the world. Tee's mother who was the initial contact interrupted during this discussion and asked him to contact the midwife who introduced me to them. He added that he only needed assurance because he was not willing to pay any money to me.

The initial participants in this compound were Tee and Palos mothers' preparation and feeding of the children. Palo's mother who is named in the study as Kapurri is a produces and sell the local malt used for preparing a local alcoholic beverage, pito. Kapurri like her husband Abaa travels to neighbouring villages to buy guinea corn which is used for preparing the malt, which she sells in the village market most of the time, at home and some villages.

Samara, Tee's mother, on the other hand, is a housewife who neither trades nor employed. Her husband shops for she and her daughter and gives her money when she makes a requests for it.

The compound

This compound had three (3) all- in- one sitting and bedrooms. A round open top hut kitchen, one open cooking area (another kitchen) located at northwester and another at the south eastern part of compound. Two hen coops were also located in the compound one very close to the enclosed open top kitchen. A bathroom similar to the open top kitchen was located at the north-eastern part of the compound. All these rooms open into a large yard where cattle and other animals are kept. All ever, there are also three other gates, one opening into one of the compounds and the other two gates opening to the outside of the household.

There was a coal pot and utensils (water pots, basins, and bowls) in the veranda of one bedroom. I was told that place was sometimes used as a place for cooking when it rained. There were stone stoves at the two cooking areas. In addition, the cooking at the south eastern also had a few utensils around it. An empty pot was on the stone stove. Observations on the feeding of the two children in this compound were carried out concurrently.

The interactions

I arrived in this house at 7:15 pm, and exchanged greetings with Palo's father. I also exchanged greeting with Tee's mother Samara who was sitting by when I entered the compound. Palo in a rhetorical question said, so you said you want to understand how we cook our food and feed children. He then started to give me an overview of foods that are given to children when he was a He said if the children reached the time to eat leafy vegetables, these were given to them. He also mentioned Groundnuts, Cooked millet and Millet floor water. He then added that the children did not like the foods and it is difficult to feed them. He also added I was told that I was a native of one of the towns in the region, and he expected me to know what to feed a child. I explained to him that my individual opinion could not be what everyone else does; besides there may be differences that could only be known if I had information from their perspective.

Whilst Abaa talked to me, his wife, Kapurri interrupted and said: 'My child does not eat, he wipes his mouth when I put anything in it, and so I feed him on the breast milk only'. Meanwhile, When I first entered the house, she stood at a distance and when I drew closer and greeted she responded and went back to continue with her work. Unlike the usual way of greeting, she turned away immediately and did not seem to be interested in taking with me. I observed that she was busy drying her pito malt (raw material for alcoholic beverage) in the morning sun, so I did not engage her. Within that period a woman another woman entered the yard, and Kapurri indicated that she was very busy. I later asked her when I could have a chart with her and she told that she was available at any time to talk except market day of a nearby village where she sells her wares.

There was no sign of cooking that morning either and I did not ask because of the initial statement from the mother about her child not wanting to eat. She requested that I returned to her after leaving the compound of the third child's mother. I, therefore, decided to move into the next compound as her daughter in-law was washing and had indicated that her daughter Tee was asleep.

I returned from the third child Faadi's mother to see the Palo holding a bowl and eating from it by himself. The bowl contained Tuo Zafi (TZ) (millet gruel) with dried okra soup. When I approached, Palos mum moved closer, cleaned her hands on her skirt and started to feed him with her fingers, and said to Palo, " you see, I told you to wait and I will come and feed you. Then she said referring to me, you see, he only prefers to play with the food. Palo received 5 morsels from his mum and refused the rest of the attempts made by his mother to feed him. As she continues attempting to feed Palo, she said to me, 'I know you are around. Come at any time and visit us and I will tell you more about this boy, He does not like food". I thanked her for the invitation went on to Tee's mother, Samara.

Reflection: Kapurri seems to be busy, even though she shows willingness to be engaged. Her behaviour seems unclear. It was not also clear to me whether her decision to feed Palo was because of my presence. I am therefore taking note to observe her attitude towards me going forward. I realised from leaving the household that the next morning will be the market day of the neighbouring village and most traders went there to trade and many will prepare their wares on the day before the market day (a woman on my way to another house provided this information). This is when I enquired about the market day of their village to determine which houses to visit that day. She said many people did not sell in their village market, but go there to shop and socialise. She then told me that they traded in the next village in Burkina Faso which is good for business. Are there households that have more traders than others? Reassess houses that I could visit on the market days (other people caring for children, non-traders)

Samara and Tee were sitting by playing and she told me that. Tee had had some of the TZ that Palos had eaten. She asked me what foods to give to Tee as she did not like most of the foods she had started offering her. She indicated that she had been advised by her mother in-law and other women not to put sugar in the corn dough porridge she gives Tee. She said Tee only preferred to eat TZ and viscous soup such as the dry okro soup, and porridge with sugar. I advised her to visit the health workers at the Community health planning services centre (CHPS) and ask for advice and she accepted to do so. I then asked her what food she had planned to feed Tee the rest of the day and she told me that she had no plans to cook and that she would breast feed her. She said, however, that if Kapurri wanted them to cook, then Tee would eat that food.

I excused them and moved to another house to return later. When I return later, around 5:30 pm, the house was quite. I realised that Tee and the mother were not there as their door had a padlock to it. However, I heard Palo's mother talking inside her room, but when did she not come out when I called out to check if anyone was home. I, therefore, decided to proceed to the other compound with the third child (Faadi). On my way home that evening after interacting with Faadi and the mother, I passed by Tee and Palo's parents compound to check if I could find out about the children's feeding. Tee's mother was bathing her in a basin and told me that she went to visit a friend. She then told me that even though there was food in the house she visited, Tee refused to eat and only had breast milk since the last time I saw them. I said good bye and left and informed them of the next day's visit.

On this occasion, Tee's mother (Samara), was carrying Palos on her back, when I arrived in the house. I was told that Palo's mother had gone to a nearby town to collect her monies from her customers. I asked Samara's who usually took care of Palo when his mother was away, and she told me, 'I always do anytime she is not around'. While she carried Palo on her back, her daughter Tee, who was soaked with water used in washing clothes and standing in the middle of the yard started crying. Samara reassured the little girl that she would pick her soon, I asked why she would not put Palo down from her back, as Palo was just staring and she said Palo was crying and was even more difficult to deal with than Tee. Thus if she kept him down he was going to cry for hours non-stop. While I got closer to pick Tee who had crawled to her mother, Tee's mother also started to put Palo down by unfastening the cloth she used to back Palo. Palo started to cry and Tee's mother said to me, you see how he is, he always wants to be backed, meanwhile, his mother is never home and becomes difficult for me. He is such a naughty child. He does not want me to pick this child Tee, but to continuously back him. I asked if Palo's crying was not related to hunger, and Tee's mother retorted, Oh madam. 'Do not go there, he does not like food, so when you bring food now, He will even cry more, as for me I will try to leave him at my back till he sleeps'. So do you have any idea if he has eaten this morning? No, he has only taken breast milk. When I cook lunch I will feed him by then he would be too hungry he might eat.

What of your daughter. I am going to prepare porridge that is why I am picking the coal pot. So she sets fire, outside the house in the coal pot with charcoal and brings it back into the yard while I watch her daughter Tee. She brings two saucepans, with a big cup of water. She pours the water into one of the pans and mixing corn dough, which she had brought from one of the rooms, she then uses a strainer that was in the other pot and sieves the watery dough she had mixed. She puts the content on fire and started to stir. She adds a pinch of salt and continues to stir until the substance thickened and started blistering, then she put it down. She told me that this girl does not also like this porridge but I have been giving her small quantities. What can I add to make her like it? I told her that she could find out from the midwife and she will give her a lot of information. She indicated that she actually thought about seeing auntie G, one of the community health nurses. I, therefore, encouraged her to do so.

When she finished she dished the porridge into a bowl that she picked from the kitchen and rinsed

with plain water from a steel bucket that stood by the cooking area.

By the time she finished making the porridge, Palo was asleep and she excused me to lay him in his mother's room and returned. Tee's mother then picked up Tee and sitting on a stool with the porridge she started to feed Tee with it, with a cup and spoon. Tee turned her face away when her mother sent the porridge towards her mouth. Her mother then held her firm and pushed the porridge slightly with the spoon into her into her mouth. After taking 6 spoonfuls of the porridge Tee started crying and struggling. Tee's mother then asked me if I could pick a bottle with water from the room for her. She took the water from me and feed Tee. After that, she continued to feed Tee, but Tee will not collect the porridge and kept struggling and crying on her laps. Tee's turns her head to the side anytime the porridge was sent near her mouth, after sometime, her spat out the porridge and sprinkled it on the face of her mother. Tee's mother was so shocked; she said to me that Tee's had learnt something new. Tee's mother explained that Tee did not know how to spit so she took advantage and always try to push the porridge into her mouth, but now that she is able to spit, it means she was going to give her had time in feeding her. Tee's mother then said to me, you see this is what she does. She prefers TZ but how can I prepare small TZ for just you. I asked her what other foods she gives to Tee and she told me, it only this, the breast milk and any family food she agrees to eat and added that T liked TZ better. So I feed her TZ in the evenings

I asked her what she was cooking for lunch and if Tee will eat and she said, she does not intend to cook any longer, she would give the rest of the porridge to Palo and they will both suck breast milk until evening. I, therefore, requested to leave and to return later.

I returned at 5 pm and Tee's mother told me that she did not know what to cook because Palos mother was not home yet. I asked her what else Palo had eaten after the porridge and she answered nothing. She indicated that He had been crying intermittently, but that is his nature. "He likes to cry".

While I was still hanging around chatting with Tee's mother, Palos mother arrived and shouting from the gate, she said where is my son, he should be very hungry. Has he eaten something at all? Then Palo hearing his mother's voice started crying and moving in the direction of his mother. She then told Tee's mother if they could prepare TZ and dry Okra soup. After that, she said to me you are welcome. Tee's mother then went into one of the rooms, brought out a container with ingredients and then went to set fire. I asked Tee's mother if she would not use the coal pot as she did in the morning and she told me, I bought the charcoal myself and if I use it to cook the whole house food I will not be able to get some in the morning and boil water or cook something for my child and myself. She said this under a low tone. She told me it is not always that they cooked together; sometimes she does not even mind me. She is very friendly with me when she is very busy and needs me to look after her child. She sets the fire while I pounded the dry okro for her as I asked her to let me. She then put water over the fire and added salt petre. She came over when the water was boiling, took the okro I had poured and kept, and poured into the boiling water. She then added the salt petre, dawadawa and Amani and kept stirring it. There was fizz and the soup was almost overflowing into the fire. While, she did this, Tee was on her back, so I asked if she would like me to take Tee while she prepared the TZ as it was almost ready to be stirred and since it is a thick pap, she needed to sit on a stool.

Reflection

Even though she rinsed this bowl, she did not do the same with the pots which she brought out from the kitchen she did not rinse the saucepans she used for preparing and cooking

She hinted me not to ask. She then told Kapurri that she was putting the water on fire for her to prepare the TZ as she was going to bath her child, who may sleep without bathing. Kapurri

hesitantly got up and put Palo down on his feet and said oh I thought you were just going to prepare the TZ as well. I realised that Tees mother did not look back and went straight to her part of the compound.

Palo's mother got to the fire side and gathering bowls and flour she started all the process of TZ, prepared the porridge and stirred the TZ. I sat by whiles she did all this and did not talk to her as she did not seem ready to be engaged in a chat. When she finished and packed everything, she called out to Palo who was by this time on the flour sleeping. She picked him up lamenting that this boy has not bathed and she could not wake him up to bath since it was a late. By this time it was 8:45 pm and they use a rechargeable lamp and dry cells torchlight to provide light in the yard to see and carry out activities.

She said this referring to me and I responded and said I was worried he would not be able to bath nor eat. She said, oh as for the food, I did not think he was going to eat again after sucking for such a long time. You know he prefers the breast milk to everything, so when he gets that unless I am not there he would not agree to eat. That is why I always live him to be with Samara, Tee's mother. I asked her where she went, and she said uhm, you know, I told you, I am always on the move, I trade and if you do not move around like that your business will collapse. Sometimes, I take Palo with me, but when we are stranded; it's always difficult with a child. So when I have the opportunity, I leave him home. Whilst she was still talking, she took him inside a room then Tee and her mother came to the cooking area and picked their food and went around their area. Tee's mother invited me to eat with her, but I informed her that I was ok as I had eaten before coming into their house. She then sat and put Tee on her laps and started to feed her. She fed her for some time and T started struggling to get down and move towards the kerosene lamp that they had lighted and put nearby. Tee's mother then told me, auntie, you see after all the struggles she expected me to prepare all the food and bath Palo and Tee but I just went away so that she would not get the chance to tell me to do all those things again. I thanked her for engaging me throughout the day and requested to leave. But she asked if she could see me off since it was dark and I told her that the person I stayed within the next village was around to pick me. She, therefore, said goodbye and I also said goodbye to Tee's mother and his father who had also come and left.

Day 3

This day I went to this house in the afternoon, and when I arrived, Tee's mother was busy cooking rice and beans whiles she and her mother in law who was selecting some grains were chatting from a distance. Tee's was on the back of her mother while Palo played around the compound. The sun was scourging and Tee's mother was literally cooking in the sun and so I asked her why she did not place Tee on a mat in the shade to be playing whiles she cooked. She said to me that Tee will crawl into the sun and the concrete floor burns and she will end up crying. Her mother in-law, interrupted from a distance and said to me do not mind her, she does not want the child to put things in her mouth, but every child does that, I have told her that her child will not be the last to eat dirt. It is not about the sun it is just the flour she does not like the child to explore.

I, therefore, asked her to let me carry Tee so she could cook. Tee did not hesitate to come to me; so I put her on my laps and sat on a plastic chair that was brought out for me. The rice and beans were already on the fire so I did not see the process. However, after 20 minutes she put it down and using oil, tin tomatoes, pepper and anchovies she prepared the sauce that accompanied the rice. In less than 20 minutes, the sauce was ready, as she pours the tomatoes into hot oil on fire and added all the other ingredients and allowed it to simmer.

Today, I could not refuse to eat the food, so I requested that she gave me just a little bit of the food when she was beckon by Kapurri to serve me. Palo was served and his hands were washed by his mother and food put in front of him. He started eating and after sometime started to cry. Palo's mothers then fetch water and put it to his mouth. After drinking the water, he refused to eat and continued to cry. His mother said those cries are sleeping cry and asked him to come to her.

She put him on the laps and put him to the breast and in less than 5 minutes, Palo started to sleep.

Tee's mother, who also sat close by with Tee, ate and fed Tee. Tee's mother would select only beans with her hand, and mashed them and push into Tee's mouth, I asked her why she was pushing the food into her mouth and she said Tee did not know how to open her mouth and to receive such foods and did not especially like those kinds of food, so if she did not push it inside she would not receive. Her mother in-law interrupted and said I do not know why you are forcing to give this child food so early. If the child wants to eat, it will eat and Tee likes to suck, so what is your problem". Palo's mother then turned to me and said you see, because you people encourage them, they do not even want children to suck. And I won't be surprised she has gone to do the family planning. As for you people, it pays to be patient. T's mother who had finished eating got up and as she walked away, she made a face at her mother in-law, who did not see it.

You see because they now do family planning and nobody will know what they are up to, they push food to the children quickly to wean them. Tee eats more than Palo, but she is always complaining and does not listen to advice. You do not have to rush and start anything. The right time will come.

When Samara returned, I asked her why she was not giving Tee some of the rice but was selecting the beans. She told me because the rice was still a bit hard, it could not be easily mashed that is why she only selected the beans, I also asked what Tee's was going to eat that afternoon and she exclaimed, ooh madam, do you mean I would have to cook something for her, she will suck. We even are going to see a friend in the other clan up there. I do not intend to even cook again. Palo's mother asked, ' you would not cook, so what would your father in-law eat when he returns. Tee's mother replied that he was not returning as he indicated that he was going to 3 markets in 3 towns and would return the following day. The mother in-law said ok and Tee's mother picked from the ground and the headed for the gate. When Palo's mother realised that I was not getting up she spoke indirectly saying she was going to find water to shower as the weather was very hot. I, therefore, thank her for having me and also took my leave.

All other observations did not yield any new information. The rest of the meals cooked were TZ and the children ate left over during the day. Palo mostly did not eat and depended more on breast milk. But Tee would eat a bit of the TZ and then breast milk.

Reflection:

As, I observed during the first observation encounter, Palo's mother was very evasive. Finally, she was not interviewed as she gave excuses and postponed our schedules. However, her utterances during the observations gave a good insight into some of the dynamics in households that affected the feeding of children

Appendix 11: examples of codes and indexed data

Cases	Randomly selected codes & index data				
Participant	Breastfeeding, weaning, and couples sexual relations	Complementary food introduction	Culture of religious & traditions & other activities	Poverty& food availability & food quality & community self-perception	Meat cause bad behaviour
<p>H9CP1GM</p> <p>Number of siblings = 1</p> <p>Participant Age = 55-64</p> <p>relationship with child = grandmother</p>	<p>What this does to the child is that it prevents them from taking breast milk for a long period. No woman will naturally do that but because the men always go out and it worries the women. That is why they too decide to do that. You know when you have a child you are not expected to sleep with your husband. When the men decide to go out, the women will also consider that the child is grown and then she will start sleeping with him. The child will obviously become sick if you have sexual relations while the child is still sucking. You know as you and your husband sleep the dirt, the child's spirit does not like it and this will make the child sick by all means. It is the pregnancy and the sickness that the child will contract, that is why you would not want to have sex with your husband.</p>	<p>when the child is about 1 to 2 years</p>	<p>That is how it should be, that is what I have always known. We are family that is why we live in the same house. You know in some houses first born are not expected to eat some foods until they reach some age and then they are allowed to eat. So for instance in some houses first born females cannot eat hens and for some time they can break that taboo but it depends on what the diviner will tell the household heads.</p>	<p>when we do not have the soup 'ingredients' and we have the 'food stuffs' we still cook like that for the children if you do not have soup ingredients will you say the children should be on empty stomachs. It is just that maybe they may not benefit fully from the food as all the ingredients are not there. What I mean is if one can afford, you can always cook one pot for both adults and children. but if you do not have enough, then I think you should try a prepare the children food special</p>	<p>If the child has teeth and I get meat, I will give them a bit. After all how many times can the get meat to eat? And get used to it?</p>

3: IH10CP1GM

**Number of siblings
= 2+
Participant Age =
55-64
relationship with
child = grandmother**

If you do not do that, who will take care of you tomorrow. Look at them standing there. Do If you do not do that, which will take care of you tomorrow. Look at them standing there. Do

It is not a problem, but can you be getting for the child always, It is just that people do not have. How can you have and not taken care of your children? It is only poverty that may be the cause of not doing that. it is not a problem, but can you be getting for the child always,

if a child is too small, and you go about giving them eggs and meat when the see people's things they will be crying and that is why we should wait for them to grow before you can give the child those things

if hens lay eggs and every day you pick one and say do you want egg and boil for the child and any time the child cries bit you give the child eggs it is not good training.

Appendix 12: List of Initial codes

Initial open codes	
Activities & issues competing with children feeding	Foods not given to children
Advocates for meat giving	Health professional related feeding practices
Ages of included children	Historical perspective of child feeding
Children food behaviours and perceptions of households	Household food management & child feeding
Food refusal & it's management	Hunger cues and parent response
Difficult to code	Signs of satiety
Feeding	Hygiene issues
Age of weaning children	Individuals responsible for children feeding & shared kinship care
Breastfeeding & child weaning	Men's roles in children feeding
Weaning foods feeding	Women & elderly women & grandmothers roles
Weaning related issues	Influence on food choice
Breastfeeding, weaning, and couples sexual relations	Children
Family planning & breastfeeding	Age of children
Feeding initiation	Communications related to children feeding
Feeding before 6 months	Culture of religious & traditions & other activities
Feeding schedule	Diviners
Number of feeds a day	Source of diviners' information
Ways of child feeding	Health workers
Weaning	Mother
Food	Poverty & food availability & food quality & community self-perception
Breast milk	Reasons for giving food & nutrition concept
Complementary food introduction	Pressures & practices
Reasons for rites	Fear of not complying with rules and norm
Food given to children	Personal feelings and thought
Food ingredients	Source of child feeding knowledge & skills acquisition
Food ingredients	Special & social events & child feeding opportunities
Soup ingredients	
Quantity of children food	
Sources of children food	

Food preparation

Food taboos

Social and culture perspective of meat

Age and meat & egg eating

Commercial item

Daily diet &meat

Meat &child growth

Meat as luxury &community sense of humility
&social class definition

Meat cause bad behaviour

Meat cause sickness

Meat eating is cultural food

Appendix 13: Charting Data and interpretative summary into framework Matrix

Subtheme: Religious beliefs, Customs, and traditional practices

Categories	INDEX OF DATA & DESCRIPTIVE SUMMARY OF THEMES			
	HH4CP4 Aminatu GM	HH11 ANUGA F	NUGEBACP2	HH14 Lamisi2a M
1: Households' food beliefs and taboos and the feeding of children	<i>"my father in-law, went to consult the diviner, and came back to say that, there is a deity in the house that wanted the child to be named after it and the child also said it did not like the guinea corn and that the guinea corn that I was eating was worrying the child when it sucks my breast milk. When she brought this information and I actually stopped eating the guinea corn, the child stopped crying immediately and also never became sick again. "</i>	<i>"That is true, I ever went and my late father told me to name one of my children after him, so I gave the child that name. My father could have said because the child is named after him, he taboos some foods. If that happened and we refuse and give the child the food taboos, the consequences would have been bad. "</i>	<i>"...they can come back and say a child taboos some food like guinea corn and we have to stop giving it to that child and the mother who is breast feeding will not also eat it."</i>	<i>"EM: they would tell the child's name and the taboos MK: what are some these taboos? EM: It may be what the child or their mother is not supposed to eat and how often their named deity is to be worshipped."...you see that child, she will not eat hen in her life because first born in that house taboo it.</i>
	Diviner prescribes food restrictions Child restricted from food because of sickness and	Communicates wishes of dead relatives and could include some food taboos	Potential results of consulting diviners could be taboo	A child could be restricted from eating specific foods. A child in a neighbouring house is identified as tabooing hens because she

	excessive crying			is a first born
2: Meanings related to children eating of Animals sources of food	<i>"You see, it is not good to give children these things... those who can afford and may give the children eggs frequently ...the child may develop a sickness... the meat too; you know the stomach of children are not strong. Even me who am an adult can eat fresh meat and develop severe abdominal problems"</i>	<i>"That is absolutely true.If they get used to them that could result in the child becoming useless...If you constantly say, E & P collect a lot of times. That is bad"</i>	<i>"You know some children can eat it and get use to the meat and one day if you do not have to give them, it becomes a problem...when the child does not get that to eat today and tomorrow, when they see someone's own the will be crying.it is bad behaviour and they can grow with it."</i>	<i>"How can that be food, meat does not satisfy hunger, it only the tastes good in the mouth but cannot serve the purpose of food. (Pause). You people and give children meat, see how the world is now spoil. children are going wayward"</i>
	<p>Giving children a bit of ASF appears okay. Frequent eating of ASF causes sickness in children.</p> <p>Children's stomachs are not mature enough to manage eggs, meat, and other animal products</p>	<p>Giving children meat is considered bad training of children.</p> <p>Children eating meat is interpreted as causing them to become ill-behaved</p>	<p>It is understood that when children eat meat and get used to it they crave it.</p> <p>They may request it inappropriately</p> <p>A child's request for meat is reported as being associated with bad behaviour even in adulthood.</p>	<p>Meat is not regarded as food because it does not reduce hunger.</p> <p>Meat is interpreted as one of the foods that make children misbehave and thus has a negative effect on the world in general</p>

<p>3: New-borns Pre breastfeeding fluids initial oral intake rituals</p>	<p><i>They will use bark of trees to make smoke fire place in the room The household head will tell you upon your delivery what initial fluids you should give to the child... They will then take big lugs of the guinea corn, 3 for males and 4 for females and put it in a specially made pot, add water, and heat and when it is brewed, they will use the water to force-feed the newborn (Laughing).</i></p>	<p><i>"Immediately the child is born, we have to soak guinea corn in water and give to the child, subsequently; they will give the child herbs. The child will take the herbs alongside breast milk. To the time when it is weaned. This is what they do when the child is born."</i></p>	<p><i>"Ok when they just receive the new born and take into the room, they will soak some herbs and drop some in the mouth of the child, when the do that, because the doctor people (health personnel) say we should not be giving water, they just leave it there. This is because the herbs are out ancestral thing and have to be done."</i></p>	<p><i>"You want me to discuss right from when he was born when? I gave birth to Ed at the hospital and I breast fed him with this breast. once he takes the milk, he has to take the water to quench his taste and I fed him like that till he was 6 months"</i></p>
	<p>Newborn feeding activities after delivery include use of brewed guinea corn to force feed a child.</p> <p>The type of fluid a newborn takes may be communicated by household head</p>	<p>Herbs and guinea corn brew are given to children right after birth</p> <p>Herb giving may continue till child is weaned</p>	<p>Herbs may be dropped in the mouth of the child as a symbol of the ritual.</p> <p>Breastfeeding may then continue.</p>	<p>Breast milk was initiated here, but water was given to quench thirst of the new born</p>
<p>4: Sexual abstinence and breastfeeding</p>	<p><i>"If a woman puts to birth and quickly start sexual relations... when the child continues to breastfed from the mother, the child will die... it(breast milk) is hot blood. The child takes it into their abdomen... the child must have diarrhoea."</i></p>	<p><i>"It is the women themselves. They wean the children to keep us at home... if you want to keep your child healthy, you do not have to be crossing the woman. like that the child does not have healthy breast milk "</i></p>	<p><i>" What it means is that if you have a baby and sleep with your husband, it is dirt."</i></p>	<p><i>I do not think about such things (keeping their husband home by allowing them to sleep with them). As for the men, no matter what you do if they want to bring in more women they will bring. I will not punish my child ...</i></p>

	<p>Believes that sexual relationships cause breast milk to become hot blood</p> <p>Believes children sucking contaminated breast milk could result in diarrhoea and death</p>	<p>Suggests that when men have sexual relations with women, it would make breast milk un healthy.</p> <p>Unhealthy breast milk results in unhealthy children</p>	<p>Women breast feeding become contaminated when they sleep with their husbands</p>	<p>This woman will not try to sleep with her husband.</p> <p>She does not worry about contaminating her breast milk.</p> <p>The strategy may not keep men at home.</p>

Appendix 14: Lone Worker Risk control measures and Escalation procedure

<p>Research Staff (Margaret W Kukeba) Risk of distress caused by patient/relative/ other due to information given at the time of recruitment</p>	<p>In the event of psychological distress of the researcher occurring during the data collection activity (e.g. verbal abuse from patient/relative/other) opportunities to debrief via telephone or e-mail with the research, supervisors will be made available. This will be initiated by the researcher.</p>
<p>Research staff Physical/verbal abuse from participants/ other</p>	<p>Prior to the data collection taking place, the researcher will be prepared for the experience via the Good Clinical Practice programme, and regular debriefs with supervisors.</p> <p>Detailed information on lone working is available on the SNMSW Research Intranet and this has been read by the researcher.</p> <p>The neighbourhood being visited is familiar to the researcher and has been assessed to determine the likelihood of personal attack by the regional health administrator.</p> <p>All data will be collected during daylight hours.</p> <p>Research staff will liaise with the regional health administrator prior to the data collection to determine whether there are any social or cultural tensions in the area.</p> <p>Visits will be made by appointment and for a fixed date and time.</p> <p>Before the visit, a check is made with the participants to determine the correct name and address is provided.</p> <p>Visit log is made with PI via shared calendar or similar so that whereabouts of Research Staff is known at all times.</p> <p>Estimated start and finish time, destination and route to be logged in a shared calendar or similar. The calendar will be shared with the researchers spouse (Eric Mwin) and a contact from the Regional Health Administration.</p> <p>Contact will also be available through mobile telephone. Contact will be made by the researcher when the researcher has reached their destination and returned home (every day for the duration of the data collection).</p> <p>In the event that contact has not been made by the researcher or if the contacts are concerned in any way about the researchers safety then contact will be made with the community leader via telephone, and if necessary a contact at the local police station.</p> <p>PI/appointed staff member is made aware of arrangements. In the event of physical harm occurring to the researcher during the data collection activity immediate telephone contact will be made with the researcher's spouse (Eric Mwin) the community leader and a contact from the Regional Health Administration. E mail contact will also be made at the first available opportunity with research supervisors</p>

Appendix 15: Ethical approval from the University of Manchester



Secretary to Research Ethics Committee 5

Faculty Office - Devonshire House

Tel: 0161 275 0288

Email: jared.ruff@manchester.ac.uk

Dr. Margaret Kukeba

School of Nursing, Midwifery and Social Work

17th September 2014

Dear Dr. Adeyemi

Research Ethics Committee 5 (Flagged Humanities) - Project Ref 14274

Kukeba: A qualitative study of the cultural feeding practices of children under five years of age in Rural Northern Ghana (ref 14274)

I am writing to thank you for submitting the requested changes and clarification to the original material which was reviewed by UREC 5 in your absence on 28th July 2014. This letter formally confirms approval for the above project and that no further changes are required to the documentation submitted to the committee.

This approval is effective for a period of five years and if the project continues beyond that period it must be submitted for review. It is the Committee's practice to warn investigators that they should not depart from the agreed protocol without seeking the approval of the Committee, as any significant deviation could invalidate the insurance arrangements and constitute research misconduct. We also ask that any information sheet should carry a University logo or other indication of where it came from, and that, in accordance with University policy, any data carrying personal identifiers must be encrypted when not held on a university computer or kept as a hard copy in a location which is accessible only to those involved with the research.

Finally, I would be grateful if you could complete and return the attached form at the end of the project.

I hope the research goes well.

Yours sincerely

A handwritten signature in black ink, appearing to read "J. A. Ruff".

Jared Ruff

Senior Research Manager

Faculty of Humanities and Secretary to UREC 5 (Flagged Humanities)

0161 275 0288 Jared.ruff@manchester.ac.uk

Appendix 16: Categories and number of participants

HOUSEHOLD	PSEUDONYM	Father	Mother	Marital Status	Grandmother	Grandfather	Diviners	Other Relative
1	Amisah	Azure	Azumah	Married	Akulpoka	Anaba		
2	Abaa		Samara	Married		Aduko	Diviner 1	
			Kapuuri	Married				
3	Anaba		Lari	Married	Asolmia		Diviner 2	
			Tuley	Married			trainee	
4	Aduko	Abila	Akele	Married	Amagem			
			Sofia	Unmarried	Aminatu			
			Amage	Unmarried	Abonu			
				unmarried	Memu			
5	Akongo	Nsorbilla	Fazy	Unmarried	Adaa			Auntie
			Dukopoma	Married				
6	Awuni		Atuamah	Married				
7	Ayeta		Asi	Married	Nabama			
8	Akule	Adongo	Teni	Married				
9	Asam		Algifa	Unmarried	Asaama			
10	Awumba	Aganah	Maria		Petua			
11	Nugeba	Anuga	Awinporka		Abaama			
			Abongobono					
12	Bakule		Abena					
13	Tampugre		Adoleba			Tampugre		
14	Yuureinga		Lamisi		Nsomah			
			Pugkuti	Married/polygamy				
			Pugbilla	Married/polygamy				
15	Sore	Sore	Ama	married	Yinpok			
		8	24		13	3	3	1