PREGNANT WOMEN IN PRISON: MENTAL HEALTH, ADMISSION TO PRISON MOTHER AND BABY UNITS AND INITIAL OUTCOMES FOR MOTHER AND CHILD

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RACHEL DOLAN

SCHOOL OF HEALTH SCIENCES
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69,794 words
Abstract

Background

Little is known about the mental health of pregnant women in prison in England or the factors which impact admissions to prison mother and baby units (MBUs). Research suggests women with more ‘stable’ backgrounds and lower prevalence of mental disorder are more likely to be admitted to prison MBUs, and that women in MBUs have a lower prevalence of mental disorder, but the reasons for this are unclear.

Aims

To describe the socio-demographic background of pregnant women in prison; to establish the prevalence of mental disorder in pregnant women in prison; to identify the factors which influence MBU applications and admissions for pregnant women in prison; to measure the impact of MBU residence and separation on initial outcomes for mother and child and to explore the experiences of pregnancy, childbirth and motherhood and separation whilst imprisoned.

Methods

A mixed methods design was used. Eighty-five pregnant women completed quantitative interviews at baseline, and 55 at follow-up in nine different prisons. Data was collected on mental health, drug misuse, hazardous drinking, personality disorder, quality of life and mother-child bonding. Qualitative data were collected via 31 interviews with pregnant women, and 24 postnatal interviews. Framework Analysis was used to explore, summarise and report the data.

Results

Fifty-one percent of participants had depression and 57% had anxiety. Sixty-three percent were admitted to MBUs. Those who were working prior to imprisonment were more likely to be admitted, and those with prior Children’s Services involvement, diagnosis of personality disorder or history of suicidality were less likely to be admitted. Perinatal depression was greater at baseline than follow-up, and lower for women admitted to MBUs. Quality of life was higher at follow-up than at baseline, except for the social quality of life for participants not admitted to MBUs, suggesting poorer perceived social support.

Conclusions

The high levels of depression and anxiety may have negative impacts on both the mother and child. Pregnant women with more complex backgrounds are less likely to be given a place in a prison MBU, and MBU placement may contribute to a reduction in perinatal depression. Women not admitted to MBUs may experience reduced social support. Participants were depressed, stressed and worried, mostly about what would happen to their unborn child, basic needs were unmet, and emotional support varied. Lack of information compounded feelings of stress.

Keywords: pregnancy, mental health, prison, mother and baby units, motherhood, experience
Declaration

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

To my son Ciarán.
The Author

Rachel Dolan was previously a Research Fellow at the University of Southampton and NHS South Central, working on research into the mental health needs and parenting issues of imprisoned mothers of young children. She also carried out research into the longer-term outcomes for women and children who spent time in prison mother and baby units, and women who were separated from their babies whilst in prison (2007-2013). She was commissioned by the National Offender Management Service to carry out a systematic review of indeterminate sentences for public protection (2008) and a needs analysis of offending behaviour programmes (HMP Isle of Wight, 2009). She was awarded a Winston Churchill Travelling Fellowship in 2016, to visit other countries to look at alternative approaches to the imprisonment of mothers and separation from children, visiting projects and prisons in Denmark, Germany, the Netherlands and the US, to explore different approaches and their impact.
1. Introduction

Women in prison have higher rates of mental disorder than women in the general population. Vulnerability to depression is exacerbated in pregnancy. This suggests that pregnant women/new mothers in prison are likely to have much higher rates of perinatal depression than the general population, which may be confounded by the prospect of early separation from their new-born baby. In order to avoid the negative impact that early mother-child separation has, six English prisons have dedicated Mother-and-Baby Units (MBUs). Prison MBUs allow some mothers and babies to remain together during the mothers’ imprisonment for a maximum of 18-months. Research suggests that the existence of a mental disorder may impact on the decision to apply/be offered a place in a prison MBU, yet little is known about the mental health of pregnant women in prison including; (1) the factors that affect their decision to apply for, or be offered a place; (2) the impact of such placement upon maternal health and wellbeing; and (3) outcomes for mother and child. This thesis examines the reasons why women do/do not apply for an MBU place when pregnant in prison and the reasons behind the prison’s decision to offer a place (or not), including the woman’s mental health. It also examines the initial outcomes for mother and child, such as mother-infant bonding and the prevalence of perinatal depression, and the experience of pregnancy, childbirth, motherhood and separation in prison.

The thesis is presented in ‘alternative format’, and therefore incorporates sections that are appropriate for publication. Chapter 2 provides background on women in prison generally, and mothers in prison specifically, reviews the relevant literature
on perinatal women in prison and mental health in this group, the MBU application and admission process, factors which may influence this process, and the impacts of prison MBUs (and prison nurseries) on mothers and on children.

Chapter 3 is a systematic review of the literature on the mental health and experiences of pregnant women in prison and the impacts on mental health and experiences of prison MBU/nursery admission and separation from babies. It is presented in the following format:


Chapter 4 presents the aims, objectives and research questions of the study

Chapter 5 presents the rationale for the mixed methods design of the study, and outlines the quantitative and qualitative methods.

Chapter 6 presents the quantitative results in the following format:

Dolan, R., Hann, M., Edge, D. & Shaw, J. (submitted). Admissions to prison mother and baby units in England and the factors that influence placements


Additional results

Chapter 7 presents the qualitative results in the following format:

Chapter 8 presents a discussion of the findings, strengths and limitations of the study, and the clinical and practical implications and implications for future research.
2. Literature review

‘The imprisonment of parents, particularly of mothers of dependent young children, is deeply problematic, because the child is being punished along with the parent. While it is argued that the punishment of offenders always has repercussions on innocent relatives, where young children are concerned the effects can be particularly catastrophic to the children and costly to the State ....’

(UNICEF, 2002, pp.124)

This chapter outlines the demographic characteristics of the female prison population, including the prevalence of mental disorder, self-harm and substance misuse. There is then a review of the literature on pregnancy and motherhood in prison and a summary of the risk factors for and impact of perinatal mental disorder, including in prison. The wider impacts of pregnancy in prison and parental imprisonment are then evaluated, as well as the consequences of separation from children. The outcomes for children of prisoners are discussed including the impacts of prison mother and baby units (MBUs) and prison nurseries. Finally, the existing research and policy background on the use of MBUs is outlined.

2.1 Women in prison

2.1.1 Female prison population

As of the week ending April 20th 2018, there were 83,620 adults in prison in England and Wales. Of these 3,870 (4.6%) were female, a figure that has remained relatively stable over the last fifteen years. There are currently 12 women’s prisons in England and none in Wales, so Welsh women are housed within the English prison estate.
Because of the small number of female prisoners and prisons, compared to male prisoners and prisons, women are more likely to be held further from home, which may have a variety of negative impacts (Prison Reform Trust, 2010). In addition, sentences tend to be relatively short, and in the year ending March 2017 62% of women were sentenced to six months or less in prison (House of Commons Library, 2017). Just over half (51%) of women released from prison are reconvicted within 12 months and for those serving sentences of 12 months or less, this rises to 62% (Ministry of Justice, 2011a). For those with 10 or more previous convictions this is even higher at 88% (Ibid). In the year ending September 2012, 17% of the female prison population were being held on remand (Ministry of Justice, 2012a). In England, the average length of sentence for women in prison is just 42 days, which whilst relatively short may often lead to them losing their homes, and possible contact with and custody of their children (Penal Reform International, 2008).

Seventy-five per cent of crime committed by women is reported to be non-violent or ‘minor’, and just over a third of women (36%) are reported to be imprisoned for drug-related offences (Ministry of Justice, 2017). There have been repeated calls nationally (Corston, 2007) for the use of alternatives to custody, and smaller geographically dispersed women’s centres for women involved in the Criminal Justice System, in place of prison. The United Nations (UN) Rules for the Treatment of Women Prisoners and Non-custodial Measures for Women Offenders (2010) recommend the use of alternative approaches to custody wherever possible, taking into consideration women’s prior victimisation and their caring responsibilities, avoiding separation from family where possible, and that courts take into account mitigating factors, including the relatively non-severe nature of female offending.
and caring responsibilities. These calls for alternatives appear to have had little impact, as rates and types of female offending and imprisonment have remained stable over the last 15 years.

Corston (2007) and the UN (2010) highlight the importance of maintaining and re-establishing family ties for female offenders. The value to the rehabilitation of offenders, of maintaining family ties and its impact on reducing recidivism is well established (e.g. Jamieson, McIvor & Murray, 1999; Bales & Mears, 2008; Berg & Hueber, 2011). Because of the small number of female establishments (12 at the time of writing), women are likely to be held further from home than men. The average distance from home that women are imprisoned is reported to be approximately 60 miles (Women in Prison, 2013), and many women (753 women in 2009) are in prisons more than 100 miles from home (Hansard, 2009).

Statistics on the female prison population present a bleak picture, in terms of their childhood experiences and current and past physical and mental health. Many women in prison have endured a number of difficult experiences long before they arrive in prison. Thirty-one per cent of women in prison were taken into Children’s Services care as children (compared with 2% in the general population), 53% experienced physical, emotional or sexual abuse as children, and 50% witnessed violence in their home (Ministry of Justice, 2012b). Thirty-two per cent had been excluded from school and 47% of all prisoners have no qualifications (Ministry of Justice, 2012c). In the four weeks prior to custody 81% of female prisoners reported that they were unemployed and 15% of all prisoners (male and female) reported being homeless prior to custody (Ministry of Justice, 2012d). There are limitations to
this study, because of the self-report measures used and the possibly higher risk of bias, as the research was commissioned by the Ministry of Justice. Women may have been less likely to share personal information than they would be in an independently commissioned study, perhaps leading to figures that could be an underestimation. In terms of overall health, the physical, psychological and social health of women in prison is poorer than that of those women in the community with the poorest health (Plugge, Douglas & Fitzpatrick, 2006).

2.1.2 Mental health, self-harm and substance misuse

Prevalence of mental disorder is much greater in the prison population than the general population and is particularly high for women in prison. An ONS survey of mental health in prisoners reported 50% of sentenced female prisoners had a personality disorder, 14% of all female prisoners (sentenced and remanded) had a psychotic disorder, and 63% of sentenced female prisoners were reported to have some form of neurotic disorder (Singleton, Meltzer & Gatward, 1998). Such high prevalence has been consistently reported over time. Stewart (2008) reports similar rates of personality disorders female prisoners (57%). Women in custody have five times the risk of mental disorder than the general female population (78% compared to 15%; Plugge et al., 2006), and over half the female prison population (51%) have serious mental illness (SMI) including; almost half (47-49%) suffer major depressive disorder) 6% psychotic disorder and 3% schizophrenia (Offender Health Research Network, 2009; Ministry of Justice, 2012e).

Wedderburn’s (2000) report on women in prison reported that 20% of women had been admitted as a psychiatric inpatient in the 12 months prior to imprisonment,
and that 40% had received help or treatment for a mental health or emotional problem in the 12 months prior to imprisonment.

Whilst each of these cross-sectional studies only provides a snapshot of a moment in time, other studies have found similarly high levels of mental disorder across time and internationally. Fazel and Danesh (2002), in a meta-analysis of research from 12 different countries, report much higher prevalence of psychosis, major depression and personality disorder in prisoners than in the general population, and these findings have been reported consistently in a number of countries over the last forty years (Fazel & Seewald, 2012). Much higher prevalence of mental disorder has been repeatedly reported despite recognised deficiencies in mental health screening in prison (Birmingham, 2003), suggesting that much mental disorder remains undiagnosed, and therefore untreated.

For those who arrive in prison with pre-existing mental health problems, these can be further exacerbated by imprisonment. High levels of mental distress (as measured by the GHQ-12) were reported in a sample of male and female prisoners in England during the first week in custody (Hassan, Birmingham, Harty, Jarrett, Jones, King, et al., 2011), and whilst there was a significant reduction in symptoms in male prisoners over time, the same was not found for female prisoners. The reasons for this are unclear, but for many, separation from dependent children may have contributed to this. Early custody has previously been highlighted as a time of increased risk (e.g. Liebling, Tait, Durie, Stiles & Harvey, 2005), and approximately one third of prison suicides happen within this period (Shaw, Baker, Hunt, Moloney & Appleby, 2004). For those who are mothers, concerns about the care and safety of their children
outside may further impact and exacerbate mental health problems (Revolving Doors, 2002).

A further indicator of the mental health of prisoners is the high rate of suicide and self-harm in prison inmates. Between 1990 and 2011, 95 female prisoners died by suicide (Inquest, 2013). Over a third of women in prison (37%) reported that they had attempted suicide at some point in their life, and this rises to 44% for those on remand (Corston, 2007). The risk of suicide in recently released women is reported to be 36 times higher than in the general population (Pratt, Piper, Appleby, Webb, & Shaw, 2006). The highest risk for suicide of women in prison is amongst those who are young, poor and from Black Minority Ethnic (BME) backgrounds (Edge, 2006). Fifteen per cent of completed suicides in prison are women, and they account for more than half of attempted suicides, despite the fact that women represent less than 5% of the prison population (Fawcett Society, 2003). Of the 23,435 incidents of self-harm reported in prison for the 12 months up to June 2012, 31% were carried out by women (Ministry of Justice, 2012d). The higher rates for women may reflect in part the prolific self-harm by the same women. Whilst 43% of female prisoners and 60% of men were reported to have self-harmed once, 6% of women and 1% of men had done so 20 or more times in 2011 (Ministry of Justice, 2012d).

A high proportion of prisoners in England and Wales have drug and/or alcohol dependence issues prior to and upon entering prison. Reports vary on the actual proportion of women using drugs, which is probably a result of the differing methodologies utilised (e.g. self-report, medical records), however the reported figures are consistently high. The ONS study (Singleton et al., 1997) reported rates of
hazardous drinking of 39% and drug abuse/dependence of 41%, in the 12 months prior to imprisonment, in sentenced women prisoners. More recent research supports these findings. The Ministry of Justice (2009) reported that 75% of female prisoners had used illegal drugs in the 12 months prior to imprisonment and that 40% were drinking in excess of recommended limits. Twenty-nine per cent of women report having an alcohol problem on entering prison (HM Chief Inspectorate of Prisons, 2011). Other reports suggest over half of female prisoners (52%) have used heroin, crack or cocaine in the four-week period prior to custody (Plugge et al., 2006). Despite the high levels of reported drug and alcohol misuse, this may be underreported because of methodological limitations of the research, unwillingness to share information, concerns about losing custody of children, or because such problems may be unrecognised or underestimated by the individuals themselves (Stewart, 2008; HM Chief Inspectorate of Prisons, 2011).

2.2 Pregnancy and motherhood in prison

In 2010, 17,240 children were separated from their mother because of her imprisonment (Wilks-Wiffen, 2011). Two thirds of women in prison (66%) are reported to be mothers of children under 18 years; nearly one third of these have children under the age of 5 and 8% younger than 18-months (Caddle & Crisp, 1997). For 85% of these women, imprisonment may be the first time they had been separated from their children, and in some cases this temporary imprisonment may lead to permanent separation of mothers and children (Home Office, 1997). It is estimated that 200,000 children in England and Wales experience the imprisonment of a parent every year (Ministry of Justice, 2012b). For children of mothers who are
sent to prison, only 5% will remain in their own homes (Home Office, 2000), this means that 95% of these children will not only experience separation from their mother but further upheaval when they are also moved to a new ‘home’ or in some cases ‘homes’. HM Chief Inspectorate of Prisons (1997) reported that 25% of dependent children of imprisoned mothers were being cared for by their grandparents, 29% by another family member or friend and 12% were in Children’s Services foster care or had been adopted. A Home Office study reported that of dependent children whose mothers were in prison, 48% were with grandparents, 17% with the current husband or father and 12% with an ex-husband or partner (Hamlyn & Lewis, 2000), but this study did not report the percentage that were in Children’s Services care or had been adopted. In a 2006 study at HMP Styal, 40 women were interviewed over a period of six months. Seventy per cent of the children of the women interviewed had been removed from the care of their mothers and were in Children’s Services care, and the remaining children were being cared for by other family members (Hamilton & Fitzpatrick, 2006). These studies give some idea of the placement of children when their mothers go to prison, but do not include a breakdown of the placement of children according to age, length of separation, nor of the impacts of separation, or the outcomes for these children and mothers. They are also limited in terms of how long ago the information was collected, the cross-sectional methodology or the geographical limitations of the study.
2.2.1 Pregnant women and childbirth in prison

There is limited information available on pregnant women in prison in England. Personal communication with the National Offender Management Service (NOMS) and the Ministry of Justice suggests that figures are neither collected nor collated for the number of children born to imprisoned mothers, or the number of women who are pregnant on arrival in prison (C. Robinson, personal communication, May 22, 2014; E. Stradling, personal communication, February 22, 2014). Pregnancy is only recorded in individual inmate medical records when the inmate consents to pregnancy testing. Therefore, no reliable statistics on pregnancy and childbirth in prison currently exist, despite the many risks and difficulties faced by these women and babies.

There are however some estimates of the number of pregnant women and children born to imprisoned women each year. It was reported in 2003 that 620 women received antenatal care in prison with 169 giving birth during imprisonment (Price, 2005). A Hansard written answer (2005) reported that in 2004, 114 women gave birth whilst imprisoned. However other figures suggest the rate may be higher or may vary significantly from one year to the next. Between April 2005 and July 2008, a total of 283 children were reported to have been born to women in prison, an average of 1.7 babies each week, and between April and July of 2008 49 women in prison gave birth (almost four a week) (Prison Reform Trust, 2010). More robust collection and collation of statistics would be useful for both prison staff and policy makers in order to inform the provision of services and support these women needs. In relation to policy guidance on pregnancy in prison, there is specific, gender aware
guidance for women in prison (PSO 4800/2008), but no recent update on this, and
there is no specific guidance for the care and management of pregnant women and
new mothers in prison. There is guidance on MBU applications and admission
procedures (PSI 49/2014 – PI 63/2014). The Birth Charter (Birth Companions, 2016),
also outlines some guidance on this, but it is not an official Prison Service guideline,
nor one that has been universally adopted.

2.2.2 Background to prison mother and baby units (MBUs)

In 1997 approximately 8% of women in prison had children younger than 18-months
(Caddle & Crisp, 1997). If this percentage has remained stable, (and we do not know
this as there are no more recent data available), and 8% of mothers who admitted
to prison in 2017 had a child under the age of 18-months, this would mean
approximately 800 of those women would have had a child in this age group, and
would have been eligible for MBU placement with their mothers. Many of them
would have been separated for a period of time.

The current option for pregnant women in prison, or women with young babies is to
apply for a place in a prison MBU or to place their baby into alternative care outside
prison. Many other countries also allow mothers and their children to stay together
in prison in specific circumstances and for a limited time period. This can vary from
just a few days, to six years in countries such as Germany, India, Mexico and Turkey.
In Italy, the imprisonment of pregnant women is not allowed, and in South Africa,
for those with caring responsibilities, the best interests of children must be taken
into account when sentencing (Robertson, 2008). In the United States women can
apply for prison nurseries, similar to English MBUs, where their children can live with them up to the age of 12 months (Robertson, 2008).

The current maximum age limit for babies is 18-months, and babies older than this cannot be admitted to any prison MBU, nor can they stay beyond this age. The current age limit regulation appears to be justified by two studies (PSI 49/2014 – PI 63/2014). The first is research carried out on the development of children living in Spanish prisons with their mothers (where the age limit is 36 months; Jimenez & Palacios, 2003). This study assessed 121 mothers and 127 children living together in prison, and the quality of the environment (educational and family) of the children. Developmentally, the children’s scores were similar to the infant population generally, and environment scores were similar to other at-risk populations (Jimenez & Palacios, 2003). Whilst there were drops in the post-18-months age group in terms of development, this was only for those children who also had the lowest scores for environment, and not for the majority of children (Ibid). This suggests that it is not prison itself that leads to these drops, but the poorer environment some were exposed to in some prisons (including interaction with the mother and provision of materials for playing and exploring). The main factor associated with developmental scores was not age or environment, but the mothers level of education, followed by ethnic group and then type of prison, suggesting factors other than the prison mother and child unit had greater impact on the children’s development. In addition, it cannot be assumed that the same result would be found in England, where MBUs are different to the units in Spain. These findings are not sufficient justification for the 18-month age limit in English MBUs, but rather suggest a need to provide an appropriate and stimulating environment, depending on the age and needs of the
child. This limits negative impacts on child development and promotes mother-child attachment.

The second study cited as rationale for the current 18-month age limit was carried out over 30 years ago (PSI 49/2014 – PI 63/2014). Attachment at the age of one was assessed in 113 children in the community, and psychopathology in the same children at the age of six was measured (Lewis, Feiring, McGuffog & Jaskir, 1984). It is not clear how this relates to the 18-month age limit, other than the importance of early mother-child attachment between as a protective factor against later socio-emotional problems in children (Ibid). There is no reference to age limits for separation from mothers in the community or in prison, and indeed all the other research suggests that any separation up to the age of four or even later is detrimental to a child’s development (Ainsworth, 1982; Bowlby, 1969). Whilst a prison cannot be argued to be the optimum environment for any child, in the important early years, where mother-child attachment is so important to a child’s development any age limits should be based on empirical evidence. This should be from current research carried out in UK prisons, and in the absence of such evidence should be based on the existing evidence on attachment and the individual child’s best interests.

There are a number of considerations which have led to the development and use of prison MBUs and nurseries, both in the England and other countries including the evidence on the importance of early mother and baby attachment on children’s developmental outcomes (e.g. Ainsworth, 1990; Bowlby, 1969). The European Convention on Human Rights (1950), Article 8 ‘Right to respect for private and
family life’ was also a consideration, and that there should be no interference in this by a public authority as far as possible. The United Nations Convention of the Rights of the Child (UNCRC) is also part of the rationale for prison MBUs, and the assertion that “....the best interests of the child shall be the primary consideration”.

UNICEF (2007) states that young infants should not be separated from their mothers because of imprisonment, as this is not in the best interests of the child and interferes with the child’s right to a family life. However, it is also noted that whilst there is a need for alternatives to a mother’s imprisonment, when such alternatives are not available, children should be accommodated with their mothers ‘wherever possible’ (UNICEF, 2007). In England, the current situation is that a woman who is sent to prison and has a child under 18-months has only two options; to apply for a place with her child in a mother and baby unit (MBU), or to have her child placed in alternative care outside prison.

Because of the balance that needs to be achieved between the best interests and rights of the child, and the requirements of the criminal justice system MBUs have emerged as the current ‘best option’ in England and Wales. Despite the fact that they exist first and foremost for the wellbeing of the babies, who have committed no offence and are therefore not prisoners (HM Prison Service, 2011), there is limited evidence on the impact on children’s development and wellbeing and outcomes for the mothers. There is therefore a real need for empirical research in this area. This will allow documentation of the initial outcomes and experiences of women and children in MBUs, as well as the identification of areas of improvement in the application process and the provision of care for this group. The studies that have
been conducted on outcomes will be described in section ‘Women in prison and perinatal mental health and ‘Impacts of pregnancy in prison.

2.2.3 Prison MBU application and admission process

MBUs are located in six different prisons and there are usually places for 65 women and 69 children. However, one prison MBU has been temporarily closed since 2016 due to flood damage, reducing the current provision of places to 54 mothers and 57 babies. In order to be given a place, women need to meet certain criteria (see Box 1) and applications must be approved by the prison and Children’s Services before a place is offered. Length of sentence, type of crime and previous childcare history are some of the issues that are taken into consideration. Considering that even conservative estimates suggest there are over 100 babies born to women in prison each year, and many more women may have children under the age of 18-months (up to 800 women may have children in this age group), this means only a small proportion of these women will be granted a place. This suggests that many of those who could benefit will either not apply or will not be granted a place. Figures for applications and admissions suggest that less than half of those who make an initial MBU application will be admitted to MBUs (Table 1).

Despite the limited number of prison MBU places, they are rarely full (Albertson O’Keeffe, Lessing-Turner, Burke & Renfrew, 2012). The most recent figures available for average MBU occupancy state that the average number of women in prison mother and baby units between June 2010 and May 2012 was 49 (Hansard, 2012). End of year figures from 2011 to 2016 suggest a reduction in occupancy rates each year, with 54 MBU residents at the end of 2011 and just 36 at the end of 2016.
(Ministry of Justice, 2016; Table 1). During that same period, there were between 54 and 75 places available for mothers, and 57 - 79 for babies, meaning that they were often only around two thirds full, despite significantly more applications than admissions. From the most recent figures available (2015-2016), only 63% of MBU applications considered by the admissions board were successful, and 69 women were accepted to MBUs (Ministry of Justice, 2016; Table 1). Whist the number of applications has fallen since 2011, the reasons for this are unclear (as are the reasons many applications are never considered) but may in part be due to changes in sentencing policy, although there is no empirical evidence to support this. The percentage of successful applications has also fallen from 84% in 2011 to 63% in 2016, but the reasons for this are unclear.

Table 1. MBU applications and admissions 2010-2016 (Adapted from Ministry of Justice, 2016)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Number of applications received</td>
<td>256</td>
<td>254</td>
<td>215</td>
<td>210</td>
<td>197</td>
<td>144</td>
</tr>
<tr>
<td>Total Number considered by board</td>
<td>165 (65%)</td>
<td>155 (61%)</td>
<td>147 (68%)</td>
<td>108 (51%)</td>
<td>106 (53%)</td>
<td>110 (76%)</td>
</tr>
<tr>
<td>Number of applications approved by board</td>
<td>139 (84%)</td>
<td>121 (78%)</td>
<td>114 (78%)</td>
<td>80 (74%)</td>
<td>74 (70%)</td>
<td>69 (63%)</td>
</tr>
<tr>
<td>Number of applications refused by board</td>
<td>26</td>
<td>34</td>
<td>33</td>
<td>28</td>
<td>32</td>
<td>41</td>
</tr>
<tr>
<td>Number of women admitted to MBU</td>
<td>132</td>
<td>113</td>
<td>112</td>
<td>83</td>
<td>73</td>
<td>64</td>
</tr>
<tr>
<td>Number of babies admitted to MBU</td>
<td>113</td>
<td>90</td>
<td>96</td>
<td>66</td>
<td>64</td>
<td>57</td>
</tr>
</tbody>
</table>
Despite the high number of applications and evidence that MBUs can be beneficial for both mothers and children (Corston, 2007; Dolan, Birmingham, Mullee & Gregoire, 2013; Edge, 2006; Gregoire, Dolan, Birmingham, Mullee & Coulson, 2010), and that more women apply than are accepted, the MBU at HMP Holloway closed in 2013. It was closed due to ‘underoccupancy’, yet the evidence suggests that women who apply are turned down, and that others are not informed of the possibility (8%) or are discouraged from applying (Dolan et al., 2013; Gregoire et al., 2010). The reasons for the empty MBU places may be related to the criteria that need to be met for MBU admission, lack of information available in prisons, or mental health issues that prevent otherwise eligible women from applying (Birmingham, Coulson, Mullee, Kamar & Gregoire, 2006; Gregoire et al., 2010). However, this has not been empirically researched and there may also be other factors that contribute to this ‘under-occupancy’.

Pregnant women and women with babies under the 18-month age limit should receive a prisoners’ information booklet “All About MBUs” written by NOMS (now HMPPS) Women’s Team on reception to prison, which contains an application form, and should be referred to the MBU liaison officer (or deputy) who will advise on the most appropriate MBU (PSI 49/2014 – PI 63/2014). However, some women may choose not to reveal their pregnancy, or not consent to a pregnancy test. The criteria for admittance can be seen in Box 1 below.
Box 1. MBU Admission Criteria (PSI 49/2014 – PI 63/2014)

The best interest of the child is the primary consideration (alongside the safety and welfare of other mothers and babies in the unit) therefore the Board must be satisfied that the following criteria are met before admission is granted:

- There are no concerns about mother’s conduct and behaviours which may place her own and other mothers and children on the unit at risk
- The applicant has provided a urine sample for a Mandatory Drugs Test (MDT) which tests negative for illicit substances
- The applicant is willing to refrain from substance misuse.
- The applicant is prepared to sign a standard compact, which may be tailored to her identified individual needs.
- The applicant’s ability and eligibility to care for her child is not impaired by poor health or for legal reasons such as the child being in care or subject to a Child Protection Plan as a result of the applicant’s treatment of that child.

(PSI 49/2014 – PI 63/2014 p.8)

Once an application has been submitted a dossier is then compiled by the MBU officer, which should include as a minimum, local authority Children’s Services report, adult social service report (where appropriate), security report (outlining
previous convictions, type of conviction, sentence length, and other related information), relevant medical reports, personal officer report and a report from their community offender manager. Information also needs to be presented on alternative caregivers in the event of an unsuccessful application (Ibid). The requirements of Children’s Services role and report are outlined below (Box 2).

**Box 2. Children’s Services reports guidance (PSI 49/2014 – PI 63/2014)**

“To obtain a Children’s Services report, a referral for assessment must be made to the Local Authority where the mother is ordinarily resident, making a clear distinction as to whether the referral is for a Pre-Birth Assessment or as a child in need. The former assesses the mother only. Within one working day of a referral being received, a local authority social worker should make a decision about the type of response that is required and acknowledge receipt to the referrer. Assessments must consider: previous social care input; mother’s personal history and contact as a child and adult with social care and mother’s relationships e.g. domestic violence and suitable other carers for the child. The maximum timeframe for the assessment to conclude, such that it is possible to reach a decision on next steps, should be no longer than 45 working days from the point of referral. If, in discussion with a child and their family and other professionals, an assessment exceeds 45 working days the social worker should record the reasons for exceeding the time limit. However, upon acknowledgement that the referral has been received and the type of assessment required decided upon the referrer
should reiterate the specific circumstances of the case and the urgency to conclude matters if there is a child in the community separated from its mother.

A Children’s Services report is required in all circumstances and any decision regarding admission should not be made until one is received. If a child is unknown to Children’s Services a report must be obtained which stipulates what enquiries Children’s Services have made. Where Children’s Services are still unable to make a recommendation regarding the offering of a place on an MBU, a report must be obtained which provides that they are not aware of any concerns which would prevent a place on a MBU being offered.”

(PSI 49/2014 – PI 63/2014 p. 7)

The role of Children’s Services in the decision-making process is very often the deciding factor, and the reason for any delays, and this is likely because the guidance in PSI 49/2014 – PI 63/2014 clearly states that “A Children’s Services report is required in all circumstances and any decision regarding admission should not be made until one is received”. The assigned social worker may never have met the mother-to-be previously, and may only meet her once (or not at all) prior to making a recommendation. Children’s Services decide the type of assessment to be carried out, either pre-birth or child in need, and consider a number of factors, which will influence their final recommendation. These include a mother’s personal history (including involvement in the criminal justice system), contact as a child and adult with social care (many women in prison were previously in Children’s Services care or were known to Children’s Services) and mother’s relationships e.g. domestic
violence (many women in prison are victims of domestic violence). None of these factors alone, or even in combination, would be grounds for removal of a child in the community, but would be grounds for further assessment, support and intervention, but not removal of a child. In the case of MBU applications, these may be grounds not to support a woman’s application, meaning she cannot be admitted to the MBU, and her child will be removed shortly after birth. In the community, Children’s Services can only remove a child if:

- A court has made a care order or an emergency protection order, giving Children’s Services the right to remove a child
- The situation is so serious that Children’s Services ask the police to remove a child without a court order (they can do this for a maximum of 72 hours)

In practice, because women in prison will not be given an MBU place without the support of Children’s Services, the threshold for removal in the community does not need to be met, and a child can be removed without a court order or the need for police intervention, a clear inequality in terms of the application of the threshold for removal.

Once all reports have been received the application will then be considered by the MBU Admission Board. Specific individuals are required to attend the Admissions Board, including the applicant. The required attendees for an admissions board (in addition to the applicant), must be multi-disciplinary, and are outlined in Box 3.
Box 3. Required attendees for MBU Admissions Board

- Independent Chair
- Manager with Line Management responsibility for MBU
- MBU Manager
- Community Offender Manager or The Community Offender Supervisor

In addition, the applicant may also be accompanied by their personal officer, or ‘another appropriate person’, for support, although it is not clear who might meet the requirements. The applicant should be advised of this a minimum of 48 hours prior to the board being held, and all those attending the Admissions Board, including the applicant, should receive the relevant reports and paperwork at least 48 hours prior to the board. There is no additional guidance on preparation for the board for applicants, or the sharing of information on what will happen in the board.

If the criteria for MBU admission are met, and the board agrees, a recommendation is made to the prison governor/director, and then a mother and baby will be offered a place or not on the basis of this recommendation.

In cases where a place is not offered or not accepted the baby will have to live with the father, another family member, or if this is not possible will be placed in Children’s Services care. However, a woman has a right to appeal any negative decision by contacting the Head of the Women’s Team directly. If a mother is in prison past the 18-month age limit of the MBU then the child will normally leave the prison before the mother. Although there is some flexibility on this limit, any
extension would require the approval of the Head of the Women’s Team (PSI 49/2014 – PI 63/2014). The only guidance on separation appears to relate to the separation of mothers and babies after they have been admitted to an MBU (in cases where they age limit is exceeded or behavioural or child care issues), where it suggests the process requires effective planning and sensitive management (PSI 49/2014 – PI 63/2014). There appears to be no specific guidance for the management of women who give birth in custody, and will be separated from their babies, and how they will be supported post-separation.

Practice across prisons varies in terms of provision of information and admissions procedures, and prison service policy is not always followed (Children’s Commissioner for England, 2008). The differences in practice have been linked to limited resources and the low priority given to MBUs within the prison service, for example, whilst there is a PSI for MBU applications and admissions (PSI 49/2014-PI 63/2014), there is no PSI or other national guidance for the treatment and management of mothers residing in prison MBUs. Further evidence of the low priority given to prison MBUs is the ongoing closure of the MBU at HMP Eastwood park, which was closed due to flooding in the summer of 2017, and has still not reopened, despite being the only prison MBU in the South West of England, and also housing women from South Wales. Despite work with mothers and babies being a specialised area, staff with little or no experience are placed in the role of MBU manager, and changed frequently in some prisons. For example, during the period of data collection in one particular prison (18 months), the MBU manager changed three times. From informal conversations with staff and women in prison, it was also clear that some women are encouraged ‘not to bother’ applying for a place, as ‘they
would not get one anyway’, despite the benefits they might offer to new mothers, and the potential for change (Corston, 2007; Edge, 2006; Gregoire, 2010). In addition, there is inadequate information provided to admissions boards (Ibid). For example, prisons without MBUs may not have MBU liaison officers and therefore may not receive adequate information whereas those women in prisons with MBUs tend to receive good information. In terms of the provision of information to admissions boards, this can often be poor and inadequate leading to inconsistencies in practice.

Such inconsistencies are unsurprising in light of the different approaches taken to the management and running of MBUs (Table 2). Two of the MBUs are in privately run prisons and are managed and run by Sodexo prison officers. One is managed and run entirely by HMP prison staff. Overall management of the MBU at HMP Askham Grange is the remit of the MBU manager who is a prison officer, but the day to day running of the unit is provided entirely by staff from Barnardos (children’s charity), and uniformed officers very rarely visit the unit. Applications for the unit are managed by HMP staff. HMP New Hall is managed by prison staff, but Action for Children (children’s charity) are responsible for the day to day running of the unit. However, there are also uniformed prison staff based on the MBU at New Hall and they are responsible for the MBU application process. At HMP Styal, the MBU manager was a member of Action for Children staff, and is now employed by Family Action (the provider changed in 2018 to a different charity, Family Action). Action for Children were, and Family Action are entirely responsible for the management and day to day running of the MBU, and for MBU applications. All staff in prisons without MBUs are HM Prison officers.
### Table 2. Prisons with MBUs and MBU management

<table>
<thead>
<tr>
<th>HM Prison</th>
<th>MBU</th>
<th>MBU managed by</th>
<th>Day to day running of unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aksham Grange</td>
<td>10 women (11 babies)</td>
<td>HMP Prison staff</td>
<td>Barnardos</td>
</tr>
<tr>
<td>Bronzefield</td>
<td>12 women (13 babies)</td>
<td>Sodexho prison staff</td>
<td>Sodexho prison officers</td>
</tr>
<tr>
<td>Eastwood Park*</td>
<td>12 women (13 babies)</td>
<td>HMP prison staff</td>
<td>HMP prison officers</td>
</tr>
<tr>
<td>New Hall</td>
<td>9 women (10 babies)</td>
<td>HMP Prison staff</td>
<td>Action for Children**</td>
</tr>
<tr>
<td>Peterborough</td>
<td>12 women (13 babies)</td>
<td>Sodexho prison staff</td>
<td>Sodexho prison officers</td>
</tr>
<tr>
<td>Styal</td>
<td>9 women (10 babies)</td>
<td>Action for Children**</td>
<td>Action for Children**</td>
</tr>
</tbody>
</table>

* MBU temporarily closed  
** Provider changed in 2018

These different approaches to the management and running of MBUs mean that women receive varying levels of support and information during the application procedure and during their residence in MBUs, if they are granted a place. Both HMP Styal and HMP New Hall MBUs offer a range of parenting and other support for women in MBUs and prior to admission, as does the MBU at Askham Grange, although this is slightly different, as women are normally transferred there after spending time in other MBUs, because it is an open prison. The MBUs run by charities are better able to provide additional support services, because of their role in the charitable sector in the community, and the staff background and training, which is much more child and family focused, because this is the focus of these organisations. They can therefore offer mothers in prison the same services they offer women in the community. It also means that the staff on the MBU are consistent and remain on the unit, and cannot be called away to attend to other duties as often the case in prisons where prison staff are responsible for running the
MBU. They also generally will have more time available to support and advocate for women applying for MBU places, and this is particularly true when compared with staff who support women in MBU applications in prisons without MBUs, who often have little or no time allocated for this.

North (2006) points out that those pregnant women and new mothers who have the most risk factors for poor child outcomes are also those that reap the greatest benefits from intensive, high quality services and interventions. In light of the fact that there are currently few, if any real alternatives available for pregnant women and new mothers in prison, it is unclear why there are consistently high numbers of empty places. This may be in part due to the role of Children’s Services in the decision-making process. In the community, if there are concerns about a risk to a child, the parent(s) or caregiver(s) may be assessed by Children’s Services, and this may sometimes take place in a residential family centre. In the case of women in prison, if there are major concerns, there is no residential family centre they can go to, because they are in prison, and despite the residential nature of prison MBUs and presence of 24-hour staff, these are not considered as assessment centres. This ultimately means that if Children’s Services raise concerns of this nature, there is no possibility of a woman keeping her child in prison while any assessments take place, and the child will be removed. This is despite the opportunities that a prison MBU offers to work with mothers and children, offer additional targeted support services, and carry out regular assessments.
2.3 Perinatal mental disorder

2.3.1 Risk factors for perinatal mental disorder in the community

It is well documented that the perinatal period is a time of increased vulnerability to mental disorder, and the risk factors for this are also widely recognised. Postnatal depression and puerperal psychosis are the mental disorders most commonly associated with the perinatal period, although there may also be a risk of other disorders developing at this time such as anxiety disorders and PTSD. Research suggests rates of some form of mental disorder of 10% for pregnant women and 13% for postpartum women, the most prevalent being depression and anxiety (Fisher, Cabral de Mello, Patel, Rahman, Tran, Holton & Holmes, 2012; O'Hara & Swain, 1996). Stressful life events and other difficulties during the perinatal period are associated with an increased risk of antenatal and postnatal depression (Eberhard-Gran, Eskild, Tambs, Opjordsmoen & Samuelson, 2001). Depression in mothers of young children is more prevalent than in the general female population (Brown & Harris, 1978; Ertel, Rich-Edwards & Koenen, 2011), but is often not recognised or treated (Groh, 2013; Wisner, Peindl & Hanusa, 1995). Estimates based on research in community samples suggest that up to 13% of women experience depressive episodes at some point during pregnancy or within the first year postpartum (Gavin, Gaynes, Lohr, Meltzer-Brody, Gartlehner & Swinson, 2005). Prevalence of anxiety disorder during pregnancy is reported at 10% in the community, and depression is reported to affect between 10 and 25% of pregnant women (De Tychey, Spitz, Briancon, Lighezzolo, Girvan et al., 2005; Glover, 2014; Marcus, Flynn, Blow & Barry, 2003; Martini, Petzoldt, Einsle, Beesdo-Baum, Höfler & Wittchen, 2015), and the risk
of developing depression in the first 5 weeks post-partum is three times greater than at other times in a woman’s life (Cox, Murray & Chapman, 1993). The risk of psychosis is twenty-one times greater postnatally (Kendell, Chalmers & Platz, 1987).

One of the strongest predictors of postnatal depression is the presence of depressed mood or anxiety during pregnancy (Beck, 2001; O’Hara & Swain, 1996). Other important risk factors include a previous history of depression at any time, which leads to a significantly increased risk (Beck, 2001; O’Hara & Swain, 1996), and a family history of mental disorder (Johnstone, Boyce, Hickey, Morris-Yates & Harris, 2001). Level of social support is also an important risk factor, and there is a strong link between low levels of actual and perceived social support and the incidence of postnatal depression (Logsdon, Birkimer & Usui, 2000; O’Hara & Swain, 1996; Robertson, Grace, Wallington & Stewart, 2004; Seguin, Potvin, St Denis & Loiselle, 1999). Stressful life events are recognised as a contributing factor to depression and postnatal depression (Brown & Harris, 1978; Farr, Dietz, O’Hara, Burley & Ko, 2014; O’Hara & Swain, 1996; Robertson et al., 2004), and pregnancy itself may be considered a stressful life event (Geller, 2004). There are other moderate risk factors including neuroticism, marital problems during pregnancy (O’Hara & Swain, 1996), pregnancy complications (Warner, Appleby, Whitton & Faragher, 1996), low income, financial problems, and lower social status (Beck, 2001; Brown & Harris, 1978; O’Hara & Swain, 1996). Previous psychotic or bipolar disorder is believed to be the strongest predictor of puerperal psychosis (Harlow, Vitonis, Sparen, Cnattingius, Joffe & Hultman, 2007). Other factors that may increase the risk of puerperal psychosis include being unmarried (Kendell et al., 1987) and not living with the child’s father (Nager, Johansson & Sundquist, 2005). The findings for risk factors for
perinatal depression have been consistent over time, using robust measures, and are supported by the findings from systematic reviews (Lancaster, Gold, Flynn, Yoo, Marcus & Davis, 2010).

The rate of maternal suicide in the general population is 0.52 per 100,000 within 42 days of the end of pregnancy, accounting for 6% of maternal deaths, and is the third highest cause of maternal deaths. For maternal deaths during pregnancy and within the first year postpartum it is the main cause of death, accounting for 14% of deaths. Psychiatric illness has been identified as the main cause of maternal deaths in the general population, and suicide was the leading cause of such deaths (Confidential Enquiry into Maternal Deaths and Morbidity, 2017; Howard, Flach, Mehay, Sharp & Tylee, 2011; Pope, Xie, Sharma & Campbell, 2013). With the increased risk of depression in the perinatal period such incidents of self-harm or suicide attempts may be more likely.

2.3.2 Impact of perinatal mental disorder

There is extensive evidence demonstrating the negative impact of maternal mental disorder in many areas of child development. Children of parents with mental disorder consistently show higher rates of behavioural, developmental and emotional problems than those in the general population (Beardslee, Versage & Gladstone, 1998; Klimes-Dougan, Free, Ronsaville, Stilwell, Welsh & Radke-Yarrow, 1999; VanDeMark, Russell, O’Keefe, Finkelstein, Chanson & Gampel, 2005). The younger the child at onset and the longer the duration of the mental health problem the greater risk that the child will also develop mental health problems (Beardslee, Versage & Gladstone, 1998; Hendrick & Daly, 2000). In cases where mental disorder
is unidentified or remains untreated, or when it is accompanied by substance misuse and/or personality disorder this will have an even more detrimental effect on a child’s development (Goodman & Gotlib, 2002; Harris, 2004; Johnson, Cohen, Kasen & Brook, 2006; Rutter & Quinton, 1984). Perinatal depression can have a negative impact on mother-infant interactions and attachment, impacting on the child’s emotional and cognitive development (Beck, 1999; Hay, Pawlby, Sharp, Asten, Mills & Kumar, 2001; Moehler, Brunner, Wiebel, Reck, & Resch, 2006; Puckering, 2004).

Anxiety may also negatively impact birthweight (Ding, Wu, Xu, Zhu, Jia, Zhang, et al, 2014) and mother-child interaction (Webb & Ayers, 2014). Depression during pregnancy also increases the risk of adverse neurodevelopmental outcomes for children, compared to children of mothers who do not experience prenatal depression, and similar to anxiety, these include an increased risk of developing emotional, behavioural and cognitive problems (Glover, 2014; Martini et al., 2015).

The negative impacts of anxiety and depression during pregnancy also include significant neurodevelopmental changes in the child (Talge, Neal & Glover, 2007; Glover, 2014; Martini et al., 2015; Van den Bergh & Marcoen, 2004), poor emotional adjustment in children (O’Connor, Heron, Golding, Beveridge & Glover, 2002), lower birthweight (Ding, Wu, Xu, Zhu, Jia, Zhang, et al, 2014) and poor mother-child interaction (Webb & Ayers, 2014).

Presence of personality disorder in mothers can lead to insecure attachment, parental possessiveness, inconsistency, poor communication, and also increases the risk of the child developing a personality disorder later in life (Johnson et al., 2006; Sroufe, Coffino & Carlson, 2010). Mothers with symptoms of antisocial personality
disorder may be less understanding and have a more hostile and harsh parenting style (Bosquet & Egeland, 2000).

Exposure to traumatic, chronic and common life stresses during pregnancy has been linked to significant neurodevelopmental changes, including autism, affective disorders and reductions in cognitive ability (Talge et al., 2007), poor emotional adjustment (O’Connor et al., 2002), and attention deficit hyperactivity disorder (ADHD) symptoms (Van den Bergh & Marcoen, 2004). Whilst the mother’s postnatal mood and demographic factors may also be a contributing factor, the majority of these studies controlled for these variables. Such findings have been reported consistently and are supported by the results of recent systematic reviews (Grigoriadis, VonderPorten, Mamisashvili, Tomlinson, Dennis, Koren, Steiner, et al., 2013; Kingston, Tough & Whitfield, 2012) and highlight the risks of poor mental health during pregnancy on foetal development, as well as postnatally.

2.3.3 Women in prison and perinatal mental health

The many risk factors for perinatal mental disorder are likely to be more prevalent in prison than in women in the community. Women in prison have higher levels of mental disorder including depression, significantly increasing the risk of developing perinatal depression (Beck, 2001; O’Hara & Swain, 1996). For a woman who spends part or all of her pregnancy in prison, levels of perceived and actual social support may be much lower than in the community, contributing to the risk of developing postnatal depression (O’Hara & Swain, 1996; Seguin et al., 1999; Logsdon et el., 2000; Robertson et al., 2004). Imprisonment as well as pregnancy are both stressful life events, which may contribute to perinatal depression (Brown & Harris, 1978;
O’Hara & Swain, 1996; Farr et al., 2014; Robertson et al., 2004). To experience two such stressful events at the same time may lead to even higher rates, but the limited research on pregnancy in prison means this issue has not been explored.

Many women in prison are lone parents, and even those who are not, are separated from partners by imprisonment, and the majority are unemployed, and of a lower social status, all of which increase the risk of perinatal mental disorder (Beck 2001; Brown & Harris, 1978; Kendell et al., 1987; Nager et al., 2005; O’Hara & Swain, 1996).

Whilst there is no data on rates of suicide, suicide attempts and self-harm for pregnant women in prison, over a third of women in prison have a history of suicide attempts (Corston, 2007), and an elevated risk of suicide compared to women in the community and men in prison (Fawcett Society, 2003). This combined with suicide being identified as the leading cause of maternal deaths (Confidential Enquiry into Maternal Deaths and Morbidity, 2017) suggests perinatal women in prison are likely to be at increased risk of suicide and self-harm.

Interviews with mothers in prison separated from their babies found that 36% of those who had applied for an MBU place had self-harmed compared to 51% of those who had not applied, suggesting that this sub-population of imprisoned women may be more at risk of self-harm than the general population (Gregoire et al., 2010). The same study reported a similar pattern for suicide attempts with 30% of those who had applied for a place compared to 47% of those who had not applied for an MBU place having attempted suicide at some point. However, this study did not focus on self-harm specifically in the perinatal period, during MBU residence, or separation, and does not give any insight into the prevalence at this specific time.
In addition to the increased prevalence of risk factors for perinatal mental illness in prison and higher rates of mental disorder generally, prison may make pre-existing conditions worse (Hassan et al., 2011). Those who are pregnant or have recently given birth and are in prison may be at an increased risk of developing a disorder or of a previous condition being exacerbated, but this has not been empirically researched. Imprisonment at a time when a woman may be more likely to develop perinatal depression or other perinatal mental disorders will impact a woman’s ability to make appropriate plans or preparations for the care of her infant.

The limited research that has focussed on the mental health of pregnant women in prison, has been carried out with pregnant women in US prisons. The prevalence of depression and anxiety is reported to be high in pregnant women in prison in the US (70-80%; Fogel, 1993; Fogel & Belyea, 2001; Mukherjee, Pierre-Victor, Bahelah & Madhivanan, 2014), and in US prison nurseries (similar to UK MBUs; 75%; Goshin, Byrne & Henninger, 2013). Fogel (1993) measured state anxiety and depression levels in 89 pregnant women in a maximum-security prison in the Southern USA with 30% scoring higher than the population norm for adult working women. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used to measure depression with 77% above the threshold for clinical depression. In a later study, symptoms of clinical depression were found in over 70 per cent of participants, and high levels of stress in the last month were reported (Fogel & Belyea, 2001). Goshin et al (2013) also used the CES-D and reported similarly high levels in a sample of 139 women, suggesting the findings of high levels of depression remains consistent. Hutchinson, Moore, Propper and Mariaskin (2008) also reported elevated levels of depression according to mean scores on the Beck Depression
Inventory (BDI-II). The small sample size of 25 limits any conclusions that can be drawn and the generalisability of the findings. The limitation of these studies when considering pregnant women in prison in England, is that they were all carried out in US prisons and whilst the findings are important, they are from women in a different prison with different policies and different mental health provision.

There have been no studies on the impact of depression on children born to mothers in prison but the effects are likely to be similar to the impact of depression on children in the community outlined above (Beardslee, Versage & Gladstone, 1998; Klimes-Dougan, Free, Ronsaville, Stilwell, Welsh & Radke-Yarrow, 1999; VanDeMark, Russell, O’Keefe, Finkelstein, Chanson & Gampel, 2005; Moehler, Brunner, Wiebel, Reck, & Resch, 2006; Puckering, 2004, Beck, 1999; Hay, Pawlby, Sharp, Asten, Mills & Kumar, 2001; Ding, Wu, Xu, Zhu, Jia, Zhang, et al, 2014; Webb & Ayers, 2014). Data for the prevalence of personality disorder in pregnant women in prison is unavailable, but likely to be similar to that of the general female prison population (Singleton et al., 1998; Stewart, 2008), further increasing risks of poor parenting and negative outcomes for children (Sroufe, Coffino & Carlson, 2010; Johnson, Cohen, Kasen & Brook, 2006; Bosquet & Egeland, 2000).

Despite high rates of suicide in prison, particularly in the female prison population, and that it is also considered one of the main causes of maternal mortality in the community in the first 12 months postpartum (Lindahl, Pearson & Colpe, 2005; Fuhr, Calvert, Ronsmans, Chandra, Sikander, De Silva, et al., 2014), there are no published figures available for perinatal suicidality in the prison population in England, or internationally.
Research from the US suggests up to 88% of pregnant women in prison had a drug or alcohol problem or both (Eliason & Arndt, 2004; Mukherjee et al., 2014), but figures for England are unknown. Drug and alcohol misuse, may lead to social isolation, criminal activity and psychological problems as well as impacting parenting ability (Dawe et al., 2007), and may also lead to miscarriage, lower birth weight, and premature delivery (Johnson, Gerada & Greenough, 2003). Alcohol abuse during pregnancy has negative impacts on brain development (Welch-Carre, 2005), and the most severe consequence for the unborn child is Foetal Alcohol Spectrum Disorder (FASD).

Whilst there appears to be no published research on the mental health of pregnant women in prison in England, there has been research into the mental health of mothers of young infants in prison, including those accepted and not accepted to MBU’s, which provides further evidence of the increased risk factors for mental disorder during the perinatal period, and negative mother and child outcomes. Sixty per cent of mothers in MBUs had some form of mental disorder, but mothers in prison separated from their babies had higher rates (90%), including higher rates of depression, anxiety (Birmingham et al., 2006; Gregoire et al., 2010). Prevalence of personality disorder was higher in women separated from their children (60-63%), than those admitted to MBUs (35%) (Birmingham et al., 2006; Gregoire et al., 2010). However, it is not clear if these differences were a result of pre-existing factors or associated with MBU residence (Gregoire et al. 2010). Levels of hazardous drinking were reported for just 13% of participants in MBUs, and drug misuse or dependence for 36%, in the 12 months prior to imprisonment (Birmingham et al., 2006). For imprisoned women separated from their children, 23% were drinking at hazardous
levels and 60% were using illegal drugs at levels of abuse or dependence in the 12 months prior to custody (Gregoire et al., 2010). The relatively lower levels in MBUs may be due to recent pregnancy, and the criterion to be drug free for prison MBU admission.

The relatively lower levels in MBUs may be due to recent pregnancy, and the criterion to be drug free for prison MBU admission.

The high levels of unidentified and untreated mental disorder in mothers in prison (Birmingham et al., 2006; Gregoire et al., 2010) present clear risks to both mother and child because of the pre-existing risk factors (substance misuse, personality disorder, mental disorder) for negative maternal and child outcomes, yet there appears to be very little research that has focussed on the specific impacts of this in a population that is particularly high risk.

2.4 Social, physical and criminological impacts of pregnancy and motherhood in prison

Imprisonment during pregnancy can have differing impacts on different women and both negative and positive impacts have been reported. For those who prior to imprisonment, are using drugs, not eating enough and not accessing antenatal care, there can be a number of positive impacts. For those who are not using drugs, and are eating well and accessing antenatal care in the community, there may only be negative impacts for both them and their children if imprisoned during this period. Whilst there may be some improvements in initial outcomes for some women who spend long periods, or all of their pregnancy in prison, the impact of repeated short sentences during this period appears to have a negative impact.

North (2006) interviewed and consulted a range of key policymakers and practitioners, including staff from the Prison Service, Home Office, and from the
voluntary sector working with mothers in prison and also midwives and health visitors working in prisons. North’s (2006) reports outlines some of the negative impacts imprisonment during pregnancy may have, including limited diet, and lack of access to antenatal classes, support and parenting education. The mother will also miss out on seeing their child’s father and any other children she might have outside prison, and may also experience increased stress because of the prison environment.

Whilst the report provides valuable information, it did not include standardised measures, and did not include evidence gathered directly from pregnant women and mothers themselves, limiting their voice and information on their experience in the report.

In a scoping review of the available literature on the health care of pregnant women in prison at the time Edge (2006) reported that women often do not feel safe or cared for, and feel uncomfortable and hungry. Whilst this supports the findings of North (2006), the majority of studies included in this review were carried out in the US, with a different system of both imprisonment and health care, making the extrapolation of such findings to the UK system problematic. In a meta-analysis of research into the outcomes for pregnant women in prison, it was found that despite the increased risk factors for poor pregnancy outcomes (e.g. drug misuse, smoking, physical and mental health problems) 30% of women in prison do not receive adequate perinatal care (Knight & Plugge, 2005). There is however also evidence to suggest that longer duration of imprisonment may have a significant positive impact on pregnancy and birth outcomes. The same study found that in comparison to other disadvantaged women in the community, women in prison were found to be less likely to have low birth weight babies (Knight & Plugge, 2005). However, similar to
the Edge (2006) review, the findings are limited in the context of the English prison system, as the majority of studies included were carried out in the US. It may also be that the inadequacy of antenatal care is related to the part of the pregnancy prior to imprisonment, this perhaps further highlights the importance of perinatal care in prison. The risk of premature birth has been found to increase by the number of incarcerations experienced during pregnancy (Bell, Zimmerman, Huebner, Cawthon, Ward & Schroeder, 2004), and in a review of medical records for 120 imprisoned women, 33% had serious complications or medical issues and 14% of babies were admitted to neonatal intensive care units (Siefert & Pimlott, 2001). Some of this may be due to the short and repeated stays in prison which may impact the continued provision of perinatal care, with frequent changes to health care providers and lack of co-ordination. It may also be the additional stress of repeated imprisonment during this period, or that these women have more chaotic lifestyles and use more drugs than those who are imprisoned only once during their pregnancy. Further research is necessary to better understand these different impacts of imprisonment during pregnancy.

There is limited research on drug and alcohol misuse in pregnant women and mothers in prison. In one study of pregnant women in prison in the United States, 88% of women reported a drug or alcohol problem or both, and 90% of these women had used illicit drugs (Eliason & Arndt, 2004). Mukherjee et al., 2014 reported high levels of substance misuse in their meta-analysis of pregnant women in prison. However, these studies failed to identify what percentage had used drugs or alcohol during all or part of their pregnancy, or the level of use. Women may also be more likely to abstain from the use of illicit drugs (66%) than non-pregnant prisoners (37%)
and if they do continue to use drugs would change from ‘harder’ drugs such as crack to ‘safer’ drugs such as marijuana (Eliason & Arndt, 2004). There may be a number of factors that contribute to apparently better outcomes when compared to other disadvantaged groups, and these may include the ‘drug-free’ setting, shelter and regular meals, and it may be that some of these women are more likely to access antenatal care in a prison setting than in the community.

2.5 Impact of parental imprisonment and separation

“…children of offenders are an ‘invisible’ group: there is no shared, robust information on who they are, little awareness of their needs and no systematic support.” (Ministry of Justice, 2007, pp.2)

There is extensive evidence to support the key importance of the attachment between a baby and their mother or primary caregiver on a child’s physical and emotional development (Ainsworth, 1982; Bowlby, 1969). Babies become attached to their main caregiver around the age of 6 months (Ainsworth, 1982; Bowlby, 1969), and if this attachment is broken between the age of 6 months and four years or possibly earlier, this can cause major psychological damage (Ainsworth, 1982; Bowlby, 1969). If the separation is sudden, or repeated, then the risk of developing a mental or personality disorder or learning difficulties in childhood or later in life is increased (Rutter, 1981). A strong attachment is a protective factor against other negative influences and reduces the impact of other risk factors (many of which will be present in children of imprisoned mothers) on later negative outcomes in life. For babies who are separated from their mothers because of imprisonment, any separation is likely to be sudden and may often be repeated. When a mother is
arrested, there may not be time to organise appropriate caregivers and children may be placed with strangers if there is no other option available. This does not only lead to problems at the initial separation but may also cause problems on release if mother and child are reunited. They may have formed attachments with substitute caregivers which will then be broken. In the worst cases this may happen repeatedly, perhaps with different caregivers, leading to repeated broken attachments.

A further issue that impacts many children’s stability during this period and the stress of organising alternative care, is that at least 33% of imprisoned women of dependent children are lone parents (Home Office, 1997). More recent figures suggest this may be between 43% (Birmingham et al., 2006) and 59% (Gregoire et al., 2010). The percentage of lone parents in the general population is reported to be 25% (Office for National Statistics, 2013). There is limited information about where these children go, however many will be placed in the care of family, with a smaller minority placed by Children’s Services (HM Chief Inspectorate of Prisons, 1997; Hamlyn & Lewis, 2000).

Fifty-five per cent of participants in MBUs had other children in the community (69 children in total; Birmingham et al., 2006). Only 30% of these children from whom they were separated were in the care of their father during their imprisonment, with a further 48% being cared for by another immediate family member. Thirteen per cent were in foster care and 4% had been adopted. One of the participants had had three previous children taken into Children’s Services care, and six had had previous children placed on the child protection register. For those mothers who were separated from their infants 59% reported that they were lone parents at the time...
of the study, and of their children under the age of 18-months just 17% were living with their father, 35% were living with another family member, 44% were in foster care, and 3% had been adopted (Gregoire et al., 2010). Two of the mothers did not know where their children were at the time of the study. This suggests that almost half of the babies in this study who were separated from their mothers during imprisonment were in Children’s Services care, however the study does not report on whether this is as a direct result of imprisonment or other factors, such as previous childcare history. It is therefore not possible to draw any conclusions about the percentage of these children that would have remained with their mothers if they had not been sent to prison. Of the 169 older children that the women had, 13% were with their father and 56% with another immediate member of the family, 11% were in foster care and 18% had been adopted. But a large number of children are separated from their mothers each year and will live with new carers at least temporarily.

Lower socio-economic status, mental disorder, social exclusion and being a victim of abuse are all risk factors for poor parenting and may impair the developmental outcomes of children and the Department of Health (2010) emphasises the need to address such issues early. In addition to the problems caused by the imprisonment of their mother, children of prisoners tend to already be disadvantaged, even before they are born. They are more likely to have parents who are unemployed, with mental health problems, with marital difficulties and a higher incidence of abuse and neglect (Murray, 2005). Those children whose mothers are in prison are even more likely to have families where there has been abuse or mental health problems, than when the father is in prison, as far more female prisoners are affected by these issues.
than male prisoners. This further disadvantages those children who may be separated from their mother by imprisonment (Taylor, 2004). All of the above may contribute to an increased risk that the children themselves will later develop antisocial or criminal behaviours (Murray, 2005; Murray & Farrington, 2005). The Social Exclusion Unit (2002) reported that children of prisoners are three times more likely to develop mental health problems and/or antisocial or offending behaviour. Murray’s (2005) research suggests that imprisonment of a parent is not just a strong predictor of future criminal behaviour in children but is a specific risk factor. Those adults whose mothers had been imprisoned were more likely to have been convicted of an offence than adults whose father had been in prison (Ministry of Justice, 2012b), and this may in part be related to the greater initial impact on children when their mother is imprisoned in terms of broken attachment and loss of stability.

As well as an increased risk of offending other antisocial and behavioural problems have been reported in children of prisoners and these include physical as well as mental health problems such as depression and anxiety, drug and alcohol misuse, hostility and aggression, bedwetting, problems at school, problems with discipline, nightmares and problems in relationships with others (Stanley & Byrne, 2000). The research cited does not take into account the age of the child at initial separation, the type and quality of the substitute caregiver, or the impact of repeated separations. If separation can be avoided, particularly during the first 18-months of life, then outcomes for these children might be improved. This is a strong argument for MBU placement in order to develop/maintain the bond between mother and child in those early critical months of life, and in light of the limited evidence that these children are more likely to stay with their mothers in the longer-term. There
are currently no studies that have focussed specifically on the impact of separation soon after birth, of mothers and babies who are in prison, and none that have compared the initial outcomes of these mothers and babies with those who remain together in a prison MBU.

As previously noted, family contact is an important factor in resettlement and rehabilitation and women who are in prison who do not maintain close family relationships during the period of imprisonment are more likely to recidivate than those women who do (Barrick, Lattimore & Visher, 2014).

There are no published large-scale UK studies which take into account confounding factors which exist pre-imprisonment and pre-birth, so it has not been possible to establish conclusively the negative impacts of imprisonment and separation from imprisoned mothers. There is no published research available on the specific impacts of separating mothers and young babies in prison, on either the mothers or the babies. The only research that has considered this aspect (Dolan et al., 2013) has too many limitations to draw any wider conclusions or make comparisons between babies who are separated from their mothers and babies who stay with their mothers in prison. Despite the known advantages of avoiding separation wherever possible, research needs to focus specifically on mothers and babies in prison, initial outcomes and the impacts of separation versus remaining together in prison MBUs.

2.5.1. Impact of prison MBUs and nurseries on mothers

There are positive impacts for mothers of being allowed to remain together during the mother’s imprisonment. Again, much of the research in this has been carried out in the US in prison nurseries, but provides good evidence for improved outcomes
Goshin et al., (2013) reported lower levels of recidivism for women who had been residents in prison nursery programmes compared with women who had not. The study examined reconviction data for women released from a prison nursery programme and reported that the ninety-three of a sample of 139 women (67%) had left prison with their babies. For those women who were separated, it was because their sentence was longer than the maximum age that their child could remain with them in prison (one year). Three years post-release 120 of the women released from custody and who had spent some or all of that sentence in a prison nursery (86.3%) had remained in the community. Six-year recidivism data for women from the prison nursery was collected and was 4.3 per cent for new offences and 9.4 per cent for parole violations in that time. This compares favourably to recidivism for the general female population of the same prison from the same year was 20.4 per cent (Department of Corrections and Community Supervision, 2011 as cited in Goshin et al., 2013). Whilst these results are only from one prison and one prison nursery, they do suggest that prison nursery residence and/or retaining custody of children post release may function as a protective factor against future recidivism. However, they did not compare mothers who were in the prison nursery programme directly with mothers who had been separated, and who might then have regained custody post-release, but made comparisons with the general female prison population. Carlson (2001) also reported a lower recidivism rate for women admitted to prison nurseries (9%) compared to women who were separated from their babies (33%), as well as a 13% reduction in misconduct reports for women who were pregnant and were admitted to the prison nursery programme. Whilst the sample size was smaller in this study (n=44), it adds support to the findings of Goshin et al (2013) for the
benefits of prison nursery residence in terms of reduced recidivism. However, neither of these studies controlled for pre-existing variables that might also have impacted outcomes, and the reduction in misconduct reports may also have been influenced by other factors, including pregnancy itself.

There is further support for these findings from Dolan et al’s (2013) follow-up study, which found lower levels of recidivism for those who had been admitted to prison MBUs in England (14%), compared with those who had been separated from infants whilst in prison (32%). Again, this may be due to other pre-existing factors that were not measured in the study, as mothers who were admitted to mother and baby units were also found to be more likely to be ‘stable’ in terms of relationship, home and employment factors than those who were separated. Whilst the sample size was relatively small and included a higher proportion of those who had resided in MBUs, it does however add further evidence that prison nursery or MBU residence may reduce recidivism. Further research is necessary to identify if there are any pre-existing factors that may contribute to this.

Mental health benefits have also been reported for prison MBU/nursery residence with lower levels of mental disorder reported for mothers in prison MBUs (60%; Birmingham et al., 2006) compared to women who were separated from their children whilst in prison (90%; Gregoire et al., 2010). Levels of neurotic disorder were lower (35%) compared to those separated (66-70%) and depression (29% compared to 39% - 43%). The lower prevalence of mental disorder may be related to MBU residence, and is lower than that in the general female prison population also (Plugge et al., 2006; Singleton et al., 1998; Stewart, 2008). However, it may also be partly
due to mental disorder playing a role in the decision to apply for a place or to offer a woman a place on an MBU. However, the impact of pre- and post- separation factors, as well as the presence of perinatal depression was not reported in this study. In US prison nurseries participants reported improvements in self-confidence and self-esteem Carlson (1998; 2001). However, some of the measures employed in the studies were unclear, and there was no baseline data on levels of self-confidence and self-esteem, limiting the reliability of these findings.

In the follow-up study of these two groups of women who had and had not spent time in prison MBUs with their children, there was a much higher prevalence of depression in the group of women who had been separated from their children whilst in prison (45%), than for those who had been in MBUs (27%) at follow-up (Dolan et al., 2013). Whilst comparisons between women who did and did not spend time on MBUs showed little difference in levels of hazardous drinking between groups, and pre- and post-prison, there were differences in levels of drug misuse (Dolan et al., 2013). At first interview, 37% of participants (ex-MBU, 23%; separated 45%) reported they had used illegal drugs at levels of abuse/dependence in the 12 months prior to imprisonment. At follow-up, this was reduced by just over half (18%) with higher levels in those who had been separated (24%) than those who had spent time in MBUs (9%), suggesting a greater reduction for those in MBUs (Dolan et al, 2013). Whether MBU residence alone impacted this is not clear. It is necessary to be and remain drug free in order to access and reside in an MBU. Women who stayed in MBUs were also much more likely to have maintained custody of their children post release, which may have served as an additional protective factor against drug misuse. Women who had been in MBUs also had a significantly lower
recidivism rate than women who had been separated. Differences in mental health, drug misuse and recidivism may be due to pre-existing factors but may also have been influenced by the initial and longer-term separation from their babies, but again this study does not report on these issues, and is limited because of the small sample size interviewed for the follow-up. Mothers who lived with their infants in US prison nurseries reported that this had improved their development as a parent and their relationship with their child (Carlson, 2001; Gabel & Girard, 1995).

For mothers who were followed up who had been in prison MBUs 77% of the children were living with their mothers approximately 5-7 years after they were first interviewed in prison compared to only 20% of the children who had been separated from their mothers during imprisonment, who were living with their mothers approximately 2-5 years after they had first been interviewed (Dolan et al., 2013). The same study found that 40% of the separated children had been adopted by the time they were followed up compared to 1% of those children who had been placed with their mother in a prison MBU. These findings suggest that mothers who live in MBUs are more likely to maintain custody of their children post release than those who are separated. Separation during imprisonment may mean mothers and children are not reunited post-release. This is the only published study currently available which gives some indication of what happens to babies who are and are not separated from their mothers during imprisonment. However, this was a small study which located less than half of the original participants for follow-up, a higher proportion of the women who had resided in MBUs previously participated, than mothers who had been separated, meaning they were under represented in the sample. In addition, the total sample size (n=55) was small in comparison to the
number of imprisoned women who have babies or are mothers of young children, therefore the results may not be representative. There may also be a number of pre-existing factors that contributed to the findings, including the high attrition rate and varying follow-up period. It only gives a limited insight into how many of these children are reunited with their mothers on release, and cannot measure the impact of MBU placement. Larger scale studies with better follow-up are needed to explore the impacts of separation and MBU placement on the short and long-term care of babies.

MBUs may offer an opportunity to improve the health and wellbeing of women and their babies, who might not access services in the community (Corston, 2007), and an opportunity to offer treatment for long-term problems, such as substance misuse, and therefore improve outcomes in this group, through offering support to change their lifestyles (Edge, 2006), and the follow-up study comparing those who did and did not spend time in MBUs suggests this may be the case (Dolan et al., 2013).

Pregnant women and mothers of young babies, with treatable mental health problems, could receive treatment and be accommodated in prison MBUs (Gregoire et al., 2010), but MBU residence alone and maintaining custody of children may also positively impact mental health. There may be women who are eligible and could benefit along with their babies from an MBU placement, and yet currently do not apply or are not admitted. Understanding the reasons why could contribute to the development of policy and practice to allow more mothers and babies to benefit.

Without early intervention, these problems may not be addressed and outcomes for children may be poor. Prison MBUs also offer the possibility of addressing treatable mental disorders in a safe environment (Gregoire et al., 2010). However, such claims
need to be further explored and empirical evidence for the positive benefits of prison MBUs for mothers and babies is essential in order to support their continued use, for a greater number of women particularly in light of the fact that the only other option currently is separation.

### 2.5.2 Impact of prison MBUs and nurseries on children

A longitudinal study in the US of 100 children who lived with their mothers in a prison nursery, and who were followed up post-release, found rates of attachment in this group were higher than expected, and the majority (75%) who spent a full year in the prison nursery were classified as securely attached to their mothers, similar to low risk groups in the community (Byrne, Goshin & Joestl, 2010). Those babies who left prior to their mother’s release date, and were therefore separated were less likely to have a secure attachment than those who remained in the prison nursery with their mother. The study does not report on the longer-term outcomes for these children, but suggests that prison nursery residence can contribute to rates of secure attachment, which if maintained will function as a protective factor against other adverse experiences.

Children who had had an imprisoned mother and had spent their first 12 to 18-months in a prison nursery (n=47) were compared with children who had been separated from their mothers during imprisonment (n=64). Those who had been separated had significantly worse scores for anxiety and depression, and this was after controlling for risk factors in the alternative care environment for those who were separated (Goshin, Byrne & Blanchard-Lewis, 2014). It is suggested that prison nursery residence increases resilience in infants whose mothers are imprisoned. The
relatively small sample sizes and lack of longer-term follow-up data mean that the findings should be interpreted with caution, but suggest that prison nurseries offer more benefits than alternative care in the community.

Evidence on developmental outcomes for children in prison nurseries and MBUs is very limited, and the research that is available presents a mixed picture. Research with children who spent time in prison nurseries in New York found they had motor and mental development within the normal range (Byrne, 2010). Children up to the age of 18-months in Spanish prison mother-child units were also found to have normal development, and this was true for all children in different units up to the age of 18-months (Jiménez & Palacios, 2003). After 18-months, a small number of children in the least positive environments scored lower on developmental measures. Rather than prison itself being responsible for this in the older age group, it appears to be the specific environment of some rather than all of the units. There appears to be only one study on the impact of prison MBUs and children’s development in England. Catan (1989) compared the development of 74 babies in a prison MBU with that of 33 children separated from their imprisoned mothers who were in the community with alternative carers (relatives, friends, Children’s Services care). No significant developmental differences were found between the MBU babies and the comparison group initially. However, there was a gradual decline in scores for both groups over a four-month period and by the fourth month there was a significant difference in scores between the two groups with the babies in the MBU group showing greater decline. This decline was reported to be in two developmental areas, locomotion and cognition. The average stay for babies in the Unit was between 13 and 19 weeks. It was also reported that children benefitted
from intimacy with their mothers, and the social contact within the unit with other adults and children. Whilst the study suggests remaining in a prison MBU beyond a four-month period was developmentally detrimental to the babies, this study is now almost 30 years old and was carried out when there were only three MBUs in the country. The recommendations of the study were not that children should not be admitted to MBUs, but similar to the findings of Jiménez and Palacios (2003), that consideration should be given to freedom of movement and opportunities for exploratory play, in the environment and in staff training. Catan (1992) also reported that development returned to the normal range within one month post-release, and therefore any delays were temporary. Since this study was carried out purpose built MBUs have been developed, which employ highly qualified staff, and the MBU nurseries are regularly inspected by OFSTED therefore providing the same level of care as in the community.

No recent studies have examined the children’s development in prison MBUs. In light of the above issues the results of this study must be interpreted within the context of the time and circumstances in which the research was carried out and it cannot be assumed that the same results would be reported today.

2.6 MBU decision making

Research suggests that the majority of pregnancies of prisoners who have had babies during or shortly prior to imprisonment are unplanned (reports vary from 68-82%; Birmingham et al., 2006; Gregoire et al., 2010). This compares to the much lower figure of one in six or 16.2% of pregnancies in the general UK population (Wellings, Jones, Mercer, Tanton, Clifton, et al., 2013). Therefore, women who are pregnant
and in prison may have a number of decisions to make, in a relatively short period of
time, in difficult circumstances and with limited or no support. This may include
whether or not to continue with their pregnancy as well as decisions about the future
care of the child if they do go ahead, all of which can be further complicated by their
legal situation.

Whilst the majority (92%) of mothers in prisons with MBUs reported being informed
of the possibility of MBU residence (Gregoire et al., 2010), 8% in this study were not
informed. Research also suggests that not all mothers or pregnant women are
informed of the services that are available at different MBUs and in some cases
neither prison staff nor mothers have sufficient information to make an informed
decision (Albertson et al., 2012).

Of 112 women in prison separated from children under the age of 18-months, only
30% had applied for a place in a prison MBU, and of these 76% were not offered a
place (Gregoire et al., 2010). Of the 70% of this group who had not applied for a
place, 24% of their children were already in Children’s Services care, 23% did not
believe prison was the right environment for a young child, 16% were with a family
member, 10% were close to the age limit of 18-months and 4% reported being
unaware that they were eligible to apply. Of those who applied and had not been
given a place at the time of the study, 30% were refused due to the length of their
sentence, 3% because of the nature of their offence, 6% because of their previous
childcare history and 3% because of their behaviour in prison. Nine per cent of this
group were still awaiting a decision, 6% had been removed from an MBU, and a
further 6% had changed their mind about a place after they applied. The remaining
37% were unsure of the reasons their application had been denied, as this information had not been communicated to them. Whilst this study offers some important information on the reasons women do not apply and why they may be refused admission, it does not allow for detailed comparisons of those who do and do not apply as this was not the aim of the study. It also does not allow for comparisons on initial outcomes for mothers and babies who were and were not given a place.

There is evidence to suggest that women admitted to prison MBUs have more ‘stable’ backgrounds (Gregoire et al., 2010). Similar levels of unemployment (80% separated mothers; 59% mothers in MBUs), and prior homelessness (16% separated mothers; 4% mothers in MBUs), to the general female prison population were found for mothers of young babies in prison, but were lower for women who maintained custody of their babies and resided in MBUs (Ministry of Justice, 2012a; Gregoire et al., 2010; Birmingham et al., 2006). Women admitted to prison MBUs were also more likely to be married or cohabiting (55%) and had fewer convictions for violent crime (11%), than mothers of young babies who were not in prison MBUs (41% married/cohabiting & 21% violent crime; Birmingham et al., 2006; Gregoire et al., 2010). However, these are the only studies that have reported on the demographic characteristics of mothers in prison MBUs and those that are separated from their babies, and did not examine the specific factors that were involved in MBU decision making.

The higher rates of mental disorder and personality disorder reported in mothers separated from their babies (Gregoire et al., 2010), suggests that the presence of
mental disorder and/or personality disorder may be a barrier to women applying for or being admitted to MBUs, but it is not clear from the research carried out if these were pre-existing mental disorders, or were triggered or exacerbated by separation, as no pre-birth baseline data was gathered.

Research with women in MBUs found that 36% reported using illicit drugs in the 12 months prior to imprisonment (Birmingham et al., 2006). A similar proportion (39%) of mothers in prison who had applied for an MBU place but at the time had not been offered a place reported using illicit drugs in the 12 months before imprisonment, but this rose to 60% in those mothers who were eligible but had not applied (Gregoire et al., 2010), suggesting that drug misuse rates are higher in women who do not apply. Over the same period 13% of women in MBUs reported drinking to hazardous levels, compared to 15% of those who had applied but were separated and 27% of those who were eligible but had not applied, again suggesting higher rates in this group. While this suggests that those with current or recent drug or alcohol misuse or dependence are less likely to apply, it does not tell us if it is the recent substance misuse that is the reason or if substance misuse increased as a result of separation, as data was only gathered post-separation or after women had been admitted to MBUs, so there is no baseline data.

Whether not a woman has been sentenced may also affect the application process. The Birmingham et al. (2006) study suggests that only a small proportion of women residing in MBUs at that time (7%) were also on remand, whilst the findings from mothers who were separated suggest almost half (44%) were on remand.
The Birmingham et al. (2006) and Gregoire et al. (2010) studies used the same methodology and therefore do provide some evidence for the theory that those women who do not apply for/are not given a place in a prison MBU are likely to be from a less ‘stable’ background and to have some form of mental disorder and/or personality disorder, to be misusing drugs or alcohol and to be on remand rather than sentenced. However, the findings are limited by the cross-sectional nature of the research, the relatively small sample sizes and the use of convenience sampling.

Some MBU staff feel that the criteria for acceptance for an MBU are unclear and affecting their interpretation and that of possible applicants, therefore affecting the number of women who apply (Albertson et al, 2012). There is some evidence from interviews with female prisoners and prison staff that the distance of units from home may also impact the decision of some eligible women not to apply (Cabinet Office, 2009). Because they would be held further away from other children, partners and family members and hence have less contact, this may leave a woman with a very difficult choice if she has other young, dependent children.

A better understanding of the factors that influence the decision to apply and the decision to offer an individual woman a place in an MBU needs to be established. The information and advice given may be an important factor as may the subjective understanding and interpretation of the admission criteria. Without this women and babies who could benefit from these facilities may be missing out on the opportunity, and will continue to do so, particularly if further MBU places are lost and a valuable resource for a vulnerable group may be further diminished.
2.7 Rationale for current study

There have been no studies published in the UK which have comprehensively examined the demographic characteristics in pregnant women in prison and whether there are pre-birth differences between those who are and are not admitted to prison MBUs. The evidence that does exist is based on research from the US or with women who arrived in prison and/or participated in research post-birth.

The increased risks of mental disorder occurring in the perinatal period for women in prison have not been researched and the only studies which have focussed on the mental health of mothers in prison have established the prevalence only after the child was born and included women who had babies who were just a few days old up to the age of 18-months. Whilst differences were identified between mothers who were and were not admitted to prison MBUs, it is not clear what the prevalence of mental disorder was prior to admission, therefore not allowing the possibility to assess the impact of MBU residence on mental health. Self-harming behaviour and substance misuse have been reported as lower in women in MBUs, but again it is not clear what impact, if any, MBU residence has on such behaviour. Neither is it clear the impact previous self-harm and substance misuse has on the decision to apply or admit a woman to an MBU or if this varies according to the establishment.

The current study will establish prevalence of mental disorder, personality disorder, self-harm and substance misuse before and after admission to MBUs or separation from infants, and the impact this may have on the decision-making process.
There has been some research on the social and physical impacts of imprisonment during pregnancy, but this is very limited, and mainly US based. Research examining this in the UK involved prison staff and practitioners, but did not collect data from pregnant women themselves.

Whilst there has been some research into the reasons women do not apply for prison MBU places, this is limited and did not look at mental health as a possible factor. A better understanding of the factors that influence the decision to apply and the decision to offer an individual woman a place in an MBU needs to be established. The information and advice given may be an important factor as may the subjective understanding and interpretation of the admission criteria. Women and babies who could benefit from these facilities may be missing out on the opportunity, and will continue to do so, particularly if further MBU places are lost and a valuable resource for a vulnerable group may be further diminished. The current study will look at the factors that influence the decision to apply and admit women to MBUs with particular focus on mental disorder.

Little is known about the impacts of prison MBUs on early outcomes for infants and the bond between mother and child. Whilst there is extensive evidence of the negative impacts of parental imprisonment, much of this is limited because of the focus on parents rather than just mothers, and limited information about the age of children and there is a real need for such evidence. MBUs may offer an opportunity to improve the health and wellbeing of women and their babies, who might not access services in the community. Understanding the positive and negative impacts of MBUs is important for the provision of care of pregnant women and new mothers.
in prison, and this study aims to establish the impact on early outcomes for mothers and babies.

There is no published research on the experiences of pregnancy, childbirth and motherhood in prison in England. The current study aims to explore the experiences of pregnancy, childbirth, motherhood, the MBU application process and of MBU residence or separation for women in English prisons.
3. Systematic Review

Experiences and impact of pregnancy in prison: A narrative mixed methods review.

Dolan, R., Jasper, R., Hann, M., Edge, D. & Shaw, J.

(Submitted for publication)
Abstract

A systematic review was carried out to examine a) mental health impacts of imprisonment during pregnancy, b) impacts of admission to prison mother and baby units (MBUs/separation, c) experiences of pregnancy and prison. Studies published up to July 2017 were included, and ten were reviewed. All received a quality score using QUALSYST. All included studies were undertaken in the United States (US). Findings suggest negative impacts on mental health, but that US prison nurseries have positive impacts, and pregnancy in prison is isolating and traumatic. Future research in England should examine impacts on mental health, mother/child relationships and placement in MBUs/separation.

Keywords: pregnancy, prison, mental health, childbirth

Background

There are currently 12 women’s prisons in England providing for English and Welsh women as there are no women’s prisons in Wales. In the year ending December 2016, 8,447 women were sent to prison (Ministry of Justice, 2017). The average sentence length for women is just 42 days, which, whilst relatively short, may often lead to them losing their homes and possible contact with and custody of their children (Penal Reform International, 2008). In the year to June 2016, 70 per cent of women were serving sentences of six months or less (Ministry of Justice, 2017). Due to the relatively smaller number of women prisoners and prisons, compared to
males, women are more likely to be held further from home with potential negative consequences (Prison Reform Trust, 2010). The average distance from home that women are imprisoned is 60 miles (Women in Prison, 2013), and approximately 19 per cent (753 women) in 2009 were held more than 100 miles from home (Hansard, 2009). This impacts particularly on women with dependent children, especially when those children are very young. For women who give birth whilst in prison, and do not retain custody of their child during imprisonment, this separation may also have long-term consequences for both mother and child.

Just under half (48%) of women released from prison are reconvicted within 12 months. For those serving sentences of 12 months or less, this rises to 61 per cent, and 78 per cent for those who have 11 or more previous custodial sentences (Ministry of Justice, 2017). This rate of reconviction causes further disruption to relationships with families.

**Pregnant women in prison**

Whilst an imprisoned woman’s pregnancy is recorded in individual inmate medical records (if the inmate consents to pregnancy testing), information from the National Offender Management Service (NOMS) and the Ministry of Justice suggests that figures are neither comprehensively collected nor collated for the number of children born to imprisoned mothers, or for the number of women who are pregnant on arrival in prison (C. Robinson, personal communication, May 22, 2014; E. Stradling, personal communication, February 22, 2014). From estimates in 2003, it was reported that 620 women received antenatal care in prison with 169 giving birth during imprisonment (Price, 2005). Figures that are available for the number of
births to women in custody vary, and the most recent estimates are for the years from 2004 to 2008. A Hansard written answer (2005) reported that in 2004, 114 women gave birth whilst imprisoned. The most recent figures suggest that over 100 women give birth in custody each year (Galloway, Haynes & Cuthbert, 2014). That there are no more recent figures is perhaps a reflection of the lack of importance placed on this particular group.

In England, a woman who is sent to prison and gives birth whilst in custody, or shortly before has only two options; to apply for a place with her child in a prison mother and baby unit (MBU), or to have her child placed in alternative care outside prison. Little is known about the impact of being pregnant or giving birth in prison, nor the effects of MBU residence, or separation, for those women who do give birth during imprisonment. From community studies, it is known that depression is more prevalent in mothers of young children than the general population (Brown & Harris, 1978; Centers for Disease Control, 2004-2005; Gaynes, Gavin, Meltzer-Brody, Lohr, Swinson, Gartlehner et al., 2005; Segre, O’Hara, Arndt & Stuart, 2007), and often begins both antenatally and postnatally, but is frequently missed (Brown & Solcahny, 2004; Dennis & Chung-Lee, 2006; Wisner, Peindl, & Hanusa, 1995). There is a 21-times increase of psychosis (Kendell, Chambers, & Platz, 1987) and three times the risk of developing depression (Cox, Murray, & Chapman, 1993) in the initial five weeks post-partum compared with the general population.

It is also known that the prevalence of mental disorder in prisoners is much higher than that found in comparable groups in the community (Birmingham, Mason, & Grubin, 1996; Maden, Taylor, Brooke, & Gunn, 1995; Ministry of Justice, 2013; Office
for National Statistics, 1998; Prisons and Probation Ombudsman, 2016) and rates are higher in women prisoners compared with men (Office for National Statistics, 1998; Ministry of Justice, 2013). There has been little research on the mental health of pregnant women and mothers in prison. Birmingham et al. (2006) found that 60% of mothers in MBUs had some kind of mental disorder (Birmingham et al., 2006), and mothers in prison who are separated from their babies have yet higher rates of mental disorder than those in prison MBUs, of around 90 per cent (Gregoire et al., 2010). The combination of elevated risk of mental disorder in pregnancy and elevated risk in prisoners means that pregnant women and new mothers in prison are at much greater risk of developing or exacerbating mental health disorders, and yet little attention has been paid to this in the literature to date.

The focus of much of the research on the impacts of pregnancy in prison to date has explored health outcomes and legal issues (Bard, Knight & Plugge, 2016), and very little has been carried out in the UK. Although lower levels of mental disorder were found in mothers in prison mother and baby units than in separated mothers or the wider female prison population, it is not known if these differences were a result of pre-existing factors or a result of MBU residence (Gregoire et al. 2010), and the majority of the women who participated in these studies did not give birth in prison. Only one study has looked at the impact of prison MBU residence in England post-release (Dolan, Birmingham, Mullee & Gregoire, 2013). This study compared outcomes for women who had been admitted to prison MBUs in England with those who had not post-release, and found that women who had been in MBUs were much more likely to retain custody of their child and any subsequent children post-release and significantly less likely to have re-offended. Those who had spent time in MBUs
were also less likely to be misusing drugs or alcohol post-release or to be experiencing mental health problems. This study has similar limitations to the previous two studies, in that there may have been pre-existing or post-release factors that contributed to the better outcomes in those who had been in MBUs, and that many of the women who participated had not given birth in prison. None of these studies looked specifically at pregnancy in prison, the experience or the impact this has on women.

There are some systematic reviews that have looked at the effects of imprisonment during pregnancy. In their systematic review of research into the impact of imprisonment on birth outcomes, Knight and Plugge (2005) included 1504 imprisoned pregnant women. They were more likely to be single, from an ethnic minority, and more likely to have a medical issue that might impact pregnancy outcome, but less likely to receive sufficient antenatal care, when compared with 4571 pregnant women in the community. The majority of included studies were from the United States of America (USA). This review concluded that although the maternal health care needs are higher, they are currently not being met in this population. In a systematic UK policy review of mother-infant separations in prison focusing on attachment (Powell, Marzano & Ciclitira, 2016), 58 policy documents were reviewed and thematically analysed. It was found that whilst attachment was implicitly referred to in most documents, only four explicitly referred to attachment. ‘Separation as trauma’ was a prevalent theme, as was ‘distress’ and ‘mental torture’ but there was little advice on what could be done either practically or theoretically to support women, despite the negative impact on mental health and increased risk of suicide.
These findings suggest that whilst there is some acknowledgement of separation as an issue, there is little coherent policy on how to support these women post-separation. In a systematic review of the prevalence of mental disorder in pregnant women in prison (Mukherjee, Pierre-Victor, Bahelah & Madhivananan, 2014) high levels of tobacco use were reported (50-88%) as well as high levels of substance misuse (25-85%). Prevalence of depression ranged between 77 and 80 per cent, and anxiety between 30 and 50 per cent. They conclude that the high levels of mental health issues are a cause for concern, but that they are not being adequately addressed. The majority of studies included in the review were from the USA, and supported previous findings in this area, but do not cover the impact of pregnancy and imprisonment on mental health specifically.

A search of the literature suggests there is only limited research on the mental health impacts of imprisonment during pregnancy and of women’s experiences of pregnancy and imprisonment. There has been some research on mothers’ experiences of prison MBU or nursery residence and the impacts of separation, but no systematic reviews of these areas of the literature to date. To understand the impacts of imprisonment on pregnant women, the impacts of prison MBUs/nurseries and separation, and the lived experience of this group, this review examined and synthesised the research in this area to date, to enable consideration of the implications for future research, practice and policy.
Aim

To answer the following research questions:

What are the mental health impacts of pregnancy and childbirth during imprisonment?

What are the positive and negative consequences of a) prison mother and baby units/prison nurseries or b) separation from their children on new mothers in prison?

How do women describe their experience of pregnancy, childbirth and motherhood in prison?

Methods

Design

A mixed methods systematic review was undertaken, including both quantitative and qualitative literature, an approach which it is suggested is best suited to questions that are ‘broad and complex’ (Tariq & Woodman, 2013). Single method reviews are often too narrow in focus to allow findings to be converted into policy and practice (Pearson, White, Bath-Hextall, Salmond, Apostolo & Kirkpatrick, 2015), and using a mixed method approach can address this issue. Mixed methods systematic reviews are suited to social sciences research as there may often be a variety of research methods as well as diverse methodological and theoretical approaches (Sandalowski, 2006). These can be addressed with a mixed methods approach, allowing questions to be answered more relevantly as well as maintaining the integrity of the findings from different types of studies (Harden, 2010), and providing more contextualised findings (Pearson et al., 2015). For the purposes of
the current systematic review, this was considered the most appropriate approach, because of the wide scope of the review and the small number of studies with different methodologies.

**Search strategy**

An extensive electronic search strategy was utilised to identify the studies that met the inclusion criteria (See Table 1) for the review. The search was not restricted by a start date, because of the limited previous research in this area, and the full search was completed by 31st July 2017. Endnote was used to manage the search results. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed in conducting the search (Moher, Liberati, Tetzlaff & Altman, 2009). Literature searches were carried out of the following databases; Medline—biomedical information, CINAHL—nursing literature, Psychinfo—psychology and psychiatry literature, EMBASE—biomedical and pharmacological database, Campbell Collaboration - randomised controlled trials and systematic reviews in the areas of social welfare, crime and justice and education, ASSIA—Applied Social Sciences Abstracts, PubMed, Cochrane, National Criminal Justice Reference Service Abstracts Database.
### Table 1 Inclusion and exclusion criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria: (All of the criteria)</th>
<th>Exclusion Criteria: (At least one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. published in English</td>
<td>1. not published in English</td>
</tr>
<tr>
<td>2. participants were women in prison</td>
<td>2. case studies or systematic reviews</td>
</tr>
<tr>
<td>3. participants were pregnant or had given birth in custody</td>
<td>3. no useful data could be extracted</td>
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<tr>
<td>4. peer reviewed</td>
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<tr>
<td>5. qualitative, quantitative or mixed methods</td>
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</table>

Titles and abstracts were screened for research that contained data relating to pregnancy in prison, childbirth in custody, impacts of prison MBUs/nursery programmes (see Box 1 for search terms). All abstracts that were in English and indicated that they might include data relevant to the research questions were included and the full text was then retrieved. Grey literature was identified through searching reference lists from the papers identified in the database searching to identify any further papers that might be relevant, and a general search was undertaken of the internet using Google, using the same search terms.

**Box 1 Search terms used**

| Perinatal OR pregnant OR pregnancy OR childbirth OR antenatal OR pregnant women OR postnatal AND Prison OR imprisonment OR incarceration OR jail OR inmate AND mental health OR mental disorder OR mental illness OR depression OR experience |
**Selection and critical appraisal of papers**

An initial screening of titles and abstracts meeting the inclusion criteria (Table 1) was undertaken by the lead author. A second researcher confirmed the inclusion or exclusion of each of these studies, in order to assess relevance. If relevance was not clear or the abstract was unavailable, then the full article was retrieved for review. Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (Kmet, Lee & Cook, 2004) was used to assess the quality of the cohort and qualitative studies, and a quality score was assigned to each paper. The full texts of the studies that met the inclusion criteria were retrieved and screened according to the inclusion criteria. Quality appraisal was carried out independently by two researchers. Any disagreements were resolved through discussion between the lead author and the second researcher.

**Data abstraction and synthesis**

A data abstraction tool developed by Adams, White, Moffatt, Howel and Mackintosh (2006) was modified for the current review, and the following information was extracted from the studies; author(s) and publication date, location, title, design/methods, sampling approach, analysis, sample characteristics, main relevant findings. This was then checked by a second researcher. Disagreements were resolved through discussion.

Due to the limited previous research in this area, and the variety of methodologies utilised, as well as the scope of the research questions, a narrative research synthesis was adopted. Narrative synthesis adopts a textual approach to synthesising the findings from the studies included in the review. In this case, because of the wide
scope of the topic and variety of approaches, it was deemed the most appropriate in order to ‘tell the story’ of pregnancy, childbirth, separation and motherhood in prison and the psychological impacts. Results were summarised, compared and contrasted in terms of the aims, methods and results. Where possible, information was summarised across studies.

Quality assessment of studies

Articles were assessed and assigned a quality score using the quality assessment tool QUALSYS from the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (Kmet et al., 2004). This tool was used because of the wide variety of disciplines and methodologies the research came from. Different criteria are included in QUALSYS for quantitative and qualitative studies, and the quantitative criteria were adapted for the purposes of the current study, as per the instructions of the authors of QUALSYS. None of the studies included utilised a randomised controlled trial (RCT) approach, and so the two questions relating to these were not included. These checklists can be seen in Table 2. The maximum possible score for quantitative studies was 22 and for qualitative 20, with two points being allocated for each of the criteria the article met, one point allocated if it was partially met, and 0 if the criteria was not met. Scoring was carried out independently by the two researchers (both the lead author and a second researcher), and in cases of disagreement, scores were discussed, and a consensus was reached. If criteria were not applicable to a study design, these were labelled ‘non-applicable’ and not included in the calculation of the total score. For quantitative studies a minimum of nine items needed to be applicable and for the
qualitative studies a minimum of eight items. The one mixed methods study included was assessed using both checklists, and a mean score was derived from this. In order to extract comparable scores for the quantitative and qualitative studies, totals were added, then divided by the total number of items, and then converted to a percentage of the maximum possible score, as in other systematic reviews (D’Haese, Vanwolleghem, Hinckson, De Bourdeaudhuij, Deforche, Van Dyck & Cardon, 2015). Regardless of overall scores all studies that met the criteria were retained in the review because of the limited research in this area.

Table 2 Checklists for quantitative and qualitative papers

<table>
<thead>
<tr>
<th>Checklist for assessing the quality of quantitative studies</th>
<th>Checklist for assessing the quality of qualitative studies</th>
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<tbody>
<tr>
<td>1. Question / objective sufficiently described?</td>
<td>1. Question / objective sufficiently described?</td>
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<tr>
<td>2. Study design evident and appropriate?</td>
<td>2. Study design evident and appropriate?</td>
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<tr>
<td>3. Method of subject / comparison group selection or source of information/input variables described and appropriate?</td>
<td>3. Context for the study clear?</td>
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<tr>
<td>4. Subject (and comparison group, if applicable) characteristics sufficiently described?</td>
<td>4. Connection to a theoretical framework / wider body of knowledge?</td>
</tr>
<tr>
<td>5. Outcome and (if applicable) exposure measure(s) well defined and robust to measurement / misclassification bias? means of assessment reported?</td>
<td>5. Sampling strategy described, relevant and justified?</td>
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<tr>
<td>6. Sample size appropriate?</td>
<td>6. Data collection methods clearly described and systematic?</td>
</tr>
<tr>
<td>7. Analytic methods described / justified and appropriate?</td>
<td>7. Data analysis clearly described and systematic?</td>
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<tr>
<td>8. Some estimate of variance is reported for the main results?</td>
<td>8. Use of verification procedure(s) to establish credibility?</td>
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<td>9. Conclusions supported by the results?</td>
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<td>10. Reflexivity of the account?</td>
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</table>
Results

Studies identified and search outcome

Figure 1 provides a summary of the research process. The initial search identified a total of 6492 papers from all databases and a further 17 from grey literature searches. Of these, 4022 were duplicates which were then removed. A review of title and abstract only led to the exclusion of a further 2440 papers. Once the inclusion and exclusion criteria were applied a further 37 were excluded. A total of 10 papers met the review criteria and were included in the synthesis. Five of the studies were quantitative, four were qualitative, and one was mixed methods.

The characteristics, quality and findings of the quantitative papers are summarised in Table 3, the qualitative papers on Table 4, and the mixed method paper in Table 5. All the papers included were from the USA.
Figure 1. The search process

Records identified through database searching - 6492

Additional records identified through other sources - 17

Records after duplicates removed (n = 2487)

Records screened (n = 2487)

Records excluded (n = 2440)

Full-text articles assessed for eligibility (n = 47)

Studies included in quantitative synthesis 5

Studies included in qualitative synthesis 4

Full-text articles excluded, with reasons
Wrong focus: 20
Not published in English: 4
Single case study: 3
Not pregnant women in prison specific: 3
Wrong design: 2
Data not yet collected: 1

Studies included in mixed methods synthesis 1
<table>
<thead>
<tr>
<th>Author/year/ location</th>
<th>Title</th>
<th>Design/ methods</th>
<th>Sampling approach</th>
<th>Analysis</th>
<th>Sample characteristics</th>
<th>Quality score (%)</th>
<th>Main relevant findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlson (1998) USA</td>
<td>Evaluating the effectiveness of a live-in nursery within a women’s prison</td>
<td>Descriptive/ cross-sectional survey</td>
<td>All women from one Nebraska prison nursery programme from 1994-1999 were included</td>
<td>Descriptive</td>
<td>n=24, mean age 25.6 years old, White 74%, Black 26%, Single 58%, Married / Common Law 42%. 47% had previously been in prison</td>
<td>41</td>
<td>Residence in prison nursery had positive impacts on mother/child attachment (73%), self-confidence, self-esteem, and 13% reduction in misconduct reports. Low recidivism rate (5%), compared to women separated from their children</td>
</tr>
<tr>
<td>Carlson (2001) USA</td>
<td>Prison nursery 2000: a five-year review of the prison nursery at Nebraska Correctional Center for Women</td>
<td>Descriptive/ narrative and cross-sectional survey. Misconduct and recidivism data collected from prison/criminal justice records. Survey collected information on attachment</td>
<td>All women from one Nebraska prison nursery programme from 1994-1999 were included</td>
<td>Descriptive</td>
<td>Records data n=44, 51.3%, White 35.9%, Black 10.2%, American Indian and Hispanic 2%, mean age 25.6 years old 60.5%, Single 13.1%, Divorced 18.4%, Married / Common Law 7.8%, Mean number of children 3.16, 59% of women had previously been in prison Survey data n=37.</td>
<td>45</td>
<td>Decrease in misconduct reports and reduced recidivism in those who completed the programme (9%), compared with 30 inmates who had babies prior to the implementation of the nursery programme (33% recidivism rate). No women in the prison nursery tested positive for drugs in the 5 years that data was examined.</td>
</tr>
<tr>
<td>Fogel (1993)</td>
<td>Descriptive correlational study. Risk factor and pregnancy outcome measure designed by researcher. Depression measured using the Center for Epidemiological Studies-Depression (CES-D) and state anxiety using the Spielberger State Trait Anxiety Inventory (STAI) — State Anxiety Subscale. Incarcerated women from one women’s correctional facility in a Southern State. All eligible women (pregnant inmates) invited to participate.</td>
<td>n=89, White 36%, Black 60.6%, American Indian 3.4%, Mean age 24.12 years old, Single 47.2%, Separated / divorced 20.2%, Married / co-habiting 31.5%</td>
<td>At least 57% (25) of women released from the prison nursery had maintained custody of their child post-release. 95% reported feeling they had a stronger bond with their child because of nursery residence. 49% reported they had greater self-confidence and greater self-esteem as a result of the programme. 10 (11.8%) had some form of psychiatric disorder, and high levels of anxiety in the third trimester (1standard deviation above norm for working women). Seventy-seven percent reported depressive symptoms higher than level indicative of clinical depression. Almost 40% reported no social support</td>
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<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Methodology</td>
<td>Sample</td>
<td>Findings</td>
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<tr>
<td>Fogel &amp; Belyea (2001) USA</td>
<td>Psychosocial risk factors in pregnant inmates: A challenge for nursing</td>
<td>Prospective, descriptive. Part of a larger study of incarcerated mothers and children. Researcher designed measures used to collect demographic data, experience of violence and substance misuse. Parenting attitudes measured using Adult-Adolescent Parenting Inventory (AAPI). CES-D used to measure depressive symptoms. Perceived Stress Scale (PSS) used to measure general stress. Norbeck Social Support Questionnaire (NSSQ), used to measure social support.</td>
<td>All pregnant women from one maximum security prison, in third trimester of pregnancy who planned to retain custody of child were eligible and asked to participate.</td>
<td>Descriptive statistics and correlation n=63, African American 63.1%, Caucasian 30.8%</td>
<td>Over 70% reported depressive symptoms above level indicative of clinical depression. High levels of stress also reported. Social support levels reported as below norms found in college students and adult women. Average levels of social support similar to those of low-income women.</td>
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<tr>
<td>Goshin, Byrne &amp; Henninger (2013) USA</td>
<td>Recidivism after release from a prison nursery programme</td>
<td>Quantitative descriptive. Participants from two larger cross-sectional studies.</td>
<td>Convenience sample of women enrolled on a prison nursery programme in New York State</td>
<td>Survival analysis n=139, Women of Colour 96 (69%), White Non-Latina, 43 (31%)</td>
<td>75% reported clinically significant depressive symptoms at some point during prison nursery stay. 86.3% of women</td>
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</tbody>
</table>
Recidivism defined as return to prison within 3 years of release.
Demographic data obtained from State Division of Criminal Justice database.
Depression measured using Center for Epidemiologic Studies-Depression Scale (CES-D).
Substance dependence history obtained from participant interviews and prison records.

remained in the community 3 years post release, therefore a low possibility of recidivism for new offences and parole violations (4.3%; 9.4%), compared to women from general prison population (8.9%; 20.4%)
<table>
<thead>
<tr>
<th>Author/year/location</th>
<th>Title</th>
<th>Design/methods</th>
<th>Sampling approach</th>
<th>Analysis</th>
<th>Sample characteristics</th>
<th>Quality score (%)</th>
<th>Main relevant findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chambers (2009) USA</td>
<td>Impact of forced separation policy on incarcerated postpartum mothers</td>
<td>Exploratory study using a constructivist enquiry framework. Data collected via semi-structured interviews of approximately 30-40 minutes, and transcribed</td>
<td>Purposive. Postpartum Inmates admitted to Texas prison hospital</td>
<td>Content &amp; thematic analysis</td>
<td>n=22, age range 22-36 years old, Black / African American 7, White 3, Black / Indian 1, White / American Indian 1.</td>
<td>80</td>
<td>Four main themes related to pregnancy and childbirth in prison: A love connection (with unborn child), everything was great until I birthed (loss of connection with baby post-birth), feeling empty and missing a part of me (loss of baby), I don’t try to think too far in advance (post-partum strategy to psychologically adjust to separation)</td>
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<tr>
<td>Fritz &amp; Whiteacre (2016) USA</td>
<td>Prison nurseries: Experiences of incarcerated women during pregnancy</td>
<td>Qualitative interviews. Conducted by one researcher, 35 minutes to 2 hours in length, focussed on current living situation, criminal histories, prenatal experiences, incarcerated birth and postpartum experiences</td>
<td>Convenience. Contacted women who had entered a prison nursery over a 4 year period and women who would have been eligible but were in prison prior to the nursery opening. All who replied participated</td>
<td>Qualitative. Open coding axial coding, and selective coding to identify a core variable to construct an overall narrative of the findings</td>
<td>n=27 (15 nursery group, 12 non-nursery group), mean age 29-30 years old, African American 31%, Caucasian 69%</td>
<td>55</td>
<td>Majority reported negative prenatal care and birth experience as traumatic. Poor communication and delays in care contributed to negative experiences. Majority reported no support from family/friends during labour, and worried about separation and use of restraints prior to birth. Experience of separation was main difference between the two groups,</td>
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<tr>
<td>Study</td>
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<td>Shelton &amp; Gill (1989) USA</td>
<td>Childbearing in prison: A behavioural analysis</td>
<td>Ethnographic study. Data collected using semi-structured 1-2 hours interviews to collect information on feelings and perspectives on pregnancy in prison, and chart review for birth complications</td>
<td>Volunteer sample of women in the last trimester of pregnancy in two women’s correctional centres, who expected to deliver while in custody</td>
<td>45 women, mean age 26 years old, 13 White, 10 Black, 2 Native American</td>
<td>All women perceived experience of being pregnant in prison as negative. All expressed ‘anger, regret, and depression’ due to separation from their infants. Pregnancy or birth complications were reported in 20 of the 25 participants, but no comparisons were made with a control group</td>
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<td>Wiseman (2000) USA</td>
<td>The lived experience of women in prison</td>
<td>Phenomenology (interviews and journals). Journals given to participants to record their thoughts and feelings. Questions to guide participants were written inside. Journal entries were transcribed and peer</td>
<td>Purposive, pregnant women at maximum security prison who would be in custody at estimated delivery date</td>
<td>70 women, age range 18-33 years old, ‘Women of colour’ (African American, Hispanic, American Indian) 58%, Non-Hispanic white 42%</td>
<td>Four themes related to experience of childbirth in prison identified: Apprehension (well-being of baby and separation), grief (anticipated separation), subjugation (physical and mental)</td>
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reviewed in interviews, for clarification and expansion

emotional isolation and lack of autonomy, relatedness (positive energy from connectedness to foetus and self)
Table 5 Characteristics, quality appraisal, and key findings of mixed method studies

<table>
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<tr>
<th>Author/year/location</th>
<th>Title</th>
<th>Design/methods</th>
<th>Sampling approach</th>
<th>Analysis</th>
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<tr>
<td><strong>Hutchinson, Moore, Propper &amp; Mariaskin (2008) USA</strong></td>
<td>Incarcerated women's psychological functioning during pregnancy</td>
<td>Mixed methods, exploratory, descriptive, phenomenological. Qualitative one-to-one semi-structured interviews, carried out by trained interviewers, to collect demographic information and narratives of experiences of pregnancy during incarceration. Focused on topic areas identified from previous research, and discussions with staff. Quantitative measures – Brief Symptom Inventory (BSI), Beck Depression Inventory (BDI-II), Parent Bonding Inventory (PBI)</td>
<td>Inmates at a state correctional institution for women. Purposive sampling – participants were either pregnant (n=21) or had given birth in the two months prior to data collection (n=4)</td>
<td>Coding and analysis using thematic assessment qualitative technique. 25% of the transcripts coded by two coders, to ensure inter-coder reliability</td>
<td>n=25, European American 14, African American 11, mean age 27.7 years old, 21 pregnant and 4 had given birth in the two months prior to the interview</td>
<td>62</td>
<td>Participants concerned about attachment and reunification, visitation and contact with infants. The main coping strategy was distraction and denial (75%). Sad and stressed about post-birth separation. Complained that incarceration exacerbated pregnancy symptoms (58%) e.g. fatigue, hunger and heat, but many also felt it had positive impacts (54%). High levels of depression, hostility. BDI-II scores significantly positively correlated with fear of separation, jealousy/ambivalence towards substitute caregiver, coping, limited contact, and desire not to be separated. Mean PBI warmth/care score fell in the low warmth category,</td>
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and was negatively correlated BSI subscales of interpersonal sensitivity, anxiety and hostility and with frequency of discussing plans to reunify.
Findings

Impact of prison mother and baby units/prison nurseries for new mothers in prison

Studies generally reported positive impacts of prison nurseries, on attachment, recidivism and psychological well-being. The two studies by Carlson (1998; 2001), explored the impact of prison nursery residence in Nebraska Correctional Center, over a five-year period. They reported improved mother-child attachment (73% in the first study and 95% in the second study), a reported drop of 13 per cent in misconduct reports for pregnant women admitted to the nursery programme, and a lower recidivism rate for all women who had entered the nursery programme between 1994 and 1999 of 9 per cent, compared with a rate of 33.3 per cent for women who were separated from their babies, prior to the establishment of the prison nursery programme. It was also reported that prison nursery residence had increased levels of self-confidence and self-esteem. However, there are a number of limitations to these findings.

Both of these studies lack a clearly explained methodology and analyses, and therefore are difficult to replicate. Additionally, both studies were undertaken in only one prison nursery, and have relatively small sample sizes (n=24; n=44), limiting the power and generalisability of the findings. They also do not control for any pre-existing factors that might have impacted on the findings. Mother/child attachment was measured via asking the women if they felt they had bonded with their child and whether they had retained custody post-release, and did not use a standardised measure, limiting the validity of this finding. Social desirability would likely affect a woman’s response to whether or not she had bonded with her child, particularly if
she were still in a prison nursery, where there might be an increased fear of being judged on parenting and attachment. Long-term custody of children does not necessarily represent a strong and healthy attachment. Participants from the prison nursery programme had not been out of prison for as long as those in the comparison group when recidivism was measured, as the non-nursery group were women who had given birth to children at the prison prior to 1994 when the nursery was established. As they were measured at two different time points post release, recidivism rates were not comparable, and for some of those women released from the prison nursery data were collected less than three years post-release. Standardised measures were not used to measure self-confidence and self-esteem, again limiting the validity of the results. Despite the limitations to these studies, the prison nursery programme was generally perceived as having positive impacts from the perspective of the women. The studies provide an indication that prison nurseries may reduce recidivism, and this is a finding supported by other research (Dolan et al., 2013).

Goshin, Byrne and Henninger (2013), offer additional support for Carlson’s findings on recidivism. They looked at recidivism post-release from one prison nursery programme in a sample 139 women who had given birth in prison. The study reported that the ninety-three of the women (67%) had left prison with their babies. For those women who were separated, it was because their sentence was longer than the maximum age that their child could remain with them in prison (one year). Three years post-release the 120 of the women released from custody and who had spent some or all of that sentence in a prison nursery (86.3%) had remained in the community. Those who returned to prison were more likely to do so because of a
parole violation, rather than a new crime (74.1%). Recidivism data for women from the prison nursery was gathered over a six-year period and was reported at 4.3 per cent for new offences and 9.4 per cent for parole violations. The rate of recidivism for the general female population of the same prison from the same year was 20.4 per cent (Department of Corrections and Community Supervision, 2011 as cited in Goshin et al., 2013), supporting previous findings that prison nurseries may reduce recidivism.

In this study, there is little analysis of other factors at baseline which may affect recidivism and the study is also restricted to two prison nurseries in one state, limiting generalisability. There is likely selection bias due to nursery admission criteria which may exclude women who are more likely to recidivate. Whilst comparison with the general prison population offers some insight into possible impacts, it does not take into account different sample characteristics and pre-existing factors that might increase possibility of acceptance in the prison nursery, nor post-release factors. A control group of similar pregnant women who were not admitted to a prison nursery was not available.

All three of these studies, offer some evidence for the positive impacts of prison nurseries, but are limited because of the lack of control groups or of baseline measures. Comparing recidivism rates for women who are granted a place in a prison nursery with those of women in the general prison population does not take into account differing sample characteristics, pre-existing factors that mean women may be more likely to be given a place in a prison nursery, and therefore may also be less likely to subsequently reoffend (e.g. first offence, non-violent crime, no substance
misuse issues). They also do not take into account post-release factors that may also influence recidivism rates (e.g. family support, employment prospects). Finally, whilst recidivism is an important measure of the impact of prison nursery and MBU programmes, it should not be the only one. The Carlson studies touched on some of the mental health impacts, but failed to use valid and reliable measurements that would support convincing arguments of positive mental health impacts.

**The experience of pregnancy, childbirth and motherhood in prison and the impact of separation**

Fritz and Whiteacre (2016) explored the prenatal, birth and postpartum experiences of pregnant incarcerated women. They compared women who had and had not been admitted to a prison nursery in an Indiana Women’s Prison. The two groups of participants were similar on the demographic variables measured, and on criminogenic variables. The study found that women generally had negative experiences of prenatal care and traumatic birth experiences. The majority of women had no support from family or friends during labour, and had concerns about the use of restraints during labour and childbirth. The main difference between the two groups was the experience of separation, as 15 of the 27 participants did not experience separation. One limitation of this study was that data was collected from participants post-release, so the interviewees were reliant on the memory of their experience rather than their current lived experience. In addition, the length of time between release from prison and interview varied between 6 weeks and 6.5 years, so the quality of memory would have been much poorer for some participants. The response rate of only 14 per cent of those contacted makes it likely that it was not a
representative sample. Participants who had and had not been resident in the prison
nursery served their sentences at different times, therefore some factors may have
changed, and were not taken into account. Although the procedure and the steps of
the analysis are outlined, there is no clear description of the methodology.

Shelton and Gill (1989) reported on the overwhelmingly negative experience of
women who were pregnant and in prison. They carried out an ethnographic study
with 26 participants and, similar to Fritz and Whiteacre (2016), found that women
were both dissatisfied with the perinatal health care they received and that the
majority had no support when they gave birth. They also expressed feelings of anger,
regret and depression due to the imminent separation from their unborn children as
all were due to be separated from their babies shortly after birth. Whilst this was an
ethnographic study, the design was not clearly outlined, and it is not clear how the
data were analysed. The results only included the experiences of four
‘representative’ women out of a sample of 26. It was not clear why the results were
presented in this way, or how the four women’s experiences were identified as
representative. The findings also report birth complications in the majority of
participants, but does not detail what these were.

Despite the fact that in the United States (US) and many other countries there are
only limited opportunities to maintain custody of a baby born during a period of
imprisonment, there is limited research on the impact of separation in this context.
Chambers (2009) study was a qualitative exploration of the impacts of separation on
mothers. In 2009 when this research was carried out, only nine US states had, or
were planning a prison nursery programme. In the Texas prison where this study was
carried out, mothers and babies are separated immediately after birth. Babies leave the attached prison hospital two to three days after birth and mothers are reunited with them prior to their own release from prison. Despite being separated from family and in prison the women in the study reported that the ‘love connection’ (attachment), they felt with their unborn child meant that their experience of being pregnant and in prison was in fact a positive one, but knowledge that they would be separated postpartum led to feelings of ‘great loss and worry’ (Chambers, 2009 pp. 6). This contradicts the findings of Fritz and Whiteacre (2016) and Shelton and Gill (1989) that pregnancy in prison is a purely negative experience and suggests it may provoke more complex emotions. Separation led to emotional pain, but women believed they would be united after release, and this brought some comfort. Again, this study only involved participants from one prison and lacked a comparison group of women who were not separated. No measures of verification to establish credibility were reported, and therefore it is not clear how robust the data collection and analysis were. It is also not reported how long women spent with their babies prior to separation or the impact of the time that they did spend with their babies. In the Fritz and Whiteacre (2016) study, women had their child removed 24 and 72 hours postpartum, depending on the type of birth and recovery time necessary. This experience was described as traumatic but was influenced by how it was managed by the guards. Negative attitudes from guards contributed to the level of distress the women experienced. Knowing that they would be separated also reduced the likelihood that women would choose to breastfeed, despite provision for women to send breast milk out post-separation. Shelton and Gill (1989) in their study reported that women were angry, regretful and depressed about separation from their
infants. Women were unable to bond with their children and mothers of babies sent to the neonatal intensive care unit were particularly angry that they were allowed no contact.

Wismont (2000) also reported dissatisfaction with perinatal health care, including delays, as well as apprehension about the impending separation during pregnancy and many felt stress was one of the factors that had a negative effect on their unborn child. Participants were also very concerned about finding a suitable caregiver for their child, and expressed extreme sadness about their impending separation, and not being allowed to care for their child. Women also felt very isolated, both physically and emotionally, and felt they had no control over their pregnancy. The majority of participants reported that they felt affection for their unborn child, but three of them felt little or no affection, possibly because of the imminent separation. For those who did feel a connection, this made them feel less alone in the circumstances than they might otherwise have done. Hutchinson, Moore, Propper and Mariaskin (2008) echoed these findings on fear and apprehension about separation. In their study mothers and babies were separated between 24 and 48 hours after birth. Participants expressed concerns about whether or not their children would remember them and about who would care for their child until they were released, and there were concerns about limits to visits post-separation because of the distance many women were from their children’s proposed caregivers. Again, women reported feeling lonely with very little social support. In terms of how they felt about the experience of pregnancy in prison, their response was mixed, similar to the Chambers (2009) study. The majority (58%) felt their pregnancy could have been better if they had been in the community, but it was not
clear why, whilst others felt their incarceration had had a positive impact on their pregnancy, because of opportunities for education and drug treatment, and being able to avoid drugs and alcohol. Women’s experience of prison nursery residence was generally positive, which is similar to the findings of Fritz and Whiteacre (2016), where women reported that staff were caring and that overall the nursery experience was a positive one, and one that could make a difference to the women. Wismount (2000) originally intended to carry out interviews with participants, but the prison would not agree to this and so data was recorded in journals. Whilst this allowed women to record their feelings in diary form, it also limited participation to those who were literate, levels of which are lower in prison than the community. It also would limit accounts depending on level of literacy. As with the other studies discussed, participants were all from one prison, limiting the applicability of findings to this one setting.

Mental health impacts of pregnancy and childbirth during imprisonment

There is little information available on the mental health impacts of pregnancy and childbirth in prison, and where there is consideration of mental health, it is often a small part of a study focussing primarily on other issues. Of the studies reporting upon the impacts of imprisonment on the mental health of pregnant women, it is difficult to establish if those problems pre-dated the pregnancy and imprisonment. Fogel (1993) measured state anxiety and depression levels in 89 pregnant women in a maximum-security prison in the Southern USA. Using the State-Trait Anxiety Inventory (STAI-S; Spielberger, 1983), they found a mean anxiety score of 43.37 (SD = 7.03) with almost one third (30%) scoring one standard deviation higher than the
population norm for adult working women of 46. Scores above the established female norm suggest high levels of anxiety. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was used to measure depression with 77 per cent reporting symptoms indicating they were above the threshold for clinical depression. In a later study of 63 incarcerated pregnant women in the third trimester, Fogel and Belyea (2001) reported similar findings. Depression was again measured using the CES-D and stress was measured using the Perceived Stress Scale (PSS, Cohen, Kamarak & Mermelstein, 1983). Depression symptoms above the threshold for clinical depression were found in over 70 per cent of participants, and high levels of stress in the last month were reported (mean = 27.2, SD = 9.35). Whilst these two studies present a picture of high levels of depression and stress/anxiety in pregnant women in prison, the lack of baseline data (i.e. pre-prison/pre-pregnancy data), or lack of a control group make it impossible to assess how much of the reported levels of depression and stress/anxiety are due to being incarcerated during pregnancy and how much is due to other factors, whether these mental health problems existed prior to incarceration or if symptoms were exacerbated by this. In addition, not all the measures used were standardised measures (those for risk factor and pregnancy outcome, experience of violence and substance misuse were designed by the researcher), and neither study describes the analysis in sufficient detail.

In their mixed method study, Hutchinson et al. (2008) also reported elevated levels of depression according to mean scores on the Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996), and found that these scores were significantly positively correlated with a number of factors, including; fear of separation and not wanting
this to happen, jealousy/ambivalence towards the proposed caregiver and limits placed on phone contact and visits, suggesting that these may be some of the specific factors that contribute to these raised levels. The main aim of the Hutchinson et al. (2008) study was to assess pregnant women’s recall of relationships with their mothers, in relation to their psychological experiences when incarcerated, and to identify common and unique experiences of incarcerated pregnant women. However, the objectives related to the quantitative measures were not clearly stated, and the methods and analysis lacked detail. Whilst correlations are reported between variables measured using qualitative measures with variables using quantitative measures the procedure for converting the qualitative results for quantitative analysis is not outlined, and it is therefore not possible to evaluate the validity of the results. The small sample size of 25 further limits any conclusions that can be drawn from the correlations, and the generalisability of the quantitative findings.

**Discussion**

This systematic review was carried out to review the limited research to date on the impact of being pregnant in prison on mental health, particularly the effects of MBU admission and separation, and how women describe their experience of pregnancy and prison. All of the studies included in this systematic review were carried out in the USA, which limits the generalisability to other countries and settings. Whilst there is some research with mothers in prison in England, it is very limited, and there is no published research focussing on the mental health of pregnant women and experiences of pregnant women. Quality scores were converted to percentages and
for the five quantitative studies included scores ranged from 41 to 91 per cent. For the four qualitative studies included, scores ranged from 45 to 80 per cent, and for the one mixed methods study the score was 62 per cent. The main reasons for the low scores were methodological issues and incomplete reporting of the analysis and methods. In the USA only women who give birth whilst in custody can apply to stay in a prison nursery with their baby. In England women can apply to bring in a child from the community if they are under the age of 18-months, so the samples in previous research in the UK (Birmingham et al., 2006; Dolan et al., 2013; Gregoire et al., 2010) have looked at women who are imprisoned and are mothers of babies under the age of 18-months. These studies did not meet the criteria for the current review as they did not differentiate between those who gave birth in custody, and those who gave birth prior to imprisonment, nor did they examine the experience of pregnancy in prison.

Overall, prison nursery residence was reported to have a generally positive impact, with reductions in recidivism and misconduct reports during incarceration, stronger attachment and improved psychological well-being (Carlson, 1998; 2001; Goshin et al., 2013). Some of the measures employed in the Carlson (1998; 2001) studies were unclear, and there was no baseline data on levels of self-confidence and self-esteem, limiting the reliability of these findings. However, the lower recidivism rate is supported by the Goshin et al. (2013) study as well as research carried out with mothers who had and had not resided in prison MBUs in England and Wales (Dolan et al., 2013). There is also other research to suggest that the experience of parenting within the supportive environment of a prison nursery increases secure attachment
(Byrne et al., 2010), and this may impact recidivism, as it has been reported that being a mother alone does not impact recidivism (Robbins, Martin & Surratt, 2009).

Whilst there is limited research on the experience of pregnancy, childbirth, motherhood and separation in prison, the research that does exist provides rich, in-depth accounts of women’s experiences. Unsurprisingly, many women reported negative experiences, particularly in cases of separation/imminent separation. Some of the main themes to emerge from qualitative and mixed method studies were related to poor antenatal care, and birth experiences, grief and trauma, often exacerbated by the attitude of prison guards (Chambers, 2009; Fritz & Whiteacre, 2016; Hutchinson et al., 2008; Shelton & Gill, 1989; Wismont, 2000). Lack of support and feelings of isolation during pregnancy and childbirth were also common themes, with lack of communication playing a major role in this, and this along with the expected separation reduced many women’s intentions to breastfeed (Chambers, 2009; Fritz & Whiteacre, 2016; Wismont, 2000). Shelton and Gill (1989) reported feelings of anger, regret and depression in their sample of women who were all pregnant and then separated from their babies in prison. Whilst the majority of women in these studies felt the experience had been negative, there was a small group in the Hutchinson et al., (2008) study that felt there had been positive impacts of their incarceration during pregnancy, mainly in terms of abstinence from drugs and alcohol. This supports the conclusions of Edge (2006) who suggested prison MBUs offer an opportunity for intervention with a group of women with complex needs and is further supported by the work of Birmingham et al (2006), which reported that prison MBUs offered a supportive environment. The qualitative studies are limited by the small sample sizes, limited number of prisons, and
geographical limitation of only being from one country, but offer valuable insight into the experiences of women in these circumstances.

Methodological issues meant that even the studies that were identified as eligible for inclusion only provide limited information on the mental health impacts of pregnancy and imprisonment. Fogel (1993) and Fogel and Belyea (2001) reported high levels of depression, anxiety and stress, in pregnant women in prison, which were generally higher than those found in community samples. Without baseline data, it is not possible to establish how much of these heightened levels is a direct result of pregnancy during imprisonment. However, in the context of findings from other studies suggesting that pregnancy in prison is generally experienced as having a negative impact, and that both pregnancy (e.g. Brown & Harris, 1978; Cox et al., 1993; Kendall et al., 1987; Wisner et al., 1995) and imprisonment (Birmingham et al., 1996; Maden et al., 1995; Office for National Statistics, 1998) are risk factors for the development or exacerbation of mental health problems, which adds to the body of evidence that suggests negative impacts on mental health. Mothers of young babies in prison have even higher rates of mental disorder than the general female prison population (Birmingham et al., 2006; Gregoire et al., 2010), therefore increased levels of depression and anxiety are a likely outcome of imprisonment during pregnancy. Indeed, Hutchinson et al. (2008) reported significant correlations between negative prison experiences and elevated depression scores. Although these findings are not without limitations, they add to the overall evidence of negative mental health impacts.
Limitations

There are a number of limitations in this review. The studies included employed a wide range of methodological approaches, and were carried out between 1989 and 2016 in different USA states with different policies towards incarcerated pregnant women and new mothers. Due to all the studies being undertaken in one country, this adds further limitations to the generalisability of any findings. The methodological differences meant direct comparisons between studies and meta-syntheses could not be conducted, and limiting this to a purely narrative review. In addition, the majority were cross-sectional, meaning data was only gathered at one single point in time. Whilst the studies which focussed on recidivism (Carlson, 1998; 2001; Goshin et al. 2013) covered periods of three to five years post-release, this is still a relatively short period of time, and does not allow firm conclusions to be made on the longer-term impacts. Only one study included a control group (Fritz & Whiteacre, 2016), but this was a convenience sample, of women over two different time periods, rather than a matched control group, also meaning any conclusions made between women who do and do not enter prison nurseries must be interpreted with caution.

Conclusion and implications

The current systematic review is limited in its application to the experiences of imprisoned pregnant women and new mothers in England, as no eligible studies were identified that had been carried out in this country. All the research is based on prisons and prison nurseries in the US, and is further limited by the extensive methodological issues identified. It therefore does not add to the very limited
literature that exists which focuses specifically on pregnant women in prison in England and the impact of prison MBUs. Polices and practice differ, but there are of course similarities in terms of length of stay in prison nurseries in the USA and prison MBUs in England (12 months in the US and 18-months in the UK), and eligibility criteria. However, a far lower percentage of women in prison will experience separation from their new born infant in England, as there is wider provision of MBUs, compared to the US where many states have no prison nursery provision. Research into the experiences of imprisoned pregnant mothers in England, and the impact of prison MBUs as well as separation on these women should be carried out. The review provides some evidence of the negative impacts of pregnancy and childbearing in prison, both in terms of the overall experience and the possible mental health impacts. In order to establish the full impact on mental health of pregnant women and new mothers in prison, future studies would ideally include baseline measures, and/or control groups. These negative impacts will likely have longer-term impacts on both incarcerated women and their children. The overall picture suggests a need for improved practice in the care of pregnant women and new mothers in prison. Whilst the findings suggest that prison nurseries may reduce recidivism, further research needs to be conducted in this area, to see if these findings can be replicated over time and internationally. There may be specific aspects of the prison nursery regime that contribute to this as well as improving psychological well-being, and future research should explore what these factors may be. Direct comparisons with women who are separated from their children also need to be made with women who are granted a place in a prison MBU or nursery and comparisons made during and after pregnancy. Future research should address
these issues in pregnant women in prison in England, because of the lack of research evidence in this country to date. Research should also focus on the experiences of pregnancy, childbirth and motherhood for women in prison in England, and consider the impacts of both MBU residence and separation from newborn infants.
4. Aims, Objectives and Research Questions

4.1 Aims

1. To describe the socio-demographic background of pregnant women in prison.

2. To establish the prevalence of mental disorder in pregnant women in prison.

3. To identify the factors which influence MBU applications and admissions for pregnant women in prison.

4. To measure the impact of MBU residence and separation on initial outcomes for mother and child.

5. To explore the experiences of pregnancy, childbirth and motherhood and separation whilst imprisoned.

4.2 Objectives

• To describe the socio-demographic and criminogenic characteristics of pregnant women in prison;

• To estimate the prevalence of mental disorder amongst pregnant women in prison, including perinatal depression;

• To identify the factors associated with pregnant women’s applications and admissions to MBUs including individual’s demographic and criminological characteristics, mental health and type of prison;
• To compare women who are and are not admitted to MBUs on presence of mental disorder, personality disorder, demographic and criminological factors and type of prison.

• To measure changes in depression and quality of life in pregnant women in prison pre- and postnatally;

• To examine initial outcomes for women admitted and not admitted to MBUs including quality of life, mental health, and maternal child bonding;

• To document the experiences of being pregnant in prison, giving birth and being a new mother in custody.

4.3 Research Questions

1. What is the socio-demographic background of pregnant women in prison?

2. What is the prevalence of mental disorder in pregnant women in prison?

3. What factors are associated with the decision of pregnant women to apply or not apply for a prison MBU place, and what factors influence the decision to offer applicants a place?

4. What is the impact of placement in an MBU or non-placement on initial outcomes for mother and child?

5. How do women describe their experience of pregnancy, childbirth and motherhood in prison?
5. Methodology

5.1 Introduction

The previous two chapters have highlighted the limited previous research to date on pregnancy, childbirth and motherhood in prison, as well as the complexity of carrying out such research, and how the majority of published studies in this area are focussed on the US. The paucity of such research in England and Wales and the limitations of research carried out in other countries, means the information necessary to inform policy and practice in this area is either unavailable, or very limited. This chapter will outline the background to the current research design, the different research paradigms, and the methodology of the current thesis. It also includes the rationale, the mixed methods design of the current study and details the methodology, its strengths and limitations as well as the methodological issues and obstacles that were encountered during data collection.

All research has underlying philosophical assumptions in terms of what is valid research and which methods are appropriate for the research question(s). In order to design an appropriate study, it is necessary to consider the philosophical and theoretical underpinnings in order to identify and justify the most appropriate approach to the study. This chapter outlines the positivist and constructivist paradigms and the quantitative and qualitative approaches. It also discusses the use of the pragmatic paradigm and mixed methods approaches and the underlying theory. The strengths and limitations of the different approaches will also be discussed. In addition, the methodology, design, materials, data collection and analysis used in the current study will be outlined.
The current study adopted a mixed methods design, employing both quantitative and qualitative methods. Quantitative measures, including questionnaires were used to collect data on demographics, offending history, mental health, and MBU applications. Data on women’s experiences of pregnancy, childbirth and motherhood in prison was collected via semi-structured qualitative interviews. The data collection methods will be discussed in detail as will the justification for the use of mixed methods approach, and the steps that were taken to ensure reliability, validity, rigour and trustworthiness of the research.

### 5.2 Research paradigms

‘A science is often thought of as being a coherent body of thought about a topic over which there is a broad consensus among its practitioners. However, the actual practice of science shows there are not only different perspectives on a given phenomenon, but also alternative methods of gathering information and analysing the resultant data’.

May (1993, pp. 4)

One of the primary considerations when designing a research study is the paradigm from which the researcher approaches the research question. A paradigm in research has been defined as “the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed” (Kuhn, 1962, pp.45). There are a number of different perspectives or paradigms that researchers can adopt, and the choice of approach has implications for both the research design and how knowledge is collected.
A research paradigm is characterised by its ontology which is concerned with what exists and what is believed to be true (Blaikie, 1993; What is reality?), epistemology, which attempts to demonstrate how something exists (How do you know something?) and the methodology (How do you go about finding it out?) (Guba, 1990). This overarching framework as an approach to research had led to the development of different and ‘opposing’ paradigms, which historically have dominated the acquisition of scientific knowledge; the Positivist paradigm and the Constructivist paradigm. Traditionally, researchers have adopted a particular ontological and epistemological standpoint which guides their approach to research methodology, and these two approaches to understanding the world have often been deemed irreconcilable with each other because of their approach to comprehending the world and gaining knowledge.

Historically, it is the positivist paradigm that has dominated scientific research. From a positivist perspective, there is one single truth or reality, and this reality can be measured, usually via a quantitative research methodology (Crotty, 1998). Quantitative methods can measure and observe phenomena, taking a deductive stance and allow for hypotheses testing. The statistical methods used mean that the data is verifiable, and allows for systematic collection and analysis of data. This leads to findings which are generalisable to a wider population, and can control for confounding variables. It also means comparisons are possible between groups and conditions, and over time. Quantitative methods tend to utilise an *a priori* hypothesis, which is tested experimentally and the results analysed statistically. Whilst there are clear strengths in a positivist, quantitative approach there are also limitations. The statistical nature of quantitative research means that it cannot
explain the complexity of the human experience or human perceptions, and although it can reveal the ‘what’, it cannot generally explain the ‘why’ or ‘how’. Data are not usually subject to further explanation or clarification, and additional questions cannot be included once data collection has begun. It is often a labour-intensive process, and the contributions of participants are limited by the type of questions or data collected.

Within the social sciences, dissatisfaction with this positivist approach led to the emergence of an alternative paradigm, known as social constructivism or interpretivism, which assumes there are multiple constructions or realities. According to this paradigm, individuals develop a variety of subjective meanings of their experiences, as they engage with the world around them. Qualitative methods generally come from this interpretative approach, allowing for the generation of hypotheses, and explanation of how and why things happen and of the complexities of social and cultural issues. Qualitative methods are generally inductive, and allow researchers to gather rich information on the views, beliefs, experiences and meaning of events for participants. It allows for in-depth detail, and for participants themselves to generate the information and data, allowing events and opinions to be explained in context. High quality qualitative research can generate theories which may be applicable in a wider context, and can guide policy and practice (Murphy, Dingwall, Greatbatch, Parker & Watson, 1998). However, generalisability may be limited by the small sample sizes typical of qualitative research, and the perceived subjectivity of data collection and analysis.
From a paradigmatic viewpoint, quantitative and qualitative approaches derive from separate and arguably incompatible paradigms. Murphy et al. (1998) suggest that combining quantitative and qualitative methods is not possible, nor desirable, because they represent opposing viewpoints of the world and because of how data collection is approached. The seeming incompatibility of these two opposing research paradigms and the corresponding quantitative and qualitative methods led to the development of two separate and distinct approaches to research. This perceived incompatibility of approaches to data collection and analysis became engrained in social science research (Tashakkori & Teddlie, 2010), and some even went as far as to call this ‘the paradigm wars’ (Howe 1988). This focus on two distinct approaches dominated for much of the 20th century.

As research in the social sciences evolved, alternative approaches emerged (Creswell & Plano Clark, 2007), and it was argued that these two approaches were not incompatible, but in fact have many similarities which override these differences, such as collecting and describing data, and constructing explanations from this data. The debate has shifted, and there is increasing acceptance that the differences between the two approaches are in fact blurred, exaggerated, or do not exist (Tashakkori & Teddlie, 2010). One alternative approach that has emerged from this evolution is Pragmatism, which is associated with mixed methods research. This pragmatic paradigm suggests that if the research questions are fully addressed, then conflicting world views can be discounted. The origins of this approach are attributed to a paper by Campbell and Fiske (1959, as cited in Tashakkori & Teddlie, 2010), which not only proposed the use of mixed methods as an approach which provided more than one perspective on a particular research phenomenon, but also suggested
that this was an important approach to checking validity. It contradicts previous assumptions that positivism and constructivism are incompatible, and suggests they can in fact be complementary and compatible. The adoption of a mixed methods approach allows the researcher to select the research methods that best address the research question or questions, incorporating methods from both quantitative and qualitative approaches (Creswell & Plano Clark, 2007). Mixed methods allow the strengths of both approaches to be utilised in one study, and it is an approach particularly suited to complex issues with many facets (Tariq & Woodman, 2013). The mixed methods approach is considered a third methodological movement (Tashakkori & Teddlie, 2010), and rejects the either/or approach of the positivist and interpretivist paradigms.

5.2.1 The mixed method paradigm

Since the emergence of this ‘third paradigm’, opportunities across cultures, disciplines and in terms of publication and funding have evolved and supported its development as a distinct and valid approach (Creswell & Plano Clark, 2007). Methodological decisions depend on the research question allowing for a very practical and applied approach (Andrews & Halcomb, 2006). The purpose of such an approach is not to replace either qualitative or quantitative approaches, but instead to maximise the strengths and reduce the limitations. There does however need to be a clear rationale for the use of mixed methods, in place of a purely quantitative or qualitative approach (Andrews & Halcomb, 2006).
The combination of elements of both quantitative and qualitative methodologies in mixed methods research, should increase understanding and corroboration of the research findings (Johnson, Onwuegbuzie & Turner, 2007). This approach generally involves collecting, analysing and interpreting quantitative and qualitative data in the same study, or in a series of studies which investigate the same underlying phenomenon (Leech & Onwuegbuzie, 2008). It is based on the assumption that it will offer a more comprehensive approach to the research question or questions than using a purely quantitative or qualitative approach (Creswell & Plano Clark, 2007), and the central premise of the mixed methods approach is that the combination of the two provides a better understanding than either approach individually (Creswell & Plano Clark, 2007). Bergman (2008) suggests that justification for the use of a mixed methods approach should focus on the appropriateness of this approach to the research question, design and the data that will be collected and analysed, rather than on the strengths and limitations of the quantitative and qualitative approaches.

Tariq and Woodman (2013) offer an outline of some of the most common reasons the mixed methods approach is utilised by researchers, and these are summarised in Box 4 below.
Box 4. Common reasons researchers adopt a mixed methods approach

- Complementarity: Using data obtained by one method to illustrate results from another.
- Development: Using results from one method to develop or inform the use of the other method.
- Initiation: Using results from different methods specifically to look for areas of incongruence in order to generate new insights.
- Expansion: Setting out to examine different aspects of a research question, where each aspect warrants different methods.
- Triangulation: Using data obtained by both methods to corroborate findings.

5.3 Mixed method approaches

Mixed methods research enables an understanding of the context of real-life situations and takes into account different perspectives and cultural influences (Creswell, Klassen, Plano Clark & Clegg Smith, 2011), and there are a number of approaches that can be adopted within this paradigm. The main approaches are:

- Convergent parallel – quantitative and qualitative data collection is carried out separately but concurrently, both parts are equally important and it allows for a more complete understanding
- Explanatory sequential – quantitative data collection is followed by qualitative data collection, and the qualitative findings allow the researcher to interpret and put the quantitative findings in context
• Exploratory sequential – qualitative data collection is followed by quantitative data collection in this approach, and the qualitative findings are tested and verified through quantitative methods

• Embedded – This is either a principally quantitative or qualitative study with a secondary approach (quantitative or qualitative) embedded within the main research

5.3.1 Strengths and Limitations of Mixed Methods

This combining and blending of research methods “.... enables the researcher to simultaneously answer confirmatory and exploratory questions, and therefore verify and generate theory in the same study” (Teddlie & Tashakkori, 2003, p. 15). It allows for comparisons to be made between quantitative and qualitative data, and can be particularly useful in explaining contradictions between quantitative and qualitative findings, providing more meaningful interpretation of the data and phenomena being researched (Tashakkori & Teddlie, 2010). It incorporates the views of participants, allowing their voices and experiences to be included. It also allows for greater flexibility in methodological design, and therefore richer data to be collected, than through purely quantitative research, and allows the data to be integrated to present a more complete picture. In the case of insufficient statistical power in a quantitative sample, the inclusion of a qualitative sub-sample can increase the quality and usefulness of the findings, because of the additional detailed and rich data it can provide. Such research can however be complex to plan and conduct, and integrating the data can be particularly complex, and ensuring rigour and quality for the two different components can also be challenging (Wisdom, Cavaleri,
Onwuegbuzie & Green, 2012). It is also a time-consuming, labour intensive approach, particularly the interpretation of data within a mixed methods framework, and is often a more expensive approach than a study that uses only one methodology, because of the scope and breadth of data collection. Researchers will also require knowledge and training in the two different approaches, and the support of a multidisciplinary team. Whilst it allows research to capitalise on the strengths and minimise the weaknesses of the two separate approaches (Johnson & Onwuegbuzie, 2004), there may be confusion or uncertainty because of a lack of consistency in terminology and definitions (Palinkas, Horwitz, Chamberlain, Hurlburt & Landsverk, 2011).

5.4 Thesis Research Methodology

There is very limited previous research into mothers and pregnant women in prison. This may be because of the difficulties inherent in carrying out such research, because of the extensive permissions required and the vulnerability of such participants, and their protection requirements. It may also be related to the relatively small number of women affected, and so any outcomes and impacts of any research are perceived to be minimal. However, when one considers the number of children that may be affected, the importance of such research is clear. In England 66% of women in prison are reported to be mothers of children under 18, almost one third of these children are under the age of 5, and 8% are younger than 18-months, (Caddle & Crisp, 1997), and an estimated 17,240 children will be separated from their mothers because of imprisonment each year (Wilks-Wiffen, 2011). The research to date has adopted a variety of methodological approaches, and the
majority of studies have employed either a solely quantitative approach, for example focusing on recidivism rates, depression and anxiety and misconduct (Carlson, 1998, Carlson, 2001, Fogel, 1993, Fogel, 2001, Goshin, Byrne & Henninger, 2013) or a solely qualitative approach, exploring experiences of pregnancy, childbirth, and separation in prison or prison nursery residency (Chambers, 2009, Fritz & Whiteacre, 2016, Shelton & Gill, 1989, Wismount, 2000). Only one previous study in this area appears to have adopted a mixed methods approach (Hutchinson, Moore, Propper & Mariaskin, 2008), which looked at psychological functioning and experiences of incarceration during pregnancy. However, the scope of this study was narrow, and the methodology flawed for a number of reasons; the objectives related to the quantitative measures were not clearly stated, and the methods and analysis lacked detail. Correlations were reported between variables measured using qualitative measures, with variables using quantitative measures but the procedure for converting the qualitative results for quantitative analysis is not outlined. The small sample size (n=25) further limits any conclusions that can be drawn from the correlations, and the generalisability of the quantitative study. The research has generally involved small sample sizes (e.g. for the quantitative studies in the previous chapter, this ranged from 24 to 139; for the qualitative studies 12-27) often because of the nature of the population, which is a minority group (female prisoners) within a minority group (prisoners). Studies have only considered a narrow range of variables, limiting the scope, quality and depth, as well as very limited power to detect anything other than very large effects.

The quantitative research is limited because of the relatively small number of studies in this area, methodological issues and differences in design, methods and
participant recruitment, meaning comparisons between studies and generalisations are difficult, as well as the limited geographical locations, as most studies have been carried out in the US, usually with participants from just one prison. Whilst there are some similarities between the US and UK prison systems (e.g. that some women can keep their babies with them in prisons), there are also many differences (e.g. forced separation policy in some US states and the continued practice of shackling during labour and childbirth, neither of which happen in the UK). It also cannot offer an understanding of the lived experiences of this group because of the narrow focus of the data that has been collected and variables that have been included. The qualitative studies do not produce results that can be generalised to the wider population of pregnant women and new mothers in prison, and have also been limited by methodological issues (e.g. lack of a clear theoretical approach to data collection and analysis), limited geographical location (US) and recruitment of participants from just one prison location per study. Again, the US focus of the research to date means that whilst there will be similarities in experiences, the differences in policy and practice in prisons and for pregnant women and new mothers, between the UK and US, mean that the results of these studies cannot be generalised to this country.

5.4.1 Rationale for a mixed methods approach

When approaching the complex issue of pregnancy, childbirth and motherhood in prison it is important to adopt a research design which, permits the collection of data that will allow results to be generalised to the wider population of pregnant women and new mothers in prison and also captures the lived experiences of women in this
situation. The research questions for the current study examine different aspects of pregnancy in prison, and the use of a mixed methods approach allowed the researcher to collect data that was generalisable, but also included individual experiences, allowed the participants voices to be heard, and including a wide scope of issues related to pregnancy, childbirth and motherhood in prison. The chosen approach addresses many of the limitations of previous research in this area, which has typically adopted either a purely quantitative or qualitative approach, and focussed on a narrow range of issues. It is also the first such study to be carried out within the English female prison system, and as such it was important to collect data about how many women are affected, and the prevalence and impact of issues such as mental health and type of prison, but also to collect data on the experiences and opinions of women who experience imprisonment during this time.

The current study employed a convergent parallel approach to allow a more complete understanding of the research findings. Both the quantitative and the qualitative sections were equally important and addressed different aspects of the research question, which neither methodological approach on its own could do, because of the complexity of the research and the depth of understanding that was sought.

The quantitative strand measured:

- socio-demographic characteristics of pregnant women in prison
- the prevalence of mental disorder
• the factors that associated with applications and admissions to MBUs, particularly mental health

• the differences between those who do and do not apply, and who are and are not admitted to prison MBUs, on measures of wellbeing, mother child bonding, and perinatal depression.

• Changes in depression and quality of life pre-and post-natally

• Initial outcomes for women admitted and not admitted to MBUs

The qualitative strand explored:

• how participants experience pregnancy and childbirth during imprisonment

• experiences of the decision-making process in relation to MBU application

• experiences of pregnancy, childbirth and mental health during imprisonment

• experiences of spending or not spending time in a prison MBU
<table>
<thead>
<tr>
<th>RQ</th>
<th>Objective</th>
<th>Approach</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To describe the socio-demographic characteristics of pregnant women in prison.</td>
<td>Quantitative</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>2</td>
<td>To estimate the prevalence of mental disorder amongst pregnant women in prison.</td>
<td>Quantitative</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>3</td>
<td>To identify the factors associated with pregnant women’s applications and admissions to MBUs including demographic &amp; criminological factors, mental health and type of prison.</td>
<td>Quantitative</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>4</td>
<td>To compare women who are and are not admitted to MBUs on presence of mental disorder, personality disorder, demographic and criminological factors and type of prison.</td>
<td>Quantitative</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>4</td>
<td>To measure changes in depression and quality of life in pregnant women in prison pre- and postnatally.</td>
<td>Quantitative</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>4</td>
<td>To examine initial outcomes for women admitted and not admitted to MBUs including quality of life, mental health, and maternal child bonding.</td>
<td>Quantitative</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>5</td>
<td>To document the experiences of being pregnant in prison, and giving birth and being a new mother in custody.</td>
<td>Qualitative</td>
<td>Semi-structured interviews with pregnant women and new mothers in prison</td>
</tr>
</tbody>
</table>
5.5 Quantitative Methods

Prison mother and baby units, admissions, mental health and initial outcomes

The corresponding papers are presented in Chapter 6:

Dolan, R., Hann, M., Edge, D. & Shaw, J. Admissions to prison mother and baby units in England and the factors that influence placements

Dolan, R., Hann, M. & Shaw, J. Pregnant women in prison: Mother and Baby Unit admission and impact on mental health

Table 4. Women’s prisons in England

<table>
<thead>
<tr>
<th>HM Prison</th>
<th>Location</th>
<th>Operational capacity</th>
<th>Prison type</th>
<th>MBU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aksham Grange</td>
<td>North Yorkshire</td>
<td>128</td>
<td>Open</td>
<td>10 women (11 babies)</td>
</tr>
<tr>
<td>Bronzefield*</td>
<td>Surrey</td>
<td>527</td>
<td>Closed local</td>
<td>12 women (13 babies)</td>
</tr>
<tr>
<td>Downview****</td>
<td>Surrey</td>
<td>355</td>
<td>Closed</td>
<td>No</td>
</tr>
<tr>
<td>Drake Hall</td>
<td>Staffordshire</td>
<td>340</td>
<td>Closed</td>
<td>No</td>
</tr>
<tr>
<td>East Sutton Park</td>
<td>Kent</td>
<td>100</td>
<td>Open</td>
<td>No</td>
</tr>
<tr>
<td>Eastwood Park</td>
<td>Gloucestershire</td>
<td>442</td>
<td>Closed local</td>
<td>12 women** (13 babies)</td>
</tr>
<tr>
<td>Foston Hall</td>
<td>Derbyshire</td>
<td>344</td>
<td>Closed</td>
<td>No</td>
</tr>
<tr>
<td>Holloway***</td>
<td>London</td>
<td>591</td>
<td>Closed local</td>
<td>12 women** (13 babies)</td>
</tr>
<tr>
<td>Low Newton</td>
<td>Durham</td>
<td>352</td>
<td>Closed</td>
<td>Closed 2013</td>
</tr>
<tr>
<td>New Hall</td>
<td>West Yorkshire</td>
<td>425</td>
<td>Closed local</td>
<td>No</td>
</tr>
<tr>
<td>Peterborough*</td>
<td>Peterborough</td>
<td>360 females</td>
<td>Closed</td>
<td>9 women (10 babies)</td>
</tr>
<tr>
<td>Send</td>
<td>Surrey</td>
<td>282</td>
<td>Closed training</td>
<td>12 women (13 babies)</td>
</tr>
<tr>
<td>Styal</td>
<td>Cheshire</td>
<td>486</td>
<td>Closed</td>
<td>No</td>
</tr>
</tbody>
</table>

When data collection began, HMP Holloway was open, but closed in July 2016, part way through data collection. HMP Downview was reopened for female prisoners in May 2016.
5.5.1 Participants & recruitment

A total of 85 pregnant women completed an initial interview whilst in custody, and were recruited from the following prisons: HMP Styal, HMP Holloway, HMP New Hall, HMP Foston Hall, HMP Askham Grange, HMP Eastwood Park, HMP Peterborough, HMP Bronzefield, and HMP Low Newton. Of these 85 participants, 62 (73%) completed a follow-up interview whilst either in the same prison (N=49), or in a different prison (N=13) if they had been transferred.

Once NHS and HMPPS ethical permissions had been granted, each prison was approached and the governor or director contacted to request permission to visit. Once permission was granted the prison was visited by the researcher to meet with the initial contact that had been identified. This was either, a member of MBU staff, a member of health care staff, a pregnancy liaison officer, or MBU governor. During these meetings, a strategy for data collection was discussed and agreed. Prisons granted permission at different times, between February 2015 and September 2016. One prison permanently closed in July 2016. Five of the prisons allowed the researcher to draw keys, meaning that once initial meetings and an induction had taken place, the researcher was able to visit at regular intervals and return whenever necessary. At the remaining four prisons visits were facilitated by a member of staff, and had to be arranged when it was possible for a designated member of staff to escort the researcher.
5.5.2 Inclusion criteria

- Women who were pregnant and expecting to be in prison at their due date and at least 6 weeks post due date were eligible to participate.
- Women who had a sufficient level of English to participate.

5.5.3 Exclusion criteria

- Women who were planning to terminate their pregnancy.
- Women judged by healthcare services to be incapable of giving informed consent

5.5.4 Quantitative Measures - First interview

A questionnaire to gather socio demographic information, criminal history, and application/non-application to MBU was developed specifically for this study. Data was gathered on age, ethnic group, place of birth, marital status, accommodation, and employment status prior to incarceration, and children in the community. Information was gathered on whether or not they had applied for a MBU place, how they were informed of MBUs, and the current status of any applications. Participants were also asked about any previous prison remands or convictions, and sentence length. Data was collected on previous and current mental health diagnoses, contact with mental health services and history of self-harm and suicide attempts. A full version of this questionnaire is available in Appendix A.
The Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden & Fagovsky, 1987) was used to measure pre-natal depression. The EPDS is one of the most widely used measures for postpartum depression (Boyd & Somberg, 2005), and has also been validated for antenatal depression (Eberhard-Gran et al., 2001; Lee, Yip, Chiu, Leung & Chung, 2001). It consists of 10 items and asks about the participants feelings over the previous seven days and each item is scored on a scale of 0-3 with 3 representing ‘Yes, all the time’ and 0 ‘No, not at all’ and generates a maximum score of 30. Higher cut-off scores are recommended in the antenatal period (Murray & Cox, 1990; Felice, Saliba, Grech & Cox, 2006), and a cut-off score of 13 or more is recommended for screening for all depression (minor and major) antenatally, and a cut-off score of 15 or more for major depression (compared to recommended cut-off scores of 10 or more for all depression and 13 or more for major depression in the postpartum period). During pregnancy, women may experience temporary episodes of increased anxiety or distress, which may not be indicative of a mood disorder (Ross, Sellers, Evans, & Romach, 2004), hence the rationale for the higher cut-off score compared to the post-partum period). The sensitivity of the EPDS (English language version) is estimated to be approximately .80 with a specificity of approximately 0.90 when a cut-off score of 13 is used for post-partum major depressive disorder (MDD). Whilst the EPDS does not provide information on the severity of symptoms, as a screening instrument rather than a diagnostic one it is appropriate for the purposes of the current study as it indicates the probability of antenatal and postpartum depression, and has been reported to be a powerful and valuable screening tool cross-culturally (Gibson, McKenzie-Mc Harg, Shakespeare, Price & Gray, 2009). There are no recommended cut-off scores for the EPDS for pregnant women and mothers in...
prison. Whilst research with non-English versions of the EPDS suggest lower precision in these populations, this was found to be due to a lack of cultural sensitivity during translation (Shrestha, Pradhan, Tran, Gualano, & Fisher, 2012). There is no research to date to suggest that use of the English language version in diverse populations would reduce precision, and therefore the cut-off scores recommended for the general population were used.

The World Health Organisation Quality of Life (WHOQOL – BREF; WHO, 1998) was used to measure overall quality of life. The WHOQOL – BREF is a multilingual measure designed for generic use and was developed internationally over a ten-year period. The WHOQOL-100, on which the WHOQOL is based, was developed as a quality of life measure and consists of 100 five-point items and is divided into 24 facets and 6 domains: Physical Health, Psychological, Social Relationships, Environment, Level of Independence, and Spiritual/Religion/Personal Beliefs. It was developed in 15 different international centres and has been translated into more than 20 languages. Internal reliability of the English language version has been reported as ranging from .83 to .91 (Bonomi, Patrick, Bushnell, D. M., & Martin, 2000). The WHOQOL – BREF was introduced as a shorter alternative to the WHOQOL-100, and it consists of 26 items. These provide four domain scores, measuring physical health, psychological health, social relationships and environment. Correlations with the WHOQOL-100 have been reported as close to .9 (WHOQOL Group, 1998), and internal consistency has been reported as adequate for the Physical domain (.82), Psychological domain (.81), Environment domain (.80) but lower for the Social domain (.68; Skevington, Lotfy & O’Connell, 2004). Because of the relatively small number of items it is suitable for research in different contexts,
and has demonstrated cross-cultural sensitivity, and is appropriate over a range of conditions. It has been used previously with women in prison (Mooney, Hannon, Barry, Friel & Kelleher, 2002). Similar to the Mooney et al. (2002) study the use of cut-off scores for women in the general population, allowed comparisons to be made with community samples. Community sample cut-off scores were also used for women in prison in the current study, in order to allow for comparisons, and because there are no specific cut-off scores recommended for women in prison.

Schedules for the Clinical Assessment of Neuropsychiatry (SCAN) sections 2-12 and 16-19 (Wing, Babor, Brugha, Burke, Cooper, Giel et al., 1990) was used to make a psychiatric diagnosis, including neurotic disorders, such as depression and anxiety and psychotic. The SCAN is a semi-structured psychiatric interview that has been widely used in psychiatric research. It explores symptoms in-depth, eliciting information on levels of severity, frequency and interference in everyday life. It has been used as a standard measure against which to measure the validity of other instruments (Brugha, Jenkins, Taub & Bebbington, 2001). The core of the SCAN is derived from the Present State Examination (PSE) which has been found to be valid and reliable internationally. The psychometric properties of the SCAN have been evaluated in a number of studies. For test-retest the kappa coefficient for diagnostic caseness was reported as 0.62 and therefore substantial, for diagnostic categories and diagnostic groups 0.24 to .64, therefore moderate to good. Interviewer agreement has been reported as ranging from 87% (diagnostic group) to 94% (diagnostic caseness). It has been used widely in forensic populations and with mothers in prison (Birmingham et al., 2006; Gregoire et al., 2010), and the same
threshold was used in these previous prison studies as in community samples, and was therefore used in this study.

Structured Clinical Interview for DSM-IV (SCID-II) for personality disorder (First, Spitzer, Gibbon & Williams, 1995) was used to establish presence/absence of personality disorder. SCID has been used extensively in personality disorder research and is considered to be the ‘gold standard’ in semi-structured assessment of personality disorder. Items are rated as either; ? = inadequate information, 1 = symptom clearly absent or criteria not met, 2 = subthreshold condition that almost meets criteria, and 3 = threshold for criteria met. The SCID-II has good to excellent test-retest reliability and inter-rater agreement (Brooks, Baltazar, McDowell, Munjack, & Bruns, 1991; Fogelson, Nuechterlein, Asarnow, Subotnik, & Talovic, 1991; Malow, West, Williams, & Sutker, 1989; Renneberg, Chambless, & Gracely, 1992). It is different from other personality interviews in that the questions are grouped based on disorder, and whilst it is argued that this replicates clinical diagnostic practice (First et al., 1995), it has been suggested that this may lead to some items being redundant, and to repetition as there are similar items included for different diagnoses (Blanchard & Brown, 1998). This measure has also previously been used in forensic populations and with mothers in prison (Birmingham et al., 2006; Gregoire et al., 2010). Because the community cut-off scores have been used previously in research with women/mothers in prison, they were also adopted in the current study.

The Severity of Dependence Questionnaire (SOD-Q) (Phillips, Gossop, Edwards, Sutherland, Taylor & Strang, 1987) consists of five items and was used to measure
drug misuse. High scores indicate higher levels of dependence. It has been reported as reliable, internally consistent and valid as a measure of persistent drug misuse over the preceding 12 months in adult populations, cross-culturally (Ferri, Marsden, Araujo, Laranjeira & Gossop, 2000; Gossop, Darke, Griffiths, Hando, Powis, Hall & Strang, 1995). It has good test-retest reliability of 0.89 (Gossop et al., 1995). It has also been used widely in forensic populations and with mothers in prison (Birmingham et al., 2006; Gregoire et al., 2010). Drug misuse is prevalent in prison populations and it would not be appropriate to adopt a different threshold for high levels of dependence.

The Alcohol Use Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente & Grant, 1993) was used to assess hazardous drinking in the year prior to imprisonment. It is a 10-item measure, with a maximum score of 40. The cut-off point to identify potentially hazardous alcohol intake is 8+. Scores of 20+ indicate alcohol dependence. Findings on the psychometric properties suggest a median reliability coefficient of 0.83 (Reinert & Allen, 2007). It has been used widely in research in forensic populations and with mothers in prison (Birmingham et al., 2006; Gregoire et al., 2010), with researchers adopting the same cut-off scores as in community samples, which have also been adopted here.

All questionnaires were researcher administered in order to maximise response rates. Women in prison often have complex mental health problems, a lower level of literacy and are harder to engage than the general population. Previous research with this group also suggests that they welcome the opportunity to talk to somebody
different, and that it breaks the routine of prison life, also increasing the likelihood of participation (Birmingham et al., 2006; Gregoire et al., 2010; Dolan et al, 2013).

5.5.5 Quantitative measures - Follow-up Interview

The Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987) was used to identify levels of depression postpartum. The optimum cut-off score when using the English language versions, for screening for major depression in postpartum women has been consistently reported to be 13 or more (Cox et al., 1987; Harris, Huckle, Thomas, Johns & Fung, 1989; Murray & Carothers, 1990; Boyce, Stubbs & Todd, 1993). For minor depression 10 or more is reported as the optimum cut-off score (Cox et al, 1987; Murray & Carothers, 1990; Harris et al., 1989). There is some cultural variability, but, in research in the United Kingdom, with a cut-off score of 13 or more at 6 weeks postpartum, sensitivity ranging from 68% to 95% and specificity from 78% to 96%, has been reported when compared to psychiatric interview diagnosis of major depression (Cox et al., 1987; Murray & Carothers, 1990).

The World Health Organisation Quality of Life (WHOQOL – BREF; WHO, 1998) was also used for a second time, to measure overall quality of life.

A brief questionnaire was developed by the researcher to gather details of the type of birth, gestation, gender, and birth weight of the child, to be administered at follow-up (Appendix B). This questionnaire was also used to collect information on whether or not participants applied for an MBU place, the outcome of any application, the current location of the participant, and current care of child, as well as contact with the child if they had been separated from their mother.
The Mother-to-Infant Bonding Scale (MIBS; Taylor, Atkins, Kumar, Adams & Glover, 2005) was used to measure levels of mother-infant bonding. The MIBS was designed as a general population screen for postnatal problems, relating the mother’s emotions towards her infant. It consists of items relating to emotional responses, such as joy, dislike, and aggression, which are rated on a 4 point Likert scale, ranging from ‘very much’ to ‘not at all’. A high score indicates poor mother-to-infant bonding. It has acceptable internal consistency $\alpha=0.71$ (Taylor et al., 2005). There are no UK studies that report the use of the MIBS within the UK female prison population, and therefore cut-off scores for the general population were used.

**5.5.6 Procedure**

Potential participants were identified from the weekly pregnancy lists produced in each prison which were shared with the researcher. All lists included names and locations of pregnant women in each prison. Some also included the estimated delivery date (EDD) of the women, whether or not she was sentenced or on remand and her release date. All women’s prisons produce weekly pregnancy lists, and these are usually available in printed format. A copy of the individual list was usually given to the researcher, except in those prisons where keys were not issued and an escort was required. In these prisons, the person escorting the researcher normally held the list, and took the researcher to the women who were on the list, and the researcher would then speak to each woman alone to explain the research.

In prisons where the list only included the names and locations of the women, it was necessary to locate the women, in order to ascertain whether or not they met the inclusion criteria (expected to be in custody when their child was due to be born).
The study was briefly explained to all these women, and then it was discussed whether or not they met the criteria. Those who did not were thanked for their time and interest but did not participate. For those who did meet the criteria, the researcher gave them a participant information sheet (PIS; Appendix C) to read, and asked if they would be interested in participating in the research. All those who said yes were then asked if they would be willing to complete an interview at a day and time convenient to them.

In prisons where the list included the EDD and release date, only those women who would be in prison at least 6 weeks post-birth according to this information, were approached, the study was explained, they were also given a PIS, and they were asked whether or not they would be willing to participate. Again, those who agreed were asked to complete an interview at a day/time that was convenient for them.

All participants were asked if they had read the PIS, and also had the research explained orally, and were given the opportunity to ask any questions about the research. Those who agreed to participate were asked to sign an informed consent form prior to being interviewed, a copy of which can be found in Appendix D. Once they had signed the informed consent form they completed all the quantitative measures, with the researcher asking the questions and recording their responses in writing. A sub-sample completed a qualitative interview after the quantitative interview (a detailed explanation of this can be found later in the Chapter 7). The initial quantitative interviews lasted approximately 1-2 hours and once they were completed, all participants were asked for their written consent to be interviewed a second time approximately 6-8 weeks after their baby was born. All women who
participated agreed to complete a follow-up interview, and asked to sign a consent form agreeing to be contacted (Appendix E).

For the follow-up interviews, the researcher located participants via contacts in the different prisons. The prison was then visited and the participant was asked if she was willing to complete the follow-up interview. The quantitative part of the follow-up interview took between 20 and 40 minutes to complete and a different subsection of the participants also completed a qualitative interview.

5.5.7 Original sample size calculation

The original justification for the proposed sample size was that with 150 women (75 who apply and 75 who do not apply for an MBU), then it would be possible to:

1. Estimate the prevalence of depression/other mental health disorders to within +/- 11 absolute percentage points (with 95% confidence) in both those who do and do not apply for a MBU place (to within +/- 8 absolute percentage points in the sample overall).

2. Detect, with greater than 80% power, differences between the two groups in key binary outcomes, such as presence or absence of depression, as small as 24% (at the 5% level of significance).

3. Using logistic regression, detect, with 90% power at the 5% level of significance, at least a 15% reduction (e.g. from 50% to 35%) in MBU applications between women with ‘average’ symptoms of pregnancy-related depression and women with above average (by 1 standard deviation) symptoms. This calculation assumes a squared
multiple correlation of 0.1 between pregnancy-related depression and other predictors of MBU application and only very limited amounts of missing data.

If, however, the recruited sample size was only 100 women (50 who apply and 50 who do not apply for an MBU), then it would have been possible to:

1. Estimate the prevalence of depression/other mental health disorders to within +/- 14 absolute percentage points (with 95% confidence) in both those who do and do not apply for a MBU place (to within +/- 10% overall).

2. Detect, with greater than 80% power, differences between the two groups in key binary outcomes as small as 30% (at the 5% level of significance).

3. Conduct the exact same analysis of 3 above, but with reduced power (approximately 75%).

Because the sample size was less than 100 (n=85) and the sample sizes were unequal (MBU 64, non-MBU 21), the quantitative analysis had to be adapted to account for these unexpected differences. Any analyses were underpowered, meaning any conclusions must be treated with caution, and the majority of the analyses were descriptive and exploratory.

5.5.8 Quantitative Data analysis

The quantitative data analysis was descriptive and exploratory, and the data was analysed using SPSS for Windows v21 (IBM, 2012). Data collected via interview and pro-forma was categorised into numerical form to represent the variables so that statistical analyses could be undertaken. For each of the measures used, the coding of data into numerical format was followed, so that data was entered in a
standardised format and comparison with population norms would also be possible.

The following analyses were carried out:

- Point estimates of prevalence of mental disorder were calculated with 95% confidence intervals, in order to estimate the number of women experiencing mental health problems during pregnancy, and by MBU placement outcome.

- Cross-tabulations using chi-square were carried out on MBU placement and factors including mental health, type of prison and demographic factors to identify any significant relationships.

- A logistic regression model was also used to determine the factors that predicted whether a woman was offered a place on an MBU (this included factors related to mental health, the type of prison and demographic factors).

- Quantitative analysis of measures of Mother-Child Bonding were calculated for participants who were admitted to MBUs.

- Impact of admission to an MBU on initial outcomes for mother and child was examined using t-tests or Mann-Whitney U tests. These included post-natal depression scores on the EPDS, quality of life scores on the WHOQOL-BREF and birth weight.

- It was originally planned to use a logistic regression model to determine which factors predicted whether a woman applied for a place on a MBU. However, almost all participants applied for an MBU place, and this was not possible.
5.6 Qualitative Methods

The corresponding paper is presented in Chapter 7

Dolan, R., Edge, D. Hann, M., & Shaw, J. Experiences of pregnancy, childbirth and motherhood in prison.

5.6.1 Recruitment, sample size and composition

A purposive sampling approach was adopted for the qualitative interviews, as this was a pre-defined population (pregnant women in prison), and aimed to record the experiences of women in different prisons. Interviews were carried out until data saturation was reached. Whilst researcher bias can limit the possibility of making generalisations based on the findings, this is the case when the sample chosen is based on the researcher’s subjective judgement. In the current study, participants were selected based on prison location, so that all prison locations would be represented in the sample. A total of 31 initial interviews were completed with pregnant women, in seven of the nine prisons where data collection was carried out. Unfortunately, qualitative interviews could not be arranged in one of the prisons because permission was not granted to record the interviews in the particular prison. One of the prisons only had participants who took part in follow-up interviews, and no pregnant women were interviewed in that prison. Twenty-four follow-up interviews were completed with women after they had given birth, in eight of the nine prisons that were visited. Comparisons were not made between prenatal and postnatal qualitative interviews, and therefore two discrete samples were recruited. However, seven participants completed both pre- and postnatal interviews.
Difficulty and delays gaining permission to use a voice recorder in some prisons meant that more interviews were conducted in some prisons than others. However, participants were included from all prisons where permission was granted. Five of the prisons gave ongoing permission to take a voice recorder into the prison, meaning qualitative interviews could be carried out whenever necessary. Three of the prisons required a separate permission to be given for the voice recorder to be used for each visit. This meant the permission was not always granted in time for the visit, because of the paperwork that needed to be completed each time.

5.6.2 Semi-Structured Interviews

There are four main approaches to data collection in qualitative research; interviews, observation, documentation and artefacts (Sandelowski, 2002). As an approach to data collection interviewing is one of the most widely used. Qualitative interviews were used to explore both inmate experiences of pregnancy, childbirth and motherhood in prison, because of the many advantages they have over other measures. There were a number of pre-defined areas that were included in the qualitative topic guide, five in the initial interview and six in the follow-up interview.

5.6.3 Rationale for semi-structured interviews

For complex issues in research, where sensitive subjects will be discussed, and the presence of other participants might negatively impact or limit individual responses, one-to-one interviews are likely to be a better approach than focus groups, where participants might feel inhibited in their contributions (Ritchie & Lewis, 2003).
There are three fundamental approaches to research interviews; structured, semi-structured and unstructured. In structured interviews, a set of predetermined questions are asked, with minimal variation and no follow-up questions. Whilst it is a relatively straightforward and time effective approach, it only allows for limited responses from participants and limited opportunities for elaboration or further clarification. It is a useful approach if clarification of specific questions is required (Gill, Stewart, Treasure & Chadwick, 2008). Unstructured interviews have limited or no organisation, will generally begin with a very general question, and further questions will be based on the response to this initial question. This approach can be time-consuming and difficult to manage, but is suitable for research in areas that very little is known about (Patton, 2002).

Semi-structured interviews include several key questions related to the issues that are to be explored, but also allow for other topics to be brought into the interview, and to be explored in further detail (Legard, Keegan & Ward, 2003). This approach offers both guidance for the areas to be discussed and also the flexibility to include additional topics and to further explore issues that arise from the participants’ responses. They are also relatively easy to arrange, and generate rich data on beliefs and behaviour within the contexts in which they occur (Rubin & Rubin, 2005). Semi-structured interviews also allow for questions to be rephrased and simplified, and for answers to be clarified at the time of the interview, increasing the accuracy of the data collected (Dörnyei, 2007). Perhaps most importantly of all, it allows the participants own voices to be heard, and for their own thoughts and feelings to be expressed (Berg, 2007).
As with any research method this approach also has limitations. The effectiveness of the interview is heavily reliant on the interview skills of the researcher (Clough & Nutbrown, 2012). These skills include the ability to listen attentively and allow the interviewee to speak freely (Clough & Nutbrown, 2012) as well as ability to establish rapport (Opie, 2004), a key aspect of trust, with the interviewee. Interviews will to some extent be shaped by the questions that are asked, perceived conventions about what can and cannot be discussed, participants perceptions of what the interviewer expects, and the desire to give answers they believe the interviewer will approve of (Hammersley & Gomm, 2008). Whilst the interviews themselves are relatively easy and quick to organise, the process of transcription and analysis is very time-consuming and labour intensive (Robson, 2002).

5.6.4 Data collection

The framework approach (Richie & Spencer, 1994) was used for analysis, as in addition to data collection being structured and focussed on the specific aims and objectives of the study, it also allows the inclusion of themes raised by the participants that recur in the data. The framework approach was specifically developed as an approach to applied policy research, at National Centre for Social Research, but has been increasingly applied in other research settings, including health research (Gale, Heath, Cameron, Rashid & Redwood, 2013).

5.6.5 Qualitative Interview Topic guides

Two qualitative interview topic guides (Appendix F) were developed by the researcher specifically for this study, based on previous research carried out with pregnant women and mothers in prison (Gregoire et al., 2010; Dolan et al., 2013).
The initial topic guides were piloted with a small group of five adult females who were also mothers and further refined. They were then used for the first time in one of the prisons where two pilot interviews were carried out, and the topic guides were further refined for use in the current study. The topic guides focussed on the experiences of pregnant women and new mothers in prison. The questions were focused on the following areas:

**Initial interview (pregnant participants):**

1. Experience of pregnancy in prison including: any difficulties they had experienced, level of support they had received and from whom during their pregnancy, feelings about their experience of being pregnant and in prison.

2. The physical and mental impacts of experiencing pregnancy in prison, including the impact of the waiting times for MBU applications to be considered, and for decisions to be made.

3. Information they had received related to their pregnancy and prison MBUS, including; who gave them this information and how it was conveyed, and the quality and quantity of the information they received

4. MBU application including; whether or not they had applied and the reasons for this, what this experience was like, any difficulties or obstacles they had encountered and anything that had influenced their decisions and this process
5. Mental illness; including any current and previous mental health difficulties they had experienced, and any impacts this had had on their experience in prison and the application for an MBU place

**Follow-up interview (postpartum participants):**

1. Experience of childbirth in prison, any difficulties they had experienced, who they were supported by during labour, post birth and on arrival in a MBU or post-separation.

2. Experience of motherhood and comparisons with previous experiences of childbirth and motherhood in the community (if relevant)

3. MBU application, including; their experience of the board and final decision, any difficulties or obstacles they faced, and the experience and outcome of any appeals (if relevant)

4. Experience of the MBU unit, parenting support, and any difficulties experienced

5. Experience of separation (if relevant); the impact, experience and emotions.

6. Mental illness including; the impacts on parenting and impacts on decision-making post-birth.

**5.6.6 Procedure - First interview**

Qualitative interviews were carried out once the quantitative data had been collected, with a sub-sample of women. This was usually immediately after the quantitative interview, but in some cases, it was carried out later the same day, or
on a different day. In cases where it was not possible to complete the qualitative interview immediately after the quantitative interview, this was because the interviewee was required to be somewhere else, or had to return to her cell to be locked in over lunch time. It was explained that the interview would further explore some of the issues that had been discussed during quantitative data collection, and also to talk about their experiences of pregnancy and/or motherhood in prison. Prior to beginning the interview, the researcher explained the reason for the qualitative interview, gave an overview of what the interview would cover, explained that the interview would be approximately 30 minutes long, and a maximum of one hour, that the interview was confidential, and that whilst quotes might be used in the thesis and publications, these would be anonymised and non-identifiable. They were also advised that they could end the interview at any point it they wished, that they did not need to answer any questions they did not wish to, and asked to confirm they were happy for the interview to be recorded prior to starting. The issues in the topic guide were discussed sequentially initially, but interviewees sometimes raised topics earlier in the interview, either additional topics or those from later in the topic guide. In these cases, the researcher ensured that all the a priori topics were discussed, in addition to any other topics. Additional topics that emerged frequently were incorporated into subsequent interviews (i.e. in three or more interviews). All interviews were carried out in either a private room, or a quiet part of the wing, where confidentiality could be assured.
5.6.7 Procedure - Second interview

A second qualitative interview was carried out with a different sub-sample of women after they had given birth, and once the second quantitative interview had been completed. Whilst some participants completed both an initial and follow-up interview, this was not a requirement, and the majority of participant only completed one qualitative interview. As with the initial qualitative interviews, in most cases follow-up qualitative interviews were carried out immediately after the quantitative follow-up interviews, but for some participants were later the same day, or on a different day. The same procedure as with the first qualitative interview was followed. This second interview explored the women’s experiences of the application procedure and experience of pregnancy, childbirth and motherhood in prison. Again, these interviews continued until data saturation was reached.

4.6.8 Qualitative analysis

Qualitative interviews were digitally recorded, transcribed verbatim and checked for accuracy. The framework approach was used for data management and analysis. The aim of the framework approach is to organise the data to facilitate interpretation of the data. It allows the researcher to retain links to the original data and allows for data analysis to be both transparent and comprehensive. It has clear stages (outlined below), that allow others to see the different steps of the analysis process and how results were obtained. In addition, it was an inductive approach to analysis, allowing for the inclusion of concepts related to the study aims as well as emergent themes and concepts. There were specific issues this study aimed to address but it also allowed for flexibility in the collection and analysis of the qualitative data. Whilst it
was a time and labour-intensive approach, it was the most appropriate approach for the current study to allow in-depth analysis and understanding of the women’s experiences and to provide a deeper understanding of the quantitative data and results, allowing the researcher to include pre-defined categories and new themes that emerged from the data.

Framework Analysis was originally developed by Richie and Spence (1994), at the National Centre for Social Policy Research. It was developed with the aim of utilising qualitative research to increase our understanding of behaviour in order to inform policy in a way that is efficient and systematic. This approach to the qualitative data management and analysis is well-suited to the cross-sectional data collected in this particular study, and allowed different elements of the women’s experience to be recorded, and is also a transparent approach to analysis (Ritchie & Lewis, 2003). There is the initial process of familiarisation, then the development of a thematic framework, indexing, charting, mapping, and interpretation; enabling researchers to develop recommendations for practice and policy (Ritchie & Lewis 2003). It was therefore particularly appropriate for this study. NVivo 11 (QSR International Pty Ltd., 2015) supported data management and analysis.

The following stages of Framework analysis were followed (adapted from Richie & Lewis, 2003):

1. Transcription

All interviews were recorded and transcribed verbatim, allowing the researcher to be immersed in the data.
2. Familiarisation

Printed transcripts of all interviews were reviewed repeatedly, by the researcher and additional notes were reviewed, and notes were made of initial thoughts and impressions, in the margins of the transcripts. This process allowed the researcher to become sensitised to the early themes emerging from the data, and also to see the differences between the different transcripts prior to beginning coding the data, when such differences become less apparent. Emergent impressions, relating to reactions to the transcript and any important points to refer back to later were noted.

3. Coding

This involved carefully reading the interview transcripts line by line, and applying a label or code to identify what was important. A number of codes were pre-defined: pregnancy, MBU application, childbirth, support, mental health, as the topic guides focussed on specific areas of interest, but additional codes for other themes that emerged were also included, and all codes were summarised in the participants’ own words (in-vivo codes). Key phrases were highlighted and preliminary thoughts recorded in the margins of the transcripts. Whilst this stage is not essential, in this case it was necessary, in order to allow additional codes to be identified, and included, so that no important aspects of the data would be missed.

4. Developing an analytical framework

A theoretical framework was developed through immersion in the data, referring back to the initial research questions, aims and objectives and the original topic
guides. A second researcher (RJ) assisted in the development of the theoretical framework. Any disagreements were discussed and a consensus was reached. These codes were then grouped into categories in order to construct a working analytical framework. Categories were developed using in-vivo codes, in order to remain ‘true’ to the data (Ritchie & Lewis 2003).

5. Applying the analytical framework

This framework was then applied to the remaining transcripts, and adapted throughout to include any new categories and themes that emerged. NVivo (Version 11, QSR International Pty Ltd., 2015) was used to manage the data at this stage, which allowed for easy retrieval of data.

6. Charting into the framework matrix

A matrix was generated and data were charted into the matrix. This involved summarising the data by category from each interview transcript. The final matrix was reviewed by RJ, in order to ensure rigour in the process. Whilst data was reduced the original meanings and ‘feel’ of the data were retained. Links were made with illustrative quotations in the matrix, so that these could be easily retrieved.

7. Interpreting the data

Characteristics of the data, and differences were identified in this final stage, and this allowed typologies to be generated, which interrogated the theoretical concepts identified prior to and during data collection. Connections between categories were mapped to explore any relationships between categories. This resulted in the final categories being identified, and a final conceptual framework, describing the
women’s accounts of their experiences. In order to reduce the risk of bias in the interpretation, due to the researcher’s prior knowledge of this area, data were discussed with RJ and the academic supervisors.

4.6.9 Quality and Methodological rigour

It is essential to ensure quality and methodological rigour in qualitative research and this is different to the quality standards and rigour required in quantitative research (Bryman, Becker & Sempick, 2008). Lincoln and Guba (1985) suggest four quality criteria to ensure ‘trustworthiness’ in qualitative research; credibility (being confident of the ‘truth’ of the findings), transferability (the findings are applicable to other contexts), dependability (findings are consistent and can be replicated) and confirmability (level of confidence that findings are shaped by participants rather than researcher bias, motivation, or interest). Whilst these criteria are not universally accepted, they are widely used and cited by qualitative researchers (Bryman et al., 2008).

**Credibility**

One of the ways in which credibility can be established is via prolonged engagement in the field (Lincoln & Guba, 1985), in order to understand the culture, social setting and phenomenon under investigation. The researcher spent over two years visiting different prisons for the current study, but also had worked on previous research with mothers in prison. All prisons included in the study were visited multiple times over the data collection period. The researcher had informal conversations with staff and inmates over the two+ year period developing rapport and relationships and
trust. Such prolonged engagement allowed for the researcher to understand and appreciate the context of the situation.

Triangulation can also help establish credibility, and whilst triangulation in qualitative research has been criticised as supporting a positivist agenda suggesting an absolute truth, which is counter to the qualitative approach, it has been argued that the use of triangulation can increase the quality of qualitative research (e.g. Golafshani, 2003). In the current study the use of a mixed methods approach to the research and the inclusion of quantitative and qualitative data from a range of participants meant that the data gathered was rich, comprehensive, robust and well-developed. The researcher also utilised peer debriefing (Lincoln & Guba, 1985) to further increase credibility, meeting the peer debriefer regularly during the analysis process and discussing themes, methodology and analysis, in order to help uncover researcher bias and assumptions, and to test emergent themes in terms of reasonability and plausibility.

**Transferability**

Transferability can be considered as a qualitative equivalent of external validity. It refers to the applicability of findings to other settings and contexts. This has been achieved via the detailed description of the methods, procedure and findings, so that they can be applied to the wider context of pregnancy and motherhood in prison, therefore increasing external validity.
**Dependability and Confirmability**

Dependability refers not only to the consistency and reliability of the findings, but also the detailed documentation of the research procedures, so that they could be independently followed, audited and critiqued. The detailed explanation of the methods and procedures allows others to see how the findings were reached, and demonstrates that that the procedure is replicable. An important tool for establishing confirmability is a clear audit trail, a detailed and transparent description of all the steps taken to complete the research, and this has been included here (Halpern, 1983 as cited in Lincoln & Guba, 1985). In addition, triangulation, as outlined above, is also an important tool for establishing confirmability.

**Reflexivity**

The final factor that is important for confirmability is reflexivity, the definition of which is the action of systematically attending to the context in which knowledge is constructed, and particularly the impact the researcher has on each step of the research process. There are opposing schools of thought on reflexivity, with those that believe it is necessary and possible for the researcher to transcend these preconceptions, and those who believe that this is not desirable or possible (Trufford & Newman, 2012). Silverman (2005) suggests that it is ‘unrealistic’ that a researcher’s past experience will not influence the data, and the data collection in this study was undertaken in this belief that the researcher’s own experiences and background influence the research process.
Reflexivity (assessing subjectivity) can help reduce bias, and increase the dependability through transparency (Guba, 1985). In order to ensure reflexivity, this thesis includes a detailed account of the qualitative methods, and justification of methodological choices. The researcher’s and participants different backgrounds, gender and ethnicity may have influenced how the researcher viewed the participant and how the participant viewed the researcher, and interactions within the interview process (Seale, 1999). It may have had an influence on how the participants responded, and may mean they withheld information, particularly considering the researcher/prisoner context, where one party was disempowered through their incarceration, and less likely to trust a professional figure (Wallerstein, 1999). The researcher kept a reflexive journal, in which methodological decisions were recorded, as well as the rationale for these decisions. Throughout the process of data collection and analysis there was continued reflection on what happened, and the influence of the researcher’s own values, perceptions and interests. It is important to note the importance of bias in research, but also that “Preconceptions are not the same as bias, unless the researcher fails to mention them” (Malterud, 2001, p. 484). Different researchers bring their own perspective to a research study, and will approach it from a different position or standpoint. Whilst this may lead to different understandings of the phenomenon under investigation, it makes the findings no less valid or valuable. In fact, whilst some may consider this a problem, there is the contradictory viewpoint that they lead to a richer and better developed understanding of complex issues (Gergen & Gergen, 2000).
Box 5. Reflecting on the interviewing process

My own background is very different from that of the majority of the women I interviewed. However, there are also similarities in that I am a woman and a mother. I have also interviewed many women and mothers in prison over a number of years, and this has led me to approach this work from a sympathetic point of view, empathising with the life experiences that likely led to their imprisonment, rather than the perspective of someone who did not have this depth of knowledge and experiences. Whilst my professional role as a researcher may have made some participants less forthcoming, my gender and role as a mother, may have made some participants more likely to share information, and experiences. The empathy I felt for the women I interviewed and their circumstances meant that becoming too emotionally involved, or emotionally upset when listening to the harrowing details of prior victimisation and abuse many of the research participants had experienced, was something that was extremely difficult, and this, what I feel was obvious empathy, may have led to participants sharing more than they might otherwise have done (a positive impact) but also meant it was difficult keeping interviews on track (a negative impact).

In interviews where women talked about the sexual abuse they experienced as children, it was often difficult to get the interview back on topic. Whilst no questions were asked about such experiences, they often were brought up by participants when discussing issues such as their mental health or drug misuse. It may also have been that as a researcher exploring issues around mental health, participants perceived me as someone in whom they could confide. This led to a
tension between my role as a researcher, and my position of empathetic listener. Another researcher, with different life experiences may have elicited different responses to questions, if they were of a different gender, felt less empathetic, or had not experienced motherhood. Whilst this might have led to different interviews and biases in the analysis, it would have been no less valid.

After discussion with my supervisors and reflecting on my own feelings about this difficulty of empathising and keeping interviews on track, it was clear that this information was relevant to the interview, but that it was important to be aware of my own feelings, and that these might well influence participant responses. For participants, their experiences as children could often not be separated from their current mental health, nor from their experiences as mothers. It was really important to listen, and allow the women to share these experiences. It was also difficult to tread the line between empathising and sympathising with, and counselling participants. I had to be very careful not to take on the role of ‘counsellor’ when women talked about their current or previous difficulties.

Because of my own background in psychology and mental health, and the nature of the qualitative interviews, participants may sometimes have perceived me as more of a counsellor than a researcher, and this is supported by frequent comments I had from the women, who suggested I was the first person they had felt they could ‘really talk to’, or who had ‘really listened’ since they had arrived in prison. Again, from this perspective they may have shared more than if they had felt this was ‘just’ a research interview. From my point of view as a researcher, this seemed like a reflection of the lack of support or care for many of these women,
as well as the unwillingness of many to trust those in authority enough to confide in them.

I sometimes felt conflicted in my role, because of what seemed to me a real lack of support for a population that so desperately needed it. I often had to ‘take a step back’, and remind myself that whilst I could not help individual participants, the research that I was doing would be of benefit to future pregnant women and mothers in prison, but this was a constant effort to maintain my professional role as a researcher and my compassion for the situation these women were in. However, I do feel that my own personal beliefs on this very likely influenced the data I collected.

My own attitudes and beliefs were also affected by the many informal conversations I had with other women and staff in prisons, and what really happens to pregnant women and mothers in prison, and the overwhelming negativity of the experience for many. Speaking to staff also highlighted both positive and negative attitudes towards women and mothers in prison, but also the tensions between being a prisoner and being a mother, felt by both women and staff. My overwhelming belief that prison is not the right place for the majority of women was reinforced, and also meant my focus was less on the what changes need to be made within prisons, and more on the systemic changes required.

In order to maintain focus on the wider aims of the research, and the possible biases and their consequences, I kept a diary of my own feelings and emotions that arose during interviews and reflected back on how this might have affected
my responses, my approach to questioning, and feelings towards the participant, and points that I found particularly poignant or distressing. When I felt conflicted in my role, I discussed this with my main supervisor, who advised me on ways I could signpost women to help and support, whilst retaining my distance and integrity as researcher.

5.7 Ethics and Research Governance

The process of acquiring approval to conduct the research consisted of three stages. Initial ethical approval for the study was requested from the National Research Ethics Service (NRES), and final approval was granted on 5th December 2015 Appendix G. The next stage was to request permission from the National Offender Management Service National Research Committee (NRC) which was granted on 10th February 2015 (Appendix H). Final approvals were then required from individual prison governors or directors to carry out the research in each prison. Approvals were requested at the same time from all prisons once approval from NRES was in place and granted on the proviso that no research would be carried out until NRC approval had been granted. The first prisons granted permission in November 2014 (HMP Askham Grange and HMP New Hall), and permission was granted by the final prison (HMP Low Newton) in June 2016 (Table 5).
Table 5. Participant recruitment start and end dates by prison

<table>
<thead>
<tr>
<th>Prison</th>
<th>Date permission granted</th>
<th>Data collection start date</th>
<th>Data collection end date</th>
<th>Total initial interviews</th>
<th>Total follow-up interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMP Askham Grange</td>
<td>20/11/14</td>
<td>04/04/16</td>
<td>26/05/17</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>HMP Bronzefield</td>
<td>27/11/15</td>
<td>11/02/16</td>
<td>03/10/17</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>HMP Eastwood Park</td>
<td>22/07/15</td>
<td>01/10/15</td>
<td>26/09/17</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>HMP Foston Hall</td>
<td>27/01/15</td>
<td>07/07/15</td>
<td>18/07/17</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>HMP Holloway</td>
<td>27/01/15</td>
<td>10/06/15</td>
<td>19/10/15</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>HMP Low Newton</td>
<td>26/06/16</td>
<td>01/11/16</td>
<td>29/12/16</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>HMP New Hall</td>
<td>20/11/14</td>
<td>01/07/15</td>
<td>27/09/17</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>HMP Peterborough</td>
<td>15/03/16</td>
<td>25/05/16</td>
<td>27/06/17</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>HMP Styal</td>
<td>12/02/15</td>
<td>24/02/15</td>
<td>08/08/17</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>85</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

5.7.1 Informed consent

Participant information sheets were written to take into account possible reduced levels of literacy and were also read aloud to all participants to ensure they fully understood the written information provided. The researcher was experienced in informed consent procedures with potentially vulnerable individuals in prison; and alert that no sense of coercion was used to influence decision making; conscious that potential participants understood fully what the study was looking at; understood what their participation consisted of; and how any data would be used and reported. Participants were assured that their participation in the study would have no effect on their care, or that of their children, life in prison, or parole in any way.
5.7.2 Risks and burdens

Participants were asked about their mental health, pregnancy, childbirth and experiences during time in prison which has the potential risk to be upsetting. This meant remaining vigilant for any signs of distress; reassuring participants of their right to withdraw from the study at any time without providing a reason; and reassuring them that they did not have to discuss anything they did not wish to. This also meant that sometimes a short break was required or the interview redirected to less distressing points temporarily, and only returning to the discussion of distressing issues if absolutely necessary and appropriate.

In some cases, it was necessary to inform staff when there were concerns for the wellbeing of participants participating in the study. This was only done with the full knowledge and consent of participants.

Names and contact of individual participants were not kept post follow-up.

5.7.3 Legal issues

It was made clear that any information provided during the course of the study would be kept confidential and would be used in a way that would not allow individual identification, however, participants were informed that the researcher had a duty to inform prison staff of the following:

a. Behaviour that is against prison rules and can be adjudicated against;

b. Information that either indicates a risk of harm to yourself or others or refers to a new crime committed or plan to commit;

c. Undisclosed illegal acts;
d. Behaviour that is harmful to you (e.g. intention to self-harm or commit suicide) and;

e. Information that raises concerns about terrorist, radicalisation, or security issues.

5.8. Methodological Issues

5.8.1 Sample size

The original plan was to recruit approximately 150-200 participants for the quantitative analysis, and sufficient participants who were and were not admitted to prison MBUs in order to make meaningful comparisons. However, there were a number of obstacles which meant this was not possible, and the total number of participants to be recruited was revised part way through data collection, when it became apparent that the original recruitment targets would not be met. At this stage, it was decided that more detailed qualitative data would be gathered in order to enhance and enrich the quantitative findings, and that this would make a greater contribution to the final thesis than initially planned.

5.8.2. Obstacles to recruitment and follow-up

Obstacles to completing research within prisons and with vulnerable groups are inherent to the nature of such research, and this study encountered numerous such obstacles, limiting the sample size, preventing follow-up interviews being completed and leading to gaps in the data and unequal recruitment from different prisons, and in the numbers of participants who were and were not given a place in a prison MBU.

Ethical review was requested in early 2014, and was initially refused by an ethics committee, because they felt there was insufficient information to make a decision.
It was therefore necessary to make a second ethics application. NHS ethical permission was finally granted at the end of 2014, over 12 months into the four-year research period. It was not possible to be granted Ministry of Justice ethical approval until NHS ethics approval was granted, and this was then granted in February 2015. This process of gaining initial ethical permission continued for the first 17 months of what was initially a 3 year PhD, and impacted participant recruitment substantially, as well as start and end dates for data collection.

Once ethical permission had been granted, and prior to beginning data collection, permission was required from individual governors/directors at each of the prisons, in order to carry out data collection in each establishment. The first three prisons granted provisional permission shortly before the Ministry of Justice granted their final approval, and a further two prisons shortly after this was granted. At the beginning of data collection there were 12 female prisons. One prison granted permission in July 2015, five months after data collection began, and one more at the end of November 2015, nine months after data collection began. Permission for the penultimate prison was granted 13 months after the beginning of data collection in March 2016, and the final prison granted permission in June 2016, 16 months after data collection began, and 33 months into the four-year research period. The main delay to individual prisons granting permission was non-response from the person who was contacted. Only one prison initially refused permission, stating that it was not possible at that time, but later did grant permission. Three prisons granted permission, but were not visited by the researcher as during the data collection period, they reported not receiving any pregnant women. These prisons did not
accept women straight from the courts and would therefore receive women later in their sentence, so they were unlikely to be pregnant, and none of them had an MBU.

Once a prison governor or director granted their approval for the research to be carried out within their establishment, they generally designated another member of staff as the main contact. For some prisons, this meant that data collection began almost immediately after permission was granted. However, for the majority of prisons (seven) there were delays of between two and seven months between governor permission being granted and data collection starting. This was as a result of either waiting to be issued keys and completion of the relevant training (security and key training), waiting for the contact to arrange a visit when it was convenient, or the staff member leaving post and a new contact having to be made. Again, it was sometimes weeks or months before a designated contact replied to the initial request to enter the prison. These combined delays meant that some pregnant women were never interviewed during the data collection period, as the researcher could not enter the prison prior to them giving birth, and pregnant women arrive in prison every week. It is however not possible to know exactly how many women were missed because of this. It also resulted in four women who had completed their first interview in one prison, and who were later transferred, not completing a follow-up interview, as they were released prior to permission to enter the second prison being granted.

Four of the prisons did not issue keys, which meant that data collection could only be carried out when the contact themselves or another staff member was available to escort the researcher. This again led to some pregnant women being ‘missed’ and
to some follow-up interviews not being completed because of lack of access. In those
prisons where the researcher did not have keys, or was reliant on a staff member to
provide details of pregnant women, the researcher was often directed to women
who were seen as likely by the staff member to be given a place in a MBU. Despite
explaining that all pregnant women should have the opportunity to participate, it is
possible that a number of women that were unlikely to get a place were not
identified to the researcher, and therefore introducing a level of bias to the sample
that is not possible to measure. There was a four-month interruption in data
collection at one prison, when the main point of contact left their post, and prior to
a new contact being established to facilitate further visits. In addition, women’s
prisons are widely dispersed throughout England, and travelling times for a round
trip to the most distant ones, could be 9 or 10 hours. In July 2016, HMP Holloway
closed permanently, and stopped receiving new prisoners a few months before this.
The majority of women were sent to different prisons during and after the closure
of Holloway, which were more difficult to access initially, and where the researcher
was not granted keys, therefore limiting access to potential and previous
participants.

Finally, for the last six months of the data collection period, the researcher was
removed from the system in one prison that allowed keys to be drawn each visit.
Although the prison agreed to reinstate keys, this never happened and a number of
obstacles meant that only a further two data collection visits could be carried out,
again impacting the number of initial recruitment and follow-up interviews. This
meant that an unknown number of pregnant women could not be interviewed and
two follow-up interviews could not be completed.
The various issues that impeded participant recruitment, and lack of official figures, mean that the number of pregnant women in prison who met the criteria for participation during the data collection period can only be estimated. Based on previous estimates approximately between 80 and 100 women may give birth in prison each year (but the most recent figures are 10 years old, so this may have changed). The time from beginning to end of data collection ranged from one month to 30 months (depending on the prison) with a mean of 16.66 months per prison. With a mean of 16.66 months of data collection per prison, and based on the estimate of 80-100 women giving birth whilst in prison custody each year, there could have been a potential sample of between 110 and 138 participants. This would suggest that between 62% and 77% of eligible women took part in the current research, and it is likely that the majority of women who did not participate were not approached because of the additional obstacles to data collection outlined above.
6. Quantitative results
6.1. Paper 1

**Pregnancy in prison, mental health and admission to prison mother and baby units**

Dolan, R., Hann, M., Edge, D. & Shaw, J.

(Submitted for publication)
Abstract

Background

Little is known about the mental health of pregnant women in prison in England or the factors which impact admissions to prison mother and baby units (MBUs). Research from the US showed high levels of depression and anxiety in pregnant women in prison. Research from the UK suggests women with more ‘stable’ backgrounds and lower prevalence of mental disorder are more likely to be admitted to prison MBUs.

Methods

Eighty-five pregnant women were interviewed in eight different prisons. Schedules for the Clinical Assessment of Neuropsychiatry (SCAN) and Edinburgh Postnatal Depression Scale (EPDS) were used to collect data on mental health; Severity of Dependence Questionnaire (SOD-Q) for drug misuse; Alcohol Use Identification Test (AUDIT) for hazardous drinking; and the Structured Clinical Interview for DSM-IV (SCID-II) to identify personality disorder.

Results

Fifty-one percent of participants had depression and 57% had anxiety. Sixty-three percent were admitted to MBUs. Those who were working prior to imprisonment were more likely to be admitted, and those with a prior Children’s Services involvement, diagnosis of personality disorder or history of suicidality were less likely to be admitted.
Conclusions

The high levels of depression and anxiety in pregnant women in prison can have negative impacts on both the mother and her unborn child. Pregnant women with less stable backgrounds, prior Children’s Services involvement, mental disorder and/or personality disorder are less likely to be given a place in a prison MBU, suggesting those who might benefit most from MBU placement are least likely to be admitted.

Keywords: pregnancy, mental health, prison, mother and baby units

Background

There are currently 12 women’s prisons in England, and in 2016, 8,447 women were sent to prison (Ministry of Justice, 2017). The average sentence length for women was just 42 days (Penal Reform International, 2008), and in the year to June 2016, 70% of women were serving sentences of six months or less (Ministry of Justice, 2016). Seventy-five per cent of crime committed by women was non-violent or minor, with just over a third (36%) of women imprisoned for drug-related offences (Department of Health, 2006).

Whilst an imprisoned woman’s pregnancy is recorded in individual inmate medical records, figures are neither comprehensively collected nor collated for the number of pregnancies or the number of children born to imprisoned mothers, (personal communication, HMPPS, 2014; Ministry of Justice, 2014). The most recent annual figures on births in custody, (2003 and 2008) varied between 114 and 169 (Hansard, 2005; Ministry of Justice, 2008; Price, 2005) and in 2003, 620 women received
antenatal care in prison (Price, 2005). Approximately two thirds of women in prison are mothers of children under the age of 18, a third of these children are under the age of five and 8% are under 18-months (Caddle & Crisp, 1997).

**Pregnant women in prison**

A recent systematic review (Dolan, Jasper, Hann, Edge & Shaw, submitted for publication), found no published studies from the UK on the mental health of pregnant women in prison. Studies from the US and from an international systematic review found that the majority of pregnant women in prison are single or divorced (Carlson, 2001; Fogel, 1993; Knight & Plugge, 2005), more likely to be from a minority ethnic group (Knight & Plugge, 2005) and the majority (59%) have previous convictions (Carlson, 2001). The systematic review included one from England, one from Germany and the rest were from the US (Knight & Plugge, 2005). The prevalence of depression and anxiety is high in pregnant women (70-80%; Fogel, 1993; Fogel & Belyea, 2001; Mukherjee, Pierre-Victor, Bahelah & Madhivanan, 2014), and in US prison nurseries (75%; Goshin, Byrne & Henninger, 2013). The negative impacts of anxiety and depression during pregnancy include significant neurodevelopmental changes in the child (Glover, 2014; Martini, Petzoldt, Einsle, Beesdo-Baum, Hofler & Wittchen, 2015; Talge, Neal & Glover, 2007; Van den Bergh & Marcoen, 2004), poor emotional adjustment in children (O’Connor, et al., 2007), lower birthweight (Ding, Wu, Xu, Zhu, Jia, Zhang, et al, 2014) and poor mother-child interaction (Webb & Ayers, 2014).

The prevalence of personality disorder in female prisoners is between 38-45% with antisocial personality disorder in 19-23% (Fazel & Danesh, 2002). Data for pregnant
women in prison is unavailable, but likely to be similar. Presence of personality disorder in mothers can lead to insecure attachment, parental possessiveness, inconsistency, poor communication, and also increases the risk of the child developing a personality disorder later in life (Johnson, Cohen, Kasen & Brook, 2006; Sroufe, Coffino & Carlson, 2010). Mothers with symptoms of antisocial personality disorder may be less understanding and have a more hostile and harsh parenting style (Bosquet & Egeland, 2000).

Over a third of women in prison (37%) have attempted suicide at some point in their life (Corston, 2007). Of all completed suicides in prison, 15% are women, and they account for more than half of attempted suicides, despite comprising less than 5% of the prison population (Fawcett Society, 2003). Suicide is also considered one of the main causes of maternal mortality in the community in the first 12 months postpartum (Fuhr, Calvert, Ronsmans, Chandra, Sikander, De Silva, et al., 2014; Lindahl, Pearson & Colpe, 2005). There are no published figures available for perinatal suicidality in the prison population in England, or internationally.

Rates of substance misuse in imprisoned women are consistently high: 39-40% for hazardous drinking (Ministry of Justice, 2009; Singleton, Meltzer & Gatward, 1998) and 41% for drug abuse/dependence (Singleton, Meltzer & Gatward, 1998). Research from the US suggests up to 88% of pregnant women in prison had a drug or alcohol problem or both (Eliason & Arndt, 2004; Mukherjee et al., 2014), but figures for England are unknown. Substance misuse has a negative impact on mental health and parenting ability (Dawe, Frye, Best, Lynch, Atkinson, Evans & Harnett, 2007), and the unborn child’s brain development (Welch-Carre, 2005).
**Prison mother and baby units (MBUs) in England**

In England if a woman is pregnant and expects to be in prison after the birth, or has a baby in the community under the age of 18-months, she can apply for a place in a prison MBU. According to PSI 49/2014-PI 63/2014 (National Offender Management Service, 2014), applications should be made at least three months prior to the expected date of delivery (where possible). The collection of information for the application can be time consuming, and for many women final decisions are made in the third trimester of pregnancy, causing stress and anxiety (Dolan, Edge, Jasper, Hann & Shaw, submitted for publication).

**Characteristics of women admitted/not admitted to MBUs**

Whilst there is little research on pregnant women in prison in England, there has been research into mothers of young infants in prison, including those accepted and not accepted for MBU’s. Similar levels of unemployment and prior homelessness to the general female prison population were found (Birmingham, Coulson, Mullee, Kamal & Gregoire, 2006; Gregoire, Dolan, Birmingham, Mullee & Coulson, 2010; Ministry of Justice, 2012a). Women admitted to a prison MBU had lower levels of unemployment, were more likely to be in a stable relationship and had fewer convictions for violent crime, than mothers of young babies who were not in prison MBUs (Birmingham et al., 2006; Gregoire et al., 2010), suggesting women admitted to prison MBUs have more ‘stable’ backgrounds.

Sixty per cent of mothers in MBUs had some form of mental disorder, but mothers in prison separated from their babies had higher rates (90%), including higher rates of depression, anxiety and personality disorder (Birmingham et al., 2006; Gregoire et al., 2010).
et al., 2010). However, it is not clear if these differences were a result of pre-existing factors or associated with MBU residence (Gregoire et al. 2010). Levels of hazardous drinking were reported for just 13% of participants in MBUs, and drug misuse or dependence for 36%, in the 12 months prior to imprisonment (Birmingham et al., 2006). For imprisoned women separated from their children, 23% were drinking at hazardous levels and 60% were using illegal drugs at levels of abuse or dependence in the 12 months prior to custody (Gregoire et al., 2010). The relatively lower levels in MBUs may be due to recent pregnancy, and the criteria to be drug free for prison MBU admission.

It is not clear if MBU admission is influenced by, or influences the prevalence of mental disorder and substance misuse. Gregoire et al. (2010) suggested the presence of mental disorder and addiction may make it more difficult for women to apply, because their behaviour may be deemed disruptive or difficult. MBUs may offer a safe and supportive environment for mothers who are vulnerable (Corston, 2007; Edge, 2006), suggesting that those who might benefit the most are least likely to get a place. These positive benefits are supported by research carried out with women who were resident in US prison nurseries (similar to MBUs), where increased levels of attachment were found, as well as lower levels of recidivism (Byrne, Goshin & Joestl, 2010; Goshin, Byrne & Henninger, 2013). In a post-release follow-up study of women in England lower levels of mental disorder, substance misuse and recidivism in women who had been resident in MBUs were found compared to women not admitted to MBUs who were separated from their infants (Dolan, Birmingham, Mullee & Gregoire, 2013).
Rationale for the current study

Although there is research available on pregnant women in prison, the majority of this has been carried out in the US, and cannot be applied to the population of pregnant women in prison in the UK because of differences between the two countries in terms of sentencing policy, incarceration rates, and provision of prison MBUs or nurseries. Policies for admission may differ, and length of stay is different (18-months in England; 12 months in the US). The research that has been published on women in English prisons has focussed on mothers, MBU residency and mental health, but not specifically on pregnant women. The aim of the current paper is firstly to describe the demographic and socio-economic background and prevalence of mental disorder in pregnant women in prison in England, recruiting a comprehensive sample and using standardised measures. Secondly, it aims to identify the demographic, criminological and clinical factors associated with admission to a prison MBU.

Methods

Participants & recruitment

A non-probability consecutive approach to sampling and participant recruitment was utilised, because the size of the target population was unknown. The aim was to approach all potential participants in all female prisons in England until the minimum required sample size was recruited, or until the data collection period ended. It was calculated that if 100 women (50 who applied and 50 who did not apply for an MBU) were recruited, then it would be possible to:
1. Estimate the prevalence of depression/other mental health disorders to within +/- 14 absolute percentage points (with 95% confidence) in both those who do and do not apply for a MBU place (to within +/- 10% overall).

2. Detect, with greater than 80% power, differences between the two groups in key binary outcomes as small as 30% (at the 5% level of significance).

Twelve women’s prisons were approached and all granted permission but only 8 of the 12 prisons held pregnant prisoners during the data collection period. A total of 89 women who met the criteria for participation were identified and approached by the researcher. Four of these women declined to participate.

**Inclusion criteria**

- Women who were pregnant and expecting to be in prison at their due date and at least 6 weeks post due date.
- Women who had a sufficient level of English.

**Exclusion criteria**

- Women who were planning to terminate their pregnancy.
- Women judged by healthcare services to be incapable of giving informed consent

**Measures**

A questionnaire to gather socio demographic information, criminal history, and data on MBU applications, mental health diagnoses, and history of self-harm and suicide attempts was developed specifically for this study.
Schedules for the Clinical Assessment of Neuropsychiatry (SCAN) sections 2-12 and 16-19 (Wing, Babor, Brugha, Burke, Cooper, Giel et al., 1990), a widely used semi-structured psychiatric interview, was used to collect data on current mental health. The psychometric properties of the SCAN have been evaluated in a number of studies, and it is used as a standard by which to measure the validity of other instruments (Brugha, Jenkins, Taub & Bebbington, 2001).

The Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden & Fagovsky, 1987) was used to measure pre-natal depression, and is a widely used measure for postpartum depression (Boyd & Somberg, 2005), and has also been validated for antenatal depression (Eberhard-Gran, Eskild, Tambs, Opjordsmoen & Samuelson, 2001; Lee, Yip, Chiu, Leung & Chung, 2001). It consists of 10 items asking about participants feelings over the previous seven days with a maximum score of 30. Cut off scores of 13 are recommended in the antenatal period (Murray & Cox, 1990; Felice, Saliba, Grech & Cox, 2006). The sensitivity of the EPDS (English language version) is estimated to be approximately .80 with a specificity of approximately 0.90 when a cut off score of 13 is used for major depressive disorder (MDD).

The Severity of Dependence Questionnaire (SOD-Q) (Phillips, Gossop, & Edwards, 1987) consists of five items and was used to measure drug misuse. High scores indicate higher levels of dependence. It has been reported as reliable, internally consistent and valid as a measure of persistent drug misuse over the preceding 12 months in adult populations, cross-culturally (Ferri, Marsden, Araujo, Laranjeira & Gossop, 2000; Gossop, Darke, Griffiths, Hando, Powis, Hall & Strang, 1995). It has good test-retest reliability of 0.89 (Gossop et al., 1995).
The Alcohol Use Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente & Grant, 1993) was used to assess hazardous drinking in the year prior to imprisonment. It is a 10-item measure, with a maximum score of 40. The cut-off point to identify potentially hazardous alcohol intake is 8+. Scores of 20+ indicate alcohol dependence. Findings on the psychometric properties suggest a median reliability coefficient of 0.83 (Reinert & Allen, 2007).

Structured Clinical Interview for DSM-IV (SCID-II) for personality disorder (First, Spitzer, Gibbon & Williams, 1995) was used to establish presence/absence of personality disorder. SCID has been used extensively in diagnosis and research. It has good to excellent test-retest reliability and agreement (Brooks, Baltazar, McDowell, Munjack, & Bruns, 1991; Fogelson, Nuechterlein, Asarnow, Subotnik, & Talovic, 1991; Renneberg, Chambless, & Gracely, 1992).

**Procedure**

Potential participants were identified from prison pregnancy lists. The study was explained to all potential participants. The researcher gave those who met the study criteria a participant information sheet (PIS), and interviews were arranged at a time convenient to participants. All participants had the research explained orally, and were given the opportunity to ask questions. Those who agreed to participate were asked to sign an informed consent form. All questionnaires were researcher administered in order to maximise response rates. Women in prison often have complex mental health problems, a lower level of literacy and may be difficult to engage, and may welcome the opportunity to talk to somebody different, increasing
the likelihood of participation (Birmingham et al., 2006; Dolan et al, 2013; Gregoire et al., 2010). Interviews lasted approximately 1-2 hours.

Data analysis

Data was analysed using SPSS for Windows v21 (IBM, 2012). Data collected via interview and pro-forma was categorised into numerical form to represent the variables so that statistical analyses could be undertaken. Summary statistics were calculated for continuous variables and frequencies were calculated for categorical variables. The Chi-Squared or Fisher’s Exact Test were used to test for an association between women being given an MBU place or not and the presence or absence of specific variables. Using a conservative p-value of 0.2 to indicate the importance of such associations, an exploratory multi-variable logistic regression model was fitted in order to gain an understanding of the most important associations.

Ethics and Research Governance

Ethical approval was granted by the National Research Ethics Service (NRES) in December 2014, and permission from the National Offender Management Service National Research Committee (NRC) was granted in February 2015. Governor/director permissions to carry out the research were granted between November 2014 and June 2016.

Results

Demographic Information

The mean age of participants was 28, and the majority were born in the UK or Irish republic, and identified as white British. Just over half reported that they were
married or co-habitng immediately prior to imprisonment. The majority were unemployed and almost all were living in their own home (either owned or rented) (Table 1).

Table 1. Socio-demographic details of all participants & current and previous imprisonment

<table>
<thead>
<tr>
<th>Age at interview in years</th>
<th>Mean age (SD)</th>
<th>28 (7.43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range 18-42 years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Country of birth</th>
<th>UK/Irish Republic</th>
<th>74 (87%)</th>
</tr>
</thead>
</table>

| Ethnic origin             | White British      | 59 (69%)  |
| Black or Black British    | 11 (12.9%)         |           |
| Asian                     | 5 (5.9%)           |           |
| Mixed black/white         | 5 (5.9%)           |           |
| Other                     | 5 (5.9%)           |           |

| Marital status            | Single            | 36 (42%)  |
|                          | Married/cohabiting| 46 (54%)  |
|                          | Divorced/Widowed  | 3 (3.6%)  |

<table>
<thead>
<tr>
<th>Employment prior to imprisonment</th>
<th>Unemployed</th>
<th>52 (61%)</th>
</tr>
</thead>
</table>

| Accommodation prior to imprisonment | Own home    | 72 (85%) |
|                                      | Unsettled (e.g. B&B) | 9 (10%) |
|                                      | Homeless    | 4 (5%)   |

31 (37%) had been homeless at some point in their lives

<table>
<thead>
<tr>
<th>Current Imprisonment</th>
<th>Sentenced</th>
<th>68 (80%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remanded</td>
<td>15 (19%)</td>
</tr>
<tr>
<td></td>
<td>Licence recall</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>

Sentence length months 15.33 (11.98) (Mean, SD)

Sentence length months 14.5, 2-53, 15.00 (Lower 7; Upper 22) (median, range, interquartile range)
The majority of participants were sentenced, and for two thirds it was their first conviction. For those with previous convictions, all except two had served previous prison terms. Almost a third had been convicted of a dishonesty related crime, and almost a quarter of a drug related crime.

The majority of participants (75%) had at least one other child born prior to the current sentence (149 children in total). The highest number of children that any participant had was six, and the majority were in the care of their father (41: 27%) or other immediate family member (52: 37%; usually a grandparent). Twenty (24%) were either in foster care or had been adopted. Their ages ranged from eight months to 21 years old. Over half of the children (63%) were aged 10 or below, 60 (40%) were under the age of 5. Fourteen (9%) were under the age of 18-months, but only three of these were residing with their mother in MBUs at the time of interview. Twenty-three of these mothers (27%) had had at least one child on the child
protection register prior to, or at the time of the interview, and 13 (15%) had had at least one child taken into care.

**Mental health**

On the SCAN, more than half of the participants had a diagnosis of anxiety, with the majority within the moderate to severe range. Just over half were diagnosed with depression, with the majority in the moderate to severe range (Table 2).

*Table 2. SCAN scores, EPDS scores & diagnoses of personality disorder at first interview*

<table>
<thead>
<tr>
<th>SCAN</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>13 (15%)</td>
<td>21 (25%)</td>
<td>17 (20%)</td>
<td>51 (60%)</td>
</tr>
<tr>
<td>Depression</td>
<td>16 (19%)</td>
<td>10 (12%)</td>
<td>21 (25%)</td>
<td>47 (55%)</td>
</tr>
<tr>
<td>OCD symptoms</td>
<td>4 (5%)</td>
<td>4 (5%)</td>
<td>8 (9%)</td>
<td>16 (19%)</td>
</tr>
</tbody>
</table>

**EPDS**

Mean (SD) 11.5 (8.25)

Range 0-29

Depression score of 13+ (indicative of minor and major depression) 36 (42%)

Depression score of 15+ (indicative of major depression) 31 (37%)

**Personality disorder**

45 (53%) participants met the criteria for at least one personality disorder

26 (31%) participants met the criteria for 2+ personality disorders

Less than half the participants had a score on the EPDS indicative of prenatal depression (13+); however, the majority of these fell within the range of severe depression (15+; Table 2). Just over half met the criteria for at least one personality disorder, with the most frequent being paranoid personality disorder 31 (37%), anti-social personality disorder 21 (27%), and borderline personality disorder 11 (13%).
Table 3. Suicide and self-harm, self-reported abusive/dependent illegal drug use in 12 months prior to imprisonment & AUDIT scores

<table>
<thead>
<tr>
<th>Suicide and self-harm</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever attempted suicide</td>
<td>24 (28%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever self-harmed</td>
<td>17 (20%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current loss of hope for the future</td>
<td>26 (31%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current feeling that life not worth living</td>
<td>9 (11%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current thoughts of self-harm or suicide</th>
<th>Suicide</th>
<th>Self-harm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 (5%)</td>
<td>1 (1%)</td>
<td>5 (6%)</td>
</tr>
</tbody>
</table>

Abusive/dependent illegal drug use in 12 months prior to imprisonment

<table>
<thead>
<tr>
<th></th>
<th>Abuse</th>
<th>Dependent non-physical</th>
<th>Dependent physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzodiazepines</td>
<td>0</td>
<td>0</td>
<td>2 (2.5%)</td>
</tr>
<tr>
<td>Opiates</td>
<td>3 (3.5%)</td>
<td>2 (2.5%)</td>
<td>8 (9%)</td>
</tr>
<tr>
<td>Cocaine/crack</td>
<td>6 (7%)</td>
<td>1 (1%)</td>
<td>0</td>
</tr>
<tr>
<td>Cannabis</td>
<td>2 (2.3%)</td>
<td>2 (2.3%)</td>
<td>0</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>0</td>
<td>0</td>
<td>1 (1%)</td>
</tr>
<tr>
<td>MCat</td>
<td>0</td>
<td>0</td>
<td>1 (1%)</td>
</tr>
</tbody>
</table>

AUDIT scores in 12 months prior to current interview

- 35 (39%) reported drinking alcohol
- N=35
- Hazardous drinking (AUDIT score 8+) | 11 (13%)
- Alcohol dependence (AUDIT score 20+) | 9 (11%)
- Mean scores (SD) 6.72 (12.65)
- Range | 0-40

Twenty-eight per cent had a history of attempted suicide, 20% a history of self-harm and 5% had current thoughts of suicide. Almost two thirds (50; 59%) had taken illegal drugs at some point in their lives. Twenty-eight (19%) reported that they were using drugs at levels of abuse or dependence in the 12 months prior to their current imprisonment, and almost half of these were using heroin at levels of abuse or dependence (Table 3). The majority had not consumed alcohol in the 12 months
prior to the interview, and only nine women (11%) were dependent on alcohol in the previous 12 months.

**Factors associated with MBU admissions**

Table 4. Factors that associated with MBU admissions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category label</th>
<th>Given MBU place</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety present*</td>
<td>Yes</td>
<td>32/45 (71.1%)</td>
<td>0.312</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>14/16 (87.5%)</td>
<td></td>
</tr>
<tr>
<td>Depression present</td>
<td>Yes</td>
<td>28/40 (70.0%)</td>
<td>0.176</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>18/21 (85.7%)</td>
<td></td>
</tr>
<tr>
<td>Prison has MBU</td>
<td>Yes</td>
<td>39/50 (78.0%)</td>
<td>0.203</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>14/22 (63.6%)</td>
<td></td>
</tr>
<tr>
<td>Sentence status*</td>
<td>Sentenced</td>
<td>46/60 (76.7%)</td>
<td>0.465</td>
</tr>
<tr>
<td></td>
<td>Remanded</td>
<td>7/11 (63.6%)</td>
<td></td>
</tr>
<tr>
<td>Country of birth*</td>
<td>UK</td>
<td>43/62 (69.4%)</td>
<td>0.054</td>
</tr>
<tr>
<td></td>
<td>Non-UK</td>
<td>10/10 (100%)</td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>Yes</td>
<td>26/31 (83.9%)</td>
<td>0.086</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>27/41 (65.9%)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>20/27 (74.1%)</td>
<td>0.945</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>33/45 (73.3%)</td>
<td></td>
</tr>
<tr>
<td>Ever homeless</td>
<td>Yes</td>
<td>16/25 (64.0%)</td>
<td>0.128</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>37/46 (80.4%)</td>
<td></td>
</tr>
<tr>
<td>Violent crime</td>
<td>Yes</td>
<td>18/24 (75.0%)</td>
<td>0.811</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>34/47 (72.3%)</td>
<td></td>
</tr>
<tr>
<td>Illegal drugs</td>
<td>Yes</td>
<td>15/23 (65.2%)</td>
<td>0.268</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38/49 (77.6%)</td>
<td></td>
</tr>
<tr>
<td>Attempted suicide</td>
<td>Yes</td>
<td>12/22 (54.5%)</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>41/49 (83.7%)</td>
<td></td>
</tr>
<tr>
<td>Self-harmed*</td>
<td>yes</td>
<td>10/14 (71.4%)</td>
<td>0.742</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>43/57 (75.4%)</td>
<td></td>
</tr>
<tr>
<td>Prenatal depression</td>
<td>yes</td>
<td>19/28 (67.9%)</td>
<td>0.289</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>34/43 (79.1%)</td>
<td></td>
</tr>
<tr>
<td>Audit score &gt; 8*</td>
<td>Yes</td>
<td>6/10 (60.0%)</td>
<td>0.439</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>47/62 (75.8%)</td>
<td></td>
</tr>
<tr>
<td>Personality disorder</td>
<td>Yes</td>
<td>23/38 (60.5%)</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>30/34 (88.2%)</td>
<td></td>
</tr>
<tr>
<td>Previous Children’s Services &lt;0.001 involvement</td>
<td>Yes</td>
<td>9/23 (39.1%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>44/49 (89.7%)</td>
<td></td>
</tr>
</tbody>
</table>

*Fisher’s Exact Test used
Fifty-five (63%) participants were admitted to MBUs. The following participant covariates were cross-tabulated against whether or not they were given a place in a prison MBU: anxiety and/or depression present (SCAN), in a prison with an MBU, sentenced or remanded, born in UK or not, employed, married/co-habiting, previous homelessness, previous suicide or self-harm attempts, presence of perinatal depression (EPDS), hazardous drinking, presence of personality disorder, and history of Children’s Services involvement (child protection and/or care order) (Table 4). The percentage of women given an MBU place by presence or absence of each variable was calculated. Where possible the chi-squared test was used to measure association. Where expected cell counts were lower than 5, Fisher’s Exact Test was used. A conservative p-value of 0.2 was used in order to include/exclude covariates from a potential statistical model.

A logistic regression model was fitted to explore the effects of employment status, history of suicide attempts, presence of personality disorder, presence of depression and history of Children’s Services involvement. Controlling for other covariates, women who were working prior to imprisonment were more likely to be admitted to an MBU, than those who were not working. Previous SSI significantly adversely affects MBU placement, whilst there is weak evidence (0.05 < p < 0.10) that ever having attempted suicide does the same (Table 5).
Table 5. Summary of logistic regression analysis for variables predicting MBU admission

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Estimate</th>
<th>S.E.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working prior to imprisonment</td>
<td>1.999</td>
<td>1.217</td>
<td>.101</td>
</tr>
<tr>
<td>Ever attempted suicide</td>
<td>-2.092</td>
<td>1.081</td>
<td>.053</td>
</tr>
<tr>
<td>Diagnosis of personality disorder</td>
<td>-1.500</td>
<td>1.027</td>
<td>.144</td>
</tr>
<tr>
<td>Diagnosis of depression</td>
<td>-0.744</td>
<td>.998</td>
<td>.456</td>
</tr>
<tr>
<td>Homeless</td>
<td>-1.269</td>
<td>1.005</td>
<td>.207</td>
</tr>
<tr>
<td>Children’s Services involvement</td>
<td>-2.599</td>
<td>.913</td>
<td>.004</td>
</tr>
</tbody>
</table>

Discussion

This is the first UK study to describe the mental health of pregnant women in prison, and factors that influence admission to prison MBUs. Similar to previous research with mothers in prison (Birmingham et al., 2003; Gregoire et al., 2010), the majority of participants were born in the UK or the Irish Republic, and identified as white British. The percentage married or cohabiting was similar to that in MBUs (Birmingham et al., 2006), but higher than in pregnant women in US prisons (Carlson, 2001; Fogel, 1993; Knight & Plugge, 2005), and mothers separated from their babies in English prisons (Gregoire et al., 2013). This may be related to differences between the US and UK prison populations, and to sample size variation, and different research methodologies.

The majority of participants were unemployed prior to imprisonment, and over a third had been homeless at some point in their life, with a small number either homeless or in unstable accommodation immediately prior to custody, similar to previous findings (Birmingham et al, 2006; Gregoire et al., 2010; Ministry of Justice, 2012).
The percentage misusing alcohol and drugs is substantially lower than reported in pregnant women in US prisons (Eliason & Arndt, 2004), and in women separated from their babies in English prisons (Gregoire et al., 2010). This may be in part due to the pregnancy status of the women, and is similar to rates reported for women in MBUs (Birmingham et al., 2006). Levels of depression and anxiety were lower than in pregnant women in US prisons (Fogel, 1993; Fogel & Belyea, 2001; Mukherjee et al., 2014). Whilst this may be in part due to the different prison regimes and research methodologies, a more robust diagnostic instrument was used in the current study. It may also be that women in the US studies were held in a prison where post-birth separation was policy, which would contribute to greater prevalence. Rates of anxiety and depression in the current study were higher than in prison MBUs and in mothers separated from their children (Birmingham et al., 2006; Gregoire et al., 2010). This may be in part due to being pregnant in prison, but also to not knowing, at the time of interview, whether they would retain custody of their child post-birth.

Prevalence of suicidal thoughts is close to the lower limit reported in the general population of perinatal women (Lindahl et al., 2005). Bearing in mind the particular circumstances of this group of women, and the high rates of depression and anxiety reported, this is an unexpected finding, particularly when considering the elevated rates of suicide and self-harm in prison populations. This may be explained by the reduced rates of suicide reported in the perinatal period (Healey, Morriss, Henshaw, Wadoo, Sajjad, Scholefield, et al., 2013), and to possible fear of revealing such thoughts, because of the perceived impact on MBU admission and child custody. Prevalence of personality disorder was also similar to previous studies (Birmingham et al., 2006; Fazel & Danesh, 2002; Gregoire et al., 2010).
The best predictors of admission to MBUs were; previous involvement with Children’s Services, (children taken into care or placed on child protection register), being in employment prior to incarceration, which had a positive association with admission, and history of suicide attempts and presence of personality disorder, which both had a negative association with admissions. This supports the previous findings, which found women from more ‘stable’ backgrounds were more likely to be resident in an MBU, and those with a personality disorder were less likely (Birmingham et al., 2006; Gregoire et al., 2010). Those who were experiencing depression, anxiety or prenatal depression were less likely to be given an MBU place, which also supports Gregoire et al’ s. (2010) suggestion, that women with mental disorders are less likely to be admitted to an MBU. As in a previous study (Birmingham et al., 2006), all the foreign national women who participated in the study were given an MBU place. It is not surprising that women who have had previous Children’s Services involvement with other children were less likely to be given a place, but it suggests that women who might successfully parent with support, may not be given an opportunity. It is also likely that foreign national women are less likely to be known to Children’s Services, therefore increasing the admission rate for these women.

Those women with mental disorder and personality disorder, and more complex histories and backgrounds, who might benefit most from the supportive MBU environment (Edge, 2006), appear less likely to be admitted. MBUs offer parenting support, and may increase the likelihood of mental health care, as staff may be more alert to the signs, and such support would benefit those women not admitted. The presence of untreated depression, anxiety and personality disorder in mothers does
not only pose a risk to the women themselves, but can also lead to poor attachment and later parenting difficulties (Talge et al., 2007; Glover, 2014; Sroufe et al., 2010; Johnson, Cohen et al., 2006; Bosquet & Egeland, 2000). These issues will very likely be exacerbated by separation and lack of support post-birth, and could be addressed during MBU residence. Many separated women will have contact with their children, may regain custody post-release, and go on to have further children, so it is important that mental disorder is treated as soon as possible.

Conclusion

For a group of women and children already disadvantaged through high levels of parental unemployment, drug and alcohol misuse and offending behaviour, the issues identified in this study highlight further risks for both mothers and children. The high levels of anxiety and depression need to be addressed, in order to reduce the risks to, and improve outcomes for their unborn children, as well as for the women themselves. The correlation between depression and anxiety in pregnancy and subsequent mental ill health, and risks to unborn children of future emotional and behavioural problems (Glover, 2014; Martini et al., 2015; O’Connor et al., 2002; Talge, Neal & Glover, 2007; Van den Bergh & Marcoen, 2004), highlights the need for better mental health care for pregnant women and new mothers in prison. Factors that may increase levels of anxiety and depression during pregnancy in prison, such as long waiting times for MBU decisions/not being allocated to MBUs, need to be addressed, and additional care and support provided for pregnant women and new mothers.
The presence of mental disorder and personality disorder, or perceived instability may prevent women from being given an MBU place, despite the fact that MBU placement can have positive impacts, in terms of reduced recidivism, and improved attachment and mental health (Byrne et al., 2010; Dolan et al., 2013; Goshin et al., 2013). Women with treatable mental disorder, personality disorder, and more complex backgrounds should be supported in their applications, as pre-existing mental ill health and disadvantage should not be a bar to accessing MBUs, which can offer women support and stability in the important early months of their children’s lives. There are clear benefits of MBU residence, and it is important that those who might benefit the most have the opportunity to be admitted.

**Strengths**

- It is the first UK study to assess perinatal mental health and factors that contribute to MBU admission.
- It was powered to detect measurable effects.
- There was a consistent approach to data collection as all data was collected by one researcher.
- It was a national study that included all women’s prisons

**Limitations**

- Data was collected via self-report, and although some could be verified through other sources, the majority was based solely on participants self-report.
• Permission to access different prisons was staggered, therefore the sample may not be representative of all prisons.

• It was not possible to verify the proportion of pregnant women included in the sample, as the total number of pregnant women who gave birth in prison during the data collection period was unknown.

• It was not possible to include women who did not have a sufficient level of English, as there was no financial provision for interpreters.

• More participants were admitted to MBUs than not, meaning the small and unequal sample sizes made differences difficult to detect.

• The regression model does not account for the clustering of women within prisons. Whether this is accounted for by using fixed or random effects, it would be too restrictive in such a small sample. The effect of the adjustment would be larger Standard Errors and, thus, more conservative (larger) p-values. Thus, covariates cautiously postulated as being important in this exploratory analysis, may become non-significant upon adjustment for clustering.
6.2 Paper 2

Pregnant women in prison: Mother and Baby Unit admission and impact on mental health

Dolan, R., Shaw, J. & Hann, M.
**Abstract**

**Background**

There is limited research on the impact of prison mother and baby unit (MBU) residence. Research suggests women in MBUs have lower prevalence of mental disorder, but the reasons for this are unclear. Research from the US suggests higher rates of mother-child attachment for women resident in prison nurseries.

**Methods**

Eighty-five pregnant women were interviewed at baseline and 62 followed up in nine different prisons. The Edinburgh Postnatal Depression Scale (EPDS) was used to measure perinatal depression; the World Health Organisation Quality of Life (WHOQOL – BREF), to measure quality of life; and the Mother-to-Infant Bonding Scale (MIBS) for mother-child bonding.

**Results**

EPDS scores were higher at baseline than follow-up, suggesting lower levels of depression postnatally. Women admitted to MBUs had lower EPDS scores at baseline and follow-up, and the reduction in scores was greater in this group than women not admitted to MBUs. WHO-QOL scores were higher at follow-up than baseline, suggesting better quality of life at follow-up, on all four domains, except for the participants not admitted to MBUs on the Social domain, suggesting poorer perceived social support.
Conclusions

Findings suggest women with perinatal depression are less likely to be admitted to an MBU, and MBU placement may contribute to a reduction in perinatal depression. Increased QOL-BREF scores at follow-up suggest improved quality of life for all participants on all four domains except the social domain for women not admitted to MBUs, which may be a result of reduced social support post-separation.

Keywords: pregnancy, mental health, prison, mother and baby units

Background

Pregnancy Motherhood and in prison

It is estimated that two thirds of women in prison are mothers of children under the age of 18, and that a third of these children are under the age of five, with 8% under the age of 18-months (Caddle & Crisp, 1997). All women are pregnancy tested on reception into prison, however, information on the number of pregnant women is not centrally collected or collated. The true number of women who experience pregnancy and childbirth in custody is therefore unknown (Personal communication, Ministry of Justice, 2014; personal communication, HMPPS, 2014). It is estimated that over 600 women receive antenatal care in prison each year (Price, 2005), and that between 114 and 169 give birth during imprisonment (Hansard, 2005; Ministry of Justice, 2008).

In England, a woman who is sent to prison and gives birth to a child whilst in custody, or shortly before has two options; to apply for a place with her child in a prison mother and baby unit (MBU), or to have her child placed in alternative care outside
prison. There are currently five MBUs in England and 54 places for mothers. While research suggests that women with depression, personality disorder and a history of suicide attempts are less likely to get a place in a prison MBU (Dolan, Hann, Edge & Shaw, submitted; Gregoire, Dolan, Birmingham, Mullee & Coulson, 2010), little is known about the effects of MBU residence, or separation, for those women who give birth during imprisonment.

The best interest of the child is the main consideration for MBU admission (as well as the safety and welfare of other mothers and babies in the unit). After a woman has completed an application for MBU admission, the following criteria must be met in order to grant admission:

- There are no concerns about mother’s conduct and behaviours which may place her own and other mothers and children on the unit at risk.
- The applicant has provided a urine sample for a Mandatory Drugs Test (MDT) which tests negative for illicit substances.
- The applicant is willing to refrain from substance misuse.
- The applicant is prepared to sign a standard compact, which may be tailored to her identified individual needs.
- The applicant’s ability and eligibility to care for her child is not impaired by poor health or for legal reasons such as the child being in care or subject to a Child Protection Plan as a result of the applicant’s treatment of that child.

Benefits of MBUs

Amongst the considerations that led to the development of prison MBUs in England is the extensive evidence on the importance of early mother and baby attachment on children’s developmental outcomes (e.g. Bowlby, 1969; Ainsworth, 1990). Babies become attached to their main caregiver around the age of six months (Bowlby, 1969; Ainsworth, 1982), and if this attachment is broken between the age of six months and four years or possibly earlier, this can cause major psychological damage (Bowlby, 1969; Ainsworth, 1982). If the separation is sudden, or repeated, as will often be the case with imprisoned mothers, then the risk of developing a mental or personality disorder or learning difficulties in childhood or later in life is increased (Rutter, 1981). A strong attachment is a protective factor against other negative influences and reduces the impact of other risk factors (many of which will be present in children of imprisoned mothers) on later negative outcomes in life.

Perinatal depression can also have a negative impact on mother-infant interactions and attachment, which can impact a child’s emotional and cognitive development (Moehler, Brunner, Wiebel, Reck, & Resch, 2006; Puckering, 2004; Beck, 1999; Hay, Pawlby, Sharp, Asten, Mills & Kumar, 2001).

For children who lived with their mothers in a prison nursery in the US, rates of attachment were reported as higher than expected, but were less secure than those reported in community samples, and clinical samples (Borelli, Borelli, Goshin, Joestl, Clark & Byrne, 2010). Those babies who left prior to their mother’s release date, and therefore separated were less likely to have a secure attachment than those who remained in the prison nursery with their mother. Research by Byrne, Goshin & Joestl
(2010) supports this, suggesting that the experience of parenting within the supportive environment of a prison nursery increases secure attachment. Prison nurseries in the US are similar to prison MBUs in England, as they allow women to live with their infants in a separate part of the prison. Such findings highlight the need not only of avoiding separation in order to promote attachment, but also maintaining that attachment.

For women in prison nurseries in the US, 75% reported clinically significant depressive symptoms at some point during their prison nursery stay (Goshin, Byrne & Henninger, 2013). Plugge, Douglas and Fitzpatrick (2006) reported on the mental health of 500 women in prison, and found that they had a five times higher risk of mental disorder, than women in the general population (78% compared to 15%). In a systematic review of the prevalence of mental disorder in pregnant women in prison (Mukherjee, Pierre-Victor, Bahelah & Madhivanan, 2014) levels of depression and anxiety were high and depression was reported as high as 80% in some studies. The majority of studies included in these reviews were from the US, and support previous findings in this area, but do not assess the impact of pregnancy and imprisonment on mental health in prison in England.

Prison nurseries and prison MBUs differ in terms of the age limit of the children (12 months in the US, 18-months in the UK), and in the criteria for admission. Women in English prisons can apply for a place if they are pregnant and expect to be in prison after their child is born, or if they have a child under the age of 18-months in the community. In the US, only women who are pregnant and will give birth whilst in custody can apply for a place, and many states do not have prison nurseries at all.
Gregoire et al. (2010) suggest that MBUs may offer a safe and supportive environment for mothers who are vulnerable and this is supported by others (Corston, 2007; Edge, 2006). A recent systematic review (Dolan et al., 2018b), found little published research on the impact of prison MBUs in England. However, there is research on the mental health of women in MBUs and on women separated from their infants while in prison. Levels of mental disorder were lower in mothers in MBUs (60%; Birmingham, Coulson, Mullee, Kamal & Gregoire, 2006) than for mothers in prison who were separated from their babies (90%; Gregoire et al., 2010). They had lower levels of depression (29%) and anxiety (2%) Birmingham et al., 2006), than women who were separated from their babies in prison (42% and 17%; Gregoire et al., 2010). It is however not clear how much of this is due to pre-existing factors or to MBU residence (Gregoire et al. 2010), because participants were only interviewed after their children were born, and once they had or had not been admitted to MBUs, and it may be that the admissions procedure itself is more likely to exclude women with pre-existing mental disorders (Birmingham et al., 2006; Gregoire et al., 2010). In a post-release follow-up study of mothers of young babies in England who were and were not admitted to MBUs, lower levels of mental disorder, substance misuse and recidivism in women who had been resident in MBUs were found compared to women not admitted to MBUs who were separated from their infants (Dolan et al., 2013). There may be two factors affecting the lower levels of mental disorder and depression in women who are admitted. Those with mental disorder may be less likely to apply, or be given a place, because of their own and others’ perceptions of behaviour which may be linked to mental disorder. The
supportive environment may also reduce levels of mental disorder, whilst separation may exacerbate them.

Quality of life

For all women pregnancy is a life changing event, as is imprisonment, and both will likely have negative impacts on an individual’s quality of life. Stressful events, anxiety and depression during pregnancy can reduce quality of life and lead to adverse outcomes (Brown, Yelland, Sutherland, Baghurst & Robinson, 2011), but the effects of this can be reduced through social support (Divney, Sipsma, Gordon, Niccolai, Magriples & Kershaw, 2012). Poorer quality of life during pregnancy can impact the level of perceived stress experienced (Lau, 2013; Shisheghar, Dolatian, Majd & Bakhtiary, 2013). Mooney, Hannon, Barry, Friel and Kelleher (2002) looked at general quality of life in female prisoners in Ireland and reported that it was lower than in women in the general population and also than in male prisoners. There appear to be no published studies to date that have looked specifically at quality of life in pregnant women or new mothers in prison.

The current study

Whilst there is research on the mental health impacts of prison nurseries in the US, and the differences in mental health between women who are and are not admitted to prison MBUs in England, there are no current published studies that compare women during pregnancy and after they have been admitted to a prison MBU or separated from their children. Little is known about the quality of life of this group of women, or of the attachment between mothers and babies in MBUs. The aims of the current study were to compare levels of perinatal depression and
quality of life, antenatally and postnatally for women in prison; to compare women who were and were not admitted to MBUs on measures of perinatal depression and quality of life; and to measure levels of mother-child attachment in women who retained custody of their children, or had regular contact.

Methods

Participants & recruitment

A non-probability consecutive approach to sampling and participant recruitment was utilised, because the size of the target population was unknown. The aim was to approach all potential participants in all female prisons, until the end of the data collection period, or until the minimum required sample size was recruited. A formal sample size calculation was carried out, but it became apparent during data collection that this target would not be met.

Twelve women’s prisons were approached and granted permission for the research. A total of 89 women who met the criteria for participation were identified. Four women declined to participate, and a total of 85 pregnant women from 8 prisons completed the initial interview, and 62 completed follow-up.

Inclusion criteria

- Women who were pregnant and expecting to be in prison at their due date and at least 6 weeks post due date were eligible to participate.
- Women who had a sufficient level of English to participate.

Exclusion criteria

- Women who were planning to terminate their pregnancy.
• Women judged by healthcare services to be incapable of giving informed consent

Measures

A questionnaire to gather socio demographic information, criminal history, and information on MBU applications was developed for this study.

The Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden & Fagovsky, 1987) was used to measure pre-natal and post-natal depression. It is one of the most widely used measures for postpartum depression (Boyd, Le & Somberg, 2005), and has been validated for antenatal depression (Eberhard, Eskild, Tambs, Opjordsmoen & Samuelson, 2001). It consists of 10 items and generates a maximum score of 30. Higher cut off scores of 13 are recommended in the antenatal period compared with 10 postnatally (Murray & Cox, 1990; Felice, Saliba, Grech & Cox, 2006). The sensitivity of the EPDS is estimated to be approximately .80 with a specificity of approximately 0.90 when a cut off score of 13 is used for post-partum major depressive disorder (MDD).

The World Health Organisation Quality of Life (WHOQOL – BREF; WHO, 1998) measured quality of life during pregnancy and post-birth. It is a shorter alternative to the WHOQOL-100, and consists of 26 items which provide four domain scores, measuring physical health, psychological health, social relationships and environment. Internal consistency has been reported as excellent (0.92) and test–retest reliability good (Skevington, Farah & McCrate, 2011).
The Mother-to-Infant Bonding Scale (MIBS; Taylor, Atkins, Kumar, Adams & Glover, 2005) is a general population screen and consists of items relating to emotional responses, which are rated on a 4 point Likert scale. A high score indicates poor mother-to-infant bonding. It is reported to have good internal consistency (Taylor et al., 2005).

All questionnaires were researcher administered in order to maximise response rates. Women in prison often have complex mental health problems, lower literacy levels and are harder to engage than the general population. Previous research suggests they welcome the opportunity to talk to somebody different, and that it breaks the routine of prison life, also increasing the likelihood of participation (Birmingham et al., 2006; Gregoire et al., 2010; Dolan et al, 2013).

**Procedure**

Potential participants were identified from weekly prison pregnancy lists. The study was explained to all potential participants, and those who met the criteria were given a participant information sheet (PIS). Those who agreed to participate were asked to complete an interview at a time convenient to them. Prior to interview all participants had the research explained orally, were given the opportunity to ask questions, and were asked to sign an informed consent. Interviews lasted approximately 1-2 hours.
Data analysis

Data was analysed using SPSS for Windows v21 (IBM, 2012). Data collected via interview and pro-forma was categorised into numerical form to represent the variables so that statistical analyses could be undertaken. Summary statistics were calculated for continuous variables and frequencies were calculated for categorical variables. A logistic regression was carried out to identify any differences between those who did and did not complete a follow-up interview. Independent samples t-test were run to compare the mean difference in EPDS and WHOQOL-BREF scores before and after childbirth. Paired samples t-tests were run to compare differences between pre- and post-natal scores.

Ethics and Research Governance

Initial ethical approval from the National Research Ethics Service (NRES) was granted on 5th December 2014. Permission from the National Offender Management Service National Research Committee (NRC) was granted on 10th February 2015. Permission from individual prisons was staggered over a 20 month period (February 2015 - November 2016), and 8 of the 12 prisons that granted permission reported having pregnant prisoners during the data collection period.

Results

The mean age of participants was just under 28 years old, and the majority were born in the UK or Irish republic (87%), and were white British (69%). Just over half (54%) reported being married or co-habiting immediately prior to imprisonment, the
majority were unemployed (61%) and almost all were living in their own home (85%; either owned or rented) prior to imprisonment. Just over a third (37%) had been homeless at some point, with 5% being homeless on imprisonment. Most were sentenced at the time of interview (80%), and the mean sentence length was approximately 15 months, with almost a third (29%) convicted of dishonesty offences, and almost a quarter of drug related offences (24%). Two thirds (66%) had no previous convictions, and less than a third (32%) had previously been in prison. Three quarters had at least one other child born prior to the current sentence (total of 149 children). The majority were in the care of their father (41: 27%) or other immediate family member (52: 37%). Over half (63%) were aged 10 or below, 60 (40%) of these were under the age of 5. A more detailed explanation of the demographic variables can be found in Dolan et al (2018a submitted for publication).

A paired samples t-test found mean scores were significantly higher at initial interview (M 10.69, SD 8.41) than follow-up (M=7.64, SD =6.97) for all participants, t (58) = 2.73, p = 0.008. Scores for the MBU group were lower at initial interview and follow-up than for the non-MBU group (Table 1).
Table 1. Means and SDs for EPDS before and after birth of child, and for MBU and non-MBU participants

<table>
<thead>
<tr>
<th></th>
<th>First interview</th>
<th>Women completing follow-up only (n=58)</th>
<th>Follow-up interview (n=59)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All women (n=84)</td>
<td>Mean (SD) 11.5  (8.25)</td>
<td>Mean (SD) 10.69  (8.41)</td>
<td>Mean (SD) 7.58  (6.95)</td>
</tr>
<tr>
<td></td>
<td>Range 0-29</td>
<td>Range 0-26</td>
<td>Range 0-24</td>
</tr>
<tr>
<td></td>
<td>Score of 13+</td>
<td>Score of 13+ 21 (36%)</td>
<td>score of 10+ 21 (36%)</td>
</tr>
<tr>
<td></td>
<td>score of 15+</td>
<td>score of 15+ 19 (33%)</td>
<td>score of 15+ 10 (17%)</td>
</tr>
<tr>
<td></td>
<td>(minor &amp; major depression)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBU first interview (n=55)</td>
<td>Mean (SD) 9.89  (8.30)</td>
<td>Mean (SD) 9.21  (8.06)</td>
<td>Mean (SD) 6.25  (6.28)</td>
</tr>
<tr>
<td></td>
<td>Range 0-29</td>
<td>Range 0-26</td>
<td>Range 0-21</td>
</tr>
<tr>
<td></td>
<td>Score of 13+</td>
<td>Score of 13+ 14 (29%)</td>
<td>score of 10+ 13 (27%)</td>
</tr>
<tr>
<td></td>
<td>score of 15+</td>
<td>score of 15+ 12 (25%)</td>
<td>score of 15+ 6 (13%)</td>
</tr>
<tr>
<td></td>
<td>(minor &amp; major depression)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>non-MBU first interview (n=16)</td>
<td>Mean (SD) 15.50 (7.17)</td>
<td>Mean (SD) 17.8  (6.44)</td>
<td>Mean (SD) 13.36 (6.92)</td>
</tr>
<tr>
<td></td>
<td>Range 0-26</td>
<td>Range 8-26</td>
<td>Range 4-20</td>
</tr>
<tr>
<td></td>
<td>Score of 13+</td>
<td>Score of 13+ 7 (64%)</td>
<td>score of 13+ 8 (73%)</td>
</tr>
<tr>
<td></td>
<td>score of 15+</td>
<td>score of 15+ 7 (64%)</td>
<td>score of 15+ 4 (36%)</td>
</tr>
<tr>
<td></td>
<td>(minor &amp; major depression)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(major depression)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
An independent samples t-test was run to compare the mean difference in EPDS scores before and after childbirth, between women who did and did not get a place in an MBU. There was no significant difference between those who did (M=3.36, SD=9.59) and did not get a place (M=2.98, SD=8.34), t (56) = .134, p=.894. However, because of the unequal sample size and the small number of women in the non-MBU group, only large differences would be significant.

A Hotelling’s T-squared test was carried out on all four domains simultaneously and found scores were significantly higher at follow-up than initial interview F (4,55) = 4.57; p=0.003. Hotelling’s T-squared test was also used to compare the MBU group with the non-MBU group and found that there was no significant difference between groups F (4,54) = 0.54, p=0.708. Scores on all four domains were higher at follow-up than initial interview and scores for the MBU group were higher at initial interview and follow-up than for the non-MBU group. They were also higher on all four domains for the MBU group at initial interview than follow-up interview. For the non-MBU group they were higher on all domains at follow-up, except for the social domain (Table 2).

A multivariate regression analysis was carried out to compare the mean differences in scores at baseline and follow-up, and there was no statistically significant difference in changes in quality of life measures between those who were and those who were not admitted to MBUs, F (4, 54) = 0.538, p = .708; Wilk’s Λ = 0.962, partial η² = .038.
Table 2. Means and SDs for QOL-BREF before and after birth of child, and for MBU and non-MBU participants

<table>
<thead>
<tr>
<th>QOL-BREF first interview (n=83)</th>
<th>QOL-BREF follow-up interview (n=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical health</td>
<td>Physical health</td>
</tr>
<tr>
<td>67.18 (SD 16.75)</td>
<td>76.67 (SD 18.16)</td>
</tr>
<tr>
<td>Psychological</td>
<td>Psychological</td>
</tr>
<tr>
<td>55.83 (SD 20.02)</td>
<td>66.78 (SD 18.18)</td>
</tr>
<tr>
<td>Social relationships</td>
<td>Social relationships</td>
</tr>
<tr>
<td>66.52 (SD 15.61)</td>
<td>67.17 (SD 14.52)</td>
</tr>
<tr>
<td>Environment</td>
<td>Environment</td>
</tr>
<tr>
<td>43.89 (20.13)</td>
<td>52.87 (SD 18.64)</td>
</tr>
</tbody>
</table>

QOL-BREF MBU group first interview (n=55) (n=49)

| Physical health               | Physical health                   |
| 69.20 (16.51)                 | 77.24 (18.20)                     |
| Psychological                 | Psychological                      |
| 58.87 (21.14)                 | 67.82 (18.77)                     |
| Social relationships           | Social relationships               |
| 66.67 (16.41)                 | 68.08 (13.52)                     |
| Environment                   | Environment                        |
| 43.53 (20.93)                 | 53.61 (18.36)                     |

QOL-BREF non-MBU group first interview (n=16) interview (n=11)

| Physical health               | Physical health                   |
| 64.25 (16.19)                 | 74.09 (18.65)                     |
| Psychological                 | Psychological                      |
| 49.67 (14.97)                 | 62.18 (15.17)                     |
| Social relationships           | Social relationships               |
| 67.07 (13.70)                 | 63.09 (18.54)                     |
| Environment                   | Environment                        |
| 44.87 (13.72)                 | 49.55 (20.46)                     |

Mother child bonding scores on the MIBS ranged from 0-6. Forty-seven out of a total of 51 women had MIBS scores of 0, one participant had a score of 2, one had a score of 4 and two had a score of 6. Only four participants who were separated from their
children completed the MIBs (none of the others had contact with their child), and all scored 0.

**Discussion**

The differences in depression may be because women who chose not to participate in the follow-up, or to complete all the measures, may have done so because they were depressed, and felt less able at that time to participate. Those admitted to MBUs may have been more likely to participate, as they were easier to locate and access, and because of their circumstances may have been more willing to participate than women who had experienced the recent trauma of separation from their child.

The high levels of perinatal depression in both groups support previous research in this area, both for women in prison nurseries and women in prison MBUs. Although levels are lower than in some studies (Goshi et al., 2013; Mukherjee et al., 2014; Plugge et al., 2006), the results prenatally are similar to those reported by Gregoire et al (2010) for women in prison separated from their babies, and the postnatal results for women in MBUs are also similar to those from the Birmingham et al., (2006) study of women in MBUs. Prevalence of depression is higher in women who did not get an MBU place prenatally and postnatally. For both groups, there was a reduction in the mean score for depression, and whilst this was not significant, this reduction was greater for those admitted to MBUs. This may be, in part, due to expected or actual separation from their babies. Whilst results must be interpreted with caution, due to the small sample sizes, higher levels of depression in women
who were not admitted to MBUS supports previous findings that women may be less likely to apply or be given a place in an MBU if they have a mental disorder (Gregoire et al., 2010), and also that MBUs may serve as a protective factor against developing or exacerbating postnatal depression (Gregoire et al., 2010).

Quality of life scores in all four domains were lower in women who did not get an MBU place prenatally and postnatally, suggesting poorer perceived quality of life. For both groups, increased postnatal scores suggest some positive changes. At follow-up the physical symptoms of pregnancy would no longer be experienced, and most postnatal complications and discomforts would have been resolved. The lowest scored domain overall was the environment domain. Prison is unlikely to be perceived as a positive, healthy environment, and despite the many additional benefits of MBU residence, an MBU is still not home, with the comforts that would offer. The social domain scores, which increased slightly for women in MBUs, decreased for those not admitted to MBUs, suggesting poorer social quality of life post-separation. Women may have felt more supported during pregnancy, and may have established social relationships with other women due to their pregnancy status, as well as with MBU liaison staff. They would also have attended midwife appointments and may have had meetings with social workers, and whilst these are professional relationships, they may have offered some level of social support to women during a difficult and vulnerable period. Many would have attended antenatal classes, where they would have developed relationships with other pregnant women, and staff. Postnatally, the majority of this ‘support’ would have ended for those separated from their children. Whilst women in the MBUs had very
similar levels of quality of life in terms of social relationships prior to giving birth, this continued at a similar, but slightly higher level post-birth, and this is most likely related to the ongoing support offered by the MBU environment, and the relationships they would have with other mothers residing there.

The analysis of the MIBS scores offers some insight into the attachment of mothers and babies in prison. For those who were separated, the majority had no contact, or very little contact post-birth with their babies. For this reason, it was not possible to complete the MIBS with the majority of those who were separated. For women who have recently experienced, in many cases, a forced separation from their new born child, such questions are not only extremely difficult to answer, but also insensitive in light of obvious distress.

For those who did complete the MIBS, scores suggested high rates of strong attachment. This may suggest that MBUs offer the opportunity to develop a strong attachment, as has been suggested in previous research in prison nurseries in the US (Goshin et al., 2013; Byrne et al., 2010). The majority of participants scored the best possible attachment score. When looking at these findings, it is important to bear in mind, not only the opportunities for attachment that MBUs may offer, but also the fear that many women might have in the circumstances regarding custody of their children. This may have influenced their answers and meant they did not necessarily feel they could be as open and honest as they would in the community.
Conclusion

The current findings suggest women admitted to MBUs have lower levels of perinatal depression and higher levels of perceived quality of life, both before and after their children are born and before and after they are admitted to MBUs. Whilst these differences are not significant, they do support previous research in this area, and therefore add to the body of evidence that not only suggests mental disorder may be a barrier to MBU admission, but that MBUs may also have a positive impact on mental well-being. Mental disorder, particularly treatable mental disorder should not prevent MBU admission, especially if MBU residence functions as a protective factor. Perinatal mental health screening could identify women with mental disorder prior to the MBU application, and these women could then be offered additional support through this process in order to improve the possibility of applying for and being given an MBU place.

Perceived quality of life was similar for both groups during pregnancy, except in the psychological domain, reflecting the higher levels of mental distress already present in the group that would be separated from their children. The lower levels of quality of life in the social domain for women separated from their children, suggest a need for greater support for this group post-separation. The likely withdrawal of much of the previous support they would have received prior to the birth may well have exacerbated negative perceptions of social support post-birth. It also highlights that women who need support post-birth the most, are unlikely to be getting this.
Future research needs to examine the levels of perinatal depression and quality of life in a larger sample, and to explore why the presence of perinatal depression may be a barrier to accessing MBUs for some women. Levels of postnatal support for women separated from their babies born during imprisonment needs to be increased in order to support women experiencing the trauma of separation from their new born infants.

**Strengths**

- It is the first UK study to assess perinatal mental health and quality of life antenatally and postnatally.
- It was powered to detect measurable effects.
- There was a consistent approach to data collection as all data was collected by one researcher.
- It was a national study that included all women’s prisons

**Limitations**

- Data relied solely on participants self-report.
- Permission to access different prisons was staggered, and there were additional obstacles to entering some prisons throughout data collection, therefore a higher proportion of participants may have been recruited from some prisons, meaning the sample may have been somewhat biased.
- It is not possible to verify the proportion of pregnant women that were included in the sample, as the total number of imprisoned pregnant women who gave birth during the data collection period is unknown.
• It was not possible to include women who did not have a sufficient level of English, as there was no financial provision for interpreters.

• The sample size is relatively small, more complex analysis could not be undertaken, and all results should be interpreted with caution.

• It is not possible to establish if the sample is representative of the population of imprisoned pregnant women.

• Participants who completed both initial and follow-up interviews were generally similar on demographic details, expect that those with a diagnosis of depression were less likely to complete the follow-up interview, and those in MBUs were more likely to complete the follow-up interview compared to those who were not given a place, but these differences were not significant.
6.3 Additional results

6.3.1 Introduction

There were some additional results which are relevant to the overall findings of the study, but there was not sufficient space in the papers written for publication, to include these findings. Data was collected on current and previous pregnancy and details of antenatal care, the birth of the children born to the women whilst they were in custody, and drug misuse during pregnancy. Information is also included on MBU applications. Data was also gathered on previous mental health care and diagnosis, additional symptoms of mental distress, not classified as specific diagnoses and on specific personality disorders. This is followed by a brief discussion, considering the current findings in the context of previous research.

6.3.2 Pregnancy, childbirth & MBU applications

Eighty (94%) of the 85 participants reported that they had seen a midwife at least once since arriving in prison. The four women who had not seen a midwife at the time of interview had recently arrived in prison and were expecting to see one within the following two weeks. Fifty-eight (69%) also reported having seen the GP at least once since arriving in prison, and the majority reported that this was related to their pregnancy.
Table 6. Previous pregnancies and babies born during custody

<table>
<thead>
<tr>
<th></th>
<th>Count (%)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number of pregnancies</td>
<td>3.58 (SD 2.05)</td>
<td>0-9</td>
</tr>
<tr>
<td>Previously miscarried</td>
<td>26 (31%)</td>
<td>1-3</td>
</tr>
<tr>
<td>Previous terminations</td>
<td>13 (15%)</td>
<td>1-3</td>
</tr>
<tr>
<td>Previous stillbirths</td>
<td>3 (5%)</td>
<td></td>
</tr>
<tr>
<td>Type of birth (n=58)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>36 (62%)</td>
<td></td>
</tr>
<tr>
<td>Planned caesarean</td>
<td>11 (19%)</td>
<td></td>
</tr>
<tr>
<td>Emergency caesarean</td>
<td>7 (12%)</td>
<td></td>
</tr>
<tr>
<td>Ventouse/forceps</td>
<td>2 (3%)</td>
<td></td>
</tr>
<tr>
<td>Induced</td>
<td>3 (5%)</td>
<td></td>
</tr>
<tr>
<td>Gestation (weeks)(n=60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 39.20 (1.97)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range 32-42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birthweight (kilograms) (n=60*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean 3.053 (SD 0.540)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range 0.934 – 4.128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (n=60*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>35 (58%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25 (42%)</td>
<td></td>
</tr>
</tbody>
</table>

* Includes two sets of twins

Forty-three (51%) reported that they smoked (mean number per day 8, range 2-20).
Twenty-one (25%) participants reported drug misuse during pregnancy. Of these the most commonly misused drugs were cannabis (13: 15%), heroin (13: 15%), cocaine/crack (11: 13%), with a small number misusing benzodiazepines (3: 4%). Fifteen (18%) reported misusing two or more of these drugs during pregnancy.
Eighty-three (99%) participants reported that they had been given information about prison MBUs at the time of interview, and 69 (82%) had applied. Not all women had received information from prison staff, and some women were working on the application (Table 6). Of the women who had acquired information from other
sources, this was from their own research prior to being sent to prison, from solicitors or sentencing judges, or from family members research.

Table 7. MBU information and applications

<table>
<thead>
<tr>
<th>Source of MBU information</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff member</td>
<td>38 (45%)</td>
<td></td>
</tr>
<tr>
<td>MBU information booklet</td>
<td>2 (2%)</td>
<td></td>
</tr>
<tr>
<td>Other inmates</td>
<td>8 (9%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>32 (38%)</td>
<td></td>
</tr>
<tr>
<td>No information</td>
<td>2 (2%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MBU applications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied</td>
<td>69 (81%)</td>
<td></td>
</tr>
<tr>
<td>In process</td>
<td>2 (2%)</td>
<td></td>
</tr>
<tr>
<td>Not yet</td>
<td>3 (4%)</td>
<td></td>
</tr>
<tr>
<td>Not applied/no plans to apply</td>
<td>10 (12%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reasons for not applying (n=10)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Early release (soon after birth)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>On remand/unsentenced</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Type of crime</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Children’s Services</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>4 (40%)</td>
</tr>
</tbody>
</table>

6.3.3 Mental health

Twenty-nine (34%) women reported that they had previously seen a psychiatrist or other mental health professional. Seven of these stated that this was for a report only, and one had only seen a mental health professional as a child. A total of 20 (24%) women reported a previous mental health diagnosis. Of these 20 women, five (6%) women were diagnosed with more than one disorder (Table 8). Twelve (14%) of the women reported that they had received outpatient treatment only for a mental disorder and six (7%) had also been inpatients.
Table 8. Previous mental health history and current treatment

<table>
<thead>
<tr>
<th>Current mental disorder</th>
<th>65 (77%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality disorder 45</td>
<td>45 (53%)</td>
</tr>
<tr>
<td>Current personality disorder and/or mental disorder</td>
<td>72 (85%)</td>
</tr>
</tbody>
</table>

Previous mental health diagnoses (self-reported; n=20)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bipolar</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>Postnatal depression</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>Personality disorder</td>
<td>4 (20%)</td>
</tr>
<tr>
<td>Post-traumatic stress disorder</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>Depression</td>
<td>7 (35%)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>Frontal lobe disorder</td>
<td>1 (5%)</td>
</tr>
</tbody>
</table>

Prescribed medication on arrival in prison (n=29)

<table>
<thead>
<tr>
<th>Medication</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzodiazepines</td>
<td>4 (14%)</td>
</tr>
<tr>
<td>Opiates</td>
<td>16 (55%)</td>
</tr>
<tr>
<td>Anti-depressants</td>
<td>17 (59%)</td>
</tr>
<tr>
<td>Sleeping medication</td>
<td>1 (3%)</td>
</tr>
</tbody>
</table>

Twenty-nine (34%) of the women reported that they were taking prescribed medication when they arrived in prison, and the majority of these were taking heroin substitutes (methadone or Subutex) and nine of them were taking more than one form of prescribed medication (Table 7). Eighteen (21%) women had been seen at least once by the prison mental health services during their current imprisonment. Of the women identified with some form of mental disorder or personality disorder in the current study 20 (28%) had a previous diagnosis and 17 (24%) had been seen by mental health staff since arriving in prison. Of those who had a previous diagnosis 10 (50%) had been seen by prison mental health staff.
A number of women reported additional symptoms of mental distress in addition to symptoms of diagnosable mental disorders.

Table 9. Symptoms of mental distress and personality disorders by type

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Worrying</td>
<td>60 (71%)</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>12 (14%)</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>20 (24%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>28 (33%)</td>
<td></td>
</tr>
<tr>
<td>Loss of concentration</td>
<td>31 (37%)</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>3 (4%)</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>12 (14%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>16 (19%)</td>
<td></td>
</tr>
<tr>
<td>Loss of energy</td>
<td>29 (34%)</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>4 (5%)</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>8 (9%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>17 (20%)</td>
<td></td>
</tr>
<tr>
<td>Sleep problems</td>
<td>35 (41%)</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>24 (28%)</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>2 (2%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>9 (11%)</td>
<td></td>
</tr>
<tr>
<td>Avoidant</td>
<td>9 (11%)</td>
<td></td>
</tr>
<tr>
<td>Dependent</td>
<td>5 (6%)</td>
<td></td>
</tr>
<tr>
<td>Obsessive compulsive</td>
<td>10 (12%)</td>
<td></td>
</tr>
<tr>
<td>Passive aggressive</td>
<td>7 (8%)</td>
<td></td>
</tr>
<tr>
<td>Self-defeating</td>
<td>11 (13%)</td>
<td></td>
</tr>
<tr>
<td>Paranoid</td>
<td>31 (37%)</td>
<td></td>
</tr>
<tr>
<td>Schizotypal</td>
<td>3 (4%)</td>
<td></td>
</tr>
<tr>
<td>Schizoid</td>
<td>5 (6%)</td>
<td></td>
</tr>
<tr>
<td>Histrionic</td>
<td>1 (1%)</td>
<td></td>
</tr>
<tr>
<td>Narcissistic</td>
<td>2 (2%)</td>
<td></td>
</tr>
<tr>
<td>Borderline</td>
<td>11 (13%)</td>
<td></td>
</tr>
<tr>
<td>Antisocial</td>
<td>21 (25%)</td>
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</tr>
</tbody>
</table>

6.3.4 Discussion

The vast majority of women had already been seen by a midwife at least once prior to the first interview, and those that had not been seen, were newly arrived in prison and were expecting to see a midwife in the next one-two weeks. Just over two thirds
had also seen the prison GP since arrival. This suggest that women were receiving sufficient antenatal care, on a par with what women would receive in the community. This contradicts the findings of Knight and Plugge’s (2005) meta-analysis, where almost a third of women in prison did not receive adequate perinatal care in prison. However, only one of the 13 papers included was from the UK with the majority from the US, where health care provision is different. Nine of the 13 papers were published prior to the year 2000, with the one UK study published in 1985, and health care in prison will have changed over the period since. In some cases, the antenatal care was likely better than that provided in the community for those who may not have accessed it previously, and for the women who may not have known until they arrived in prison that they were pregnant.

The majority of women were full-term when their children were born, and had a normal birth, with just over one third receiving some form of medical intervention, and the mean birth weights were slightly below that reported for babies born in England and Wales for 2012 (Ghosh, Berild, Sterrantino, Toledano & Hansell, 2017). Fewer women smoked than reported in previous research (Knight & Plugge, 2006), but this again may be related to the geographical location of previous research, and changes in the prevalence of smoking since the research was carried out. The quarter of women that had misused drugs during pregnancy is lower than that reported in pregnant women in previous research, and lower than in the general prison population. The previous findings on drug misuse during pregnancy in prison was carried out in the US, which may account for the higher levels reported. Lower levels of drug misuse when compared to the general female prison population in England and Wales are likely, at least in part, due to the pregnancy status of the women in
this study. There may other factors that might contribute to this, including unknown bias in the current sample, such as easier access to women who do not have complex drug misuse and mental health problems.

The finding that only one participant was not aware of prison MBUs was a positive finding and a slight in improvement on the findings previously reported for this (Gregoire et al., 2010). However, of concern is that almost half of the women did not get MBU information from prison staff, but received or discovered information from other sources. Information from other inmates, whilst it may be useful in the absence of any other information, may also be incomplete and unreliable at best, and incorrect and misleading at worst. This is also true for information from other sources, including solicitors and judges, who whilst supporting women and explaining their options, may unwittingly be giving misleading information (e.g. if you have your baby in prison you will go to a mother and baby unit), and are unlikely to be familiar with the application and decision-making procedure from MBUs. Only a very small number of women had no plans to apply at the time of the first interview, and the reasons for almost half were related to their unsentenced status or expected/hoped for release shortly after their child was born. Whilst only a small proportion of those who were on remand or had not been sentenced were included in the overall sample (just under a fifth), they were not disproportionately represented in the group who did not apply, suggesting that in the current sample this did not function as a deterrent to applications, as has been previously suggested (Birmingham et al., 2006).
Just over a third of the women reported that they had previously seen a mental health professional and of these, just under a quarter had received a diagnosis. In prison only 18 women had been seen by mental health services, and yet almost all of the women had some form of current mental disorder or personality disorder. This is similar to previous findings that also found high prevalence of mental disorder in new mothers in prison, but little mental health care provision (Birmingham et al., 2006; Gregoire et al., 2010). The consequences of undiagnosed and untreated mental disorder for mothers and children can be severe and life-long. Knowing that pregnancy is a time of increased risk, and that for pregnant women in prison there is an opportunity for intervention (Edge, 2006; Gregoire et al., 2010), it appears such opportunities are currently being missed.

High numbers of women reported other symptoms of mental distress, with more than three quarters reporting higher than usual levels of worrying, and almost half were experiencing sleep problems. These additional signs of mental distress would very likely affect the women’s mental and physical health during their pregnancy, and also have negative impacts on their unborn children.
7. Qualitative Results

7.1. Paper 3

Experiences of pregnancy, childbirth and motherhood in prison

Dolan, R., Edge, D., Hann, M. & Shaw, J.
Abstract

Each year, approximately 600 women receive antenatal care and 120 women give birth whilst in English prisons. Pregnant women in prison can apply for a place in a prison mother and baby unit (MBU). However, little is known about the lived experience of pregnant women and new mothers in prison. Most research to date has been carried out in the United States (US), and suggests pregnancy and childbirth in prison are negative, traumatic experiences, but prison nurseries can have positive impacts. The aim of this study was to explore the experiences of pregnancy, childbirth, separation and motherhood whilst imprisoned in England. Data were collected via 31 interviews with pregnant women, and 24 postnatal interviews. Framework Analysis was used to explore, summarise and report the data. Pregnant women reported feeling depressed, stressed and worried, mostly about what would happen to their unborn child, basic needs of nutrition and comfort were unmet, and emotional support varied. Lack of information compounded feelings of stress and many women reported giving birth without loved ones present. Whilst MBUs were generally positive and supportive environments, for those separated from their babies, this was traumatic and there was a lack of support post-separation.

Key words: Prison, pregnancy, motherhood, experience

Pregnant women in prison

Approximately 600 women receive antenatal care in prison in England, and around 120 give birth during imprisonment each year (Price, 2005; Ministry of Justice, 2008). For women who give birth during their time in custody, or shortly before, there are two options; they can either apply for a place with their child in a prison mother and
baby unit (MBU), or place their children in alternative care outside prison, usually with family or Children’s Services. There are six prisons with MBUs in England, providing 65 places for mothers and 69 for babies, although one is temporarily closed, meaning currently there is provision for 54 mothers and 57 babies. There is no guarantee of a place in an MBU; women must undergo an assessment process prior to a decision being made. They must complete an application form, and go before an admissions board, before a final decision is made. Little is known about the experience of being pregnant or giving birth in prison, the MBU application process, life in prison MBUs, or the experience of separation. What is known about the experiences of pregnant women and new mothers in prison mainly comes from the United States (US).

Experience of pregnancy, childbirth and motherhood in prison

Pregnancy & birth

Findings from the US suggest pregnant women in prison felt profoundly sad, apprehensive and stressed during pregnancy and this was perceived to have negative impacts on their unborn children (Wismont, 2000). Women also felt angry, regretful and depressed due to imminent separation, as well as isolated, with a feeling of loss of control over their pregnancy (Shelton & Gill, 1989). The overall experience of pregnancy in prison was generally negative, and most women had no support when they give birth (Shelton & Gill, 1989).

Hutchinson, Moore, Propper and Mariaskin (2008) and Fritz and Whiteacre (2016) reported women’s concerns about whether their children would remember them, and who would care for their children until they were released. The women in both
studies also reported feeling lonely with very little social support, and that their experience of pregnancy would have been better had they been in the community. Others felt their incarceration had had a positive impact, because of the opportunities offered for support, education and substance misuse treatment, similar to findings from MBUs in England (Edge, 2006; Birmingham, Coulson, Mullee, Kamar & Gregoire, 2006).

Women reported their birth experiences as traumatic, and the majority had no support from family or friends during labour (Fritz & Whiteacre, 2016). Women also had concerns about the use of restraints during labour and childbirth, as they were handcuffed on the journey to hospital, and at the hospital, they were chained to the bed, which participants found dehumanising (Fritz & Whiteacre, 2016). The approach to the use of constraints was inconsistent, depending on the guards on duty, with lack of a clear policy (Fritz & Whiteacre, 2016). Unlike England, the policy in many US states is enforced separation for women who give birth in custody.

**Prison nurseries**

US prison nurseries are similar to prison MBUs in the UK. Unlike the US, all eligible women in English prisons have the right to apply for a prison MBU place, although not all will be granted one. Women are allowed to stay with their babies in prison MBUs until they are 18-months old, and both pregnant women, and those who have a child under the age of 18-months in the community are eligible to apply. In the US, the age limit is 12 months, not all states have prison nurseries, and only women who are pregnant when they arrive in prison can apply. Women who were admitted to prison nurseries in the US reported that this was a positive experience, with caring
staff, and an opportunity for rehabilitation (Fritz & Whiteacre, 2016). Staff listened to the women and went beyond their assigned job role, which the women felt had a long-term positive impact (Fritz & Whiteacre, 2016). Other studies have also reported the positive impact of prison nurseries (Byrne, Goshin & Joestl, 2010; Goshin, Byrne & Henninger, 2013), including higher levels of mother-infant attachment and reduced recidivism for mothers in prison nurseries, but there has been little focus on the actual experience of living in a prison nursery. There appears to be no published research to date on the lived experience of prison MBU residence in England, although the limited evidence available suggests they are supportive and may reduce recidivism (Birmingham et al., 2006; Dolan, Birmingham, Mullee & Gregoire, 2013).

**Separation from infants**

Whilst there are only limited opportunities to maintain custody of a baby born during a period of imprisonment, there is little published research on the experience of separation in prison. Interviews with imprisoned mothers in one US prison, who were separated immediately after birth, found that although separation led to emotional pain, the women’s belief that they would be united after release brought some comfort at this difficult time (Chambers, 2009). Whilst separation was traumatic, this trauma could be mitigated somewhat depending on how it was managed by the guards, whilst negative attitudes from prison staff exacerbated the level of distress women experienced (Fritz & Whiteacre, 2016). Knowing that they would be separated also reduced the likelihood that women would breastfeed, despite provision for women to send breast milk out post-separation (Fritz &
Whiteacre, 2016). In England, whilst some imprisoned women are separated from their baby post-birth, little is known about this experience. It is known that these women are less likely to regain custody of these children post release, and are more likely to misuse drugs and return to prison (Dolan et al., 2013).

Limitations of the previous research

The majority of the research has been carried out in the US, and little is known about the experience of women in other countries. In the Fritz and Whiteacre (2016) study data was only collected from women post-release, so relied on memory of their experience rather than current lived experience. Shelton and Gill (1989) only included the experiences of four ‘representative’ women from a sample of 26, and it was not reported how long women spent with their babies prior to separation. Wismount (2000) did not carry out interviews with participants, but data were instead recorded in journals. Whilst this allowed women to record their feelings, it also limited participation to those who were literate, the level of which would also impact these written accounts. Each of these studies recruited participants from only one prison, limiting the applicability of findings to the one setting accessed in each of the studies.

Although the previous research is limited because of sample size and composition, small number of prisons, and all being US based, it offers insight into the experiences of pregnancy and childbirth in prison. They do not however offer insight or understanding of the experiences of pregnant women and new mothers in prison in England, or the experience of MBU residence or separation, where the prison and health care systems are different. The aim of the current study was to explore the
experiences of pregnancy, childbirth, motherhood and separation whilst imprisoned in England.

Methods

Participants

All women who participated in the qualitative interviews were part of a larger mixed methods study of pregnancy and motherhood in prison. A purposive sampling approach was adopted for the qualitative interviews, as this was a pre-defined population (pregnant women in prison, who expected to be in prison at their due date; new mothers in prison a minimum of 6 weeks postnatal). Interviews with women at different stages of pregnancy (from approximately 12 weeks to 38 weeks), were carried out until data saturation was reached. A total of 31 initial interviews were completed with pregnant women, in seven of the nine prisons where data collection was carried out. Twenty-four follow-up interviews were completed after women had given birth, in eight prisons. Comparisons were not made between prenatal and postnatal qualitative interviews, and therefore two discrete samples were recruited. However, seven participants completed both pre- and postnatal interviews. Participants were not interviewed in all nine prisons, as one prison had no pregnant women, and one did not grant permission to record interviews.

Data collection

Semi-Structured Interviews

Semi-structured qualitative interviews allowed data collection to be structured, to focus on the specific aims and objectives of the study, and also allowed for the
inclusion of themes raised by the participants that recurred in the data (Rubin & Rubin, 1995).

**Qualitative interview topic guide**

Two topic guides (for pregnancy and post birth) were developed based on previous research carried out with pregnant women and mothers in prison (Birmingham et al., 2006; Gregoire, Dolan, Birmingham, Mullee & Coulson, 2010; Dolan et al., 2013; Hutchinson et al., 2008; Fritz & Whiteacre, 2016). The initial topic guides were piloted with women in the community and prison, and topics further refined for clarity and understanding for use in the current study. The topics focused on the following eight areas: Experience of pregnancy, childbirth and motherhood in prison, information they received related to their pregnancy and prison MBUs, MBU application process, mental illness, experience of the MBU residence and/or experience of separation.

**Procedure**

After quantitative data had been collected, the researcher explained what the qualitative interview would entail, including: aim/purpose, duration (30-60 minutes), confidentiality, and data anonymisation. Themes in the topic guide were discussed sequentially, unless topics were raised earlier in the interview. Additional topics that emerged were incorporated into subsequent interviews. All interviews were carried out in a private room, or a quiet part of the wing, and were recorded via digital voice recorder.
A second qualitative interview was carried out with a sample of women postnatally. Whilst some participants completed both an initial and follow-up interview, the majority of participants only completed one qualitative interview.

**Qualitative analysis**

The framework approach (Richie & Spencer, 1994) was used for data analysis. This approach was specifically developed for applied policy research, at the National Centre for Social Research, but has been increasingly applied in other research settings, including health research (Gale, Heath, Cameron, Rashid & Redwood, 2013). Whilst it was a time and labour-intensive approach, it was the most appropriate method for the current study, as it allowed the inclusion of a priori and emergent themes, and for others to see the different steps of the analysis process, how the results were obtained, and allowed in-depth analysis and understanding of the women’s experiences.

The analysis followed the stages (Richie & Lewis, 2003): verbatim transcription of interviews, familiarisation with the transcripts, assignment of codes (pre-defined codes, and codes for other themes that emerged), development of a theoretical framework, by two researchers (RD & RJ), application of this framework to the remaining transcripts, and adaptation to include new categories/themes. A matrix was generated and data were charted into the matrix by RD, which was reviewed by RJ. The final stage was interpretation of the data, themes were generated by reviewing the matrix and making connections both within and between participant and categories.
Quality and Methodological rigour

Lincoln and Guba (1985) suggest four quality criteria to ensure ‘trustworthiness’ in qualitative research. Whilst these criteria are not universally accepted, they are widely used and cited by qualitative researchers (Bryman, Becker & Sempick, 2008).

- Credibility - established via triangulation and the different data collection methods utilised in the wider study.

- Transferability - achieved via the detailed description of the methods, procedure and findings. Dependability - established through detailed documentation of the research procedures.

- Confirmability - via the clear and transparent documentation of the research steps and involvement of a second researcher in the analysis.

The researcher kept a reflexive journal, recording methodological decisions, the rationale for these decisions, and reflecting on researcher involvement, and the impact on the process and outcomes (Guba, 1985). Methodological rigour was ensured via discussion within the research team.

Results

Responses were categorised into four broad themes; experiences of pregnancy, experiences of the MBU admission process, experiences of birth in custody and experiences of motherhood in prison (in MBUs and post-separation), and sub-themes.
1. Experiences of Pregnancy

1.1. Mental health

Many women reported symptoms of mental distress pre- and postnatally, including depression, anxiety and stress, and they reported that these were often caused or exacerbated by their imprisonment. It was also felt that the stigma associated with having a mental disorder was increased when pregnant and in prison.

“…. every single month waiting to go to court and getting sometimes excited because, maybe I was thinking that maybe I can go home but every time it was no, and every month I got more depressed, more thinking, more crying, it was so horrible.” P1 (Pregnant, MBU prison).

“….. the stigma that comes with having mental health issues, it’s just absolutely unreal, it doesn’t make you a bad parent and being depressed doesn’t make you a bad parent.” P2 (Pregnant, MBU prison).

Despite the presence of mental disorder and distress, as well as pre-existing diagnosed conditions, participants felt they were not getting the support or information needed to manage current and pre-existing mental disorders during pregnancy, and only a minority reported receiving appropriate care.

“…. I have said I need some help. No one has come and spoken to me. I was supposed to be getting assessed for bipolar. Nothing.” P3 (Pregnant, non-MBU prison).

“…. they did a psychiatric report on me as part of my trial, and because I was diagnosed with PTSD outside, that report came with me to the prison…… they dealt with it as soon as I came.” P4 (Pregnant, MBU prison).
Stress, anxiety and worry were themes that emerged in the majority of pre-natal interviews, and this was most often related to being in prison during pregnancy, and not knowing if they would get an MBU place, but also to fears about giving birth during imprisonment, and not knowing what was going to happen.

“I was worrying ‘oh my God, am I going to get a place?’ She was like ‘don’t worry, don’t worry’ I was thinking ‘no I’m worrying’.” P5 (Mother, non-MBU prison).

Participants had to wait until quite late in their pregnancy, often until the last one or two months, for a decision on MBU admission, adding to stress and anxiety they were already experiencing.

“I think they should do things quicker you just have to wait and wait ….. I know it’s hard and that but at least a few months, I should know. I need to know what I am doing it stresses me out. People are telling me horror stories.” P4 (Pregnant, MBU prison).

Many of the women were also concerned that stress and anxiety during pregnancy would negatively impact their unborn child, and were concerned the prison did not offer support with this, either in terms of management or treatment, without which their children might be affected.

“… if you are on the outside, and you get told that you shouldn’t stress and worry, because that could affect your baby, then why are you not taken care of when you are in prison?” P6 (Mother, MBU resident).
For women who felt supported, the experience was still stressful, but this was moderated somewhat by information and support from staff, but this depended on the prison and staff on duty.

“Obviously you are anxious to know that you might not get the opportunity, but (the MBU liaison) is really good with working with us and making sure we do everything right.” P4 (Pregnant, MBU prison).

1.2. Hunger & discomfort

Hunger and the negative impact on mental health and quality of life was repeatedly raised by participants. According to women’s accounts, few allowances were made for being pregnant and almost all participants reported being hungry throughout their pregnancy. Food that was provided was not nutritious. Some women lost weight after arriving in prison, causing further concern and worry.

“..it is quite restricted to be honest with you, food wise and everything, and you get fed but there is not enough. There is nowhere near enough ...., they don’t give you enough milk you only get two cartons, and I don’t think that is enough the fruit is quite terrible it’s horrible”. P7 (Pregnant, non-MBU prison).

“I’m quite a slim person as it is, and I have lost over a stone so that is not a good thing. That is why they are taking me for another scan, a growth scan because they are worried because I’m skinny. That’s the thing, it wouldn’t be like that on the outside I’d be completely healthy and that’s what scares me ....” P8 (Pregnant, MBU prison).
Other women had to make the choice between buying additional food via the prison canteen system and using their money for telephone credit so that they could call family, partners, and friends.

“….I don’t buy canteen, because I spend all my money on (phone) credit, so really all I get is that (extra milk and piece of fruit) and then obviously the meals”. P9 (Pregnant, MBU prison).

Little attention was paid to other physical needs of pregnancy. Extra mattresses and pillows to help with pregnancy related issues such as back pain and swollen ankles were not routinely provided, despite the widely held belief (although no official policy) that they should be, and depended on the prison and individual staff members.

“I had to fight for that … make lots of complaints and application forms, and so I don’t have a pillow yet. I have a mattress. It made a huge difference because I was in a lot of pain every day …” P10 (Pregnant, non-MBU prison).

“And you know like breast pads and everything like that ..... I have had to use my own head and break sanitary towels in half.” P11 (Pregnant, non-MBU prison).

1.3. Emotional support

Perceived level of emotional support varied between different prisons including whether the woman was placed on an MBU. Individual members of staff and voluntary sector organisations were often cited as offering specific support to pregnant women and new mothers but this was piecemeal, suggesting a lack of a consistency across the prison estate.
“...the staff are really nice. I think because I’ve been here a while, I knew some of the ladies anyway from the prison, I knew T. (MBU staff) obviously from all the pregnancy groups. I think going to all the pregnancy groups helped”. P4 (Pregnant, MBU prison).

“Nothing I’ve had absolutely nothing. When I came into prison it was literally just, you’re locked in your wing and your cell, and that’s it. There is nobody to talk to, there is nobody....” P6 (Pregnant, MBU prison).

Some women experienced a lack of compassion and hostility from staff, at a time when they felt alone and vulnerable, and overall treatment was inconsistent.

“....it’s not always the same officers, so some days I dread, because I don’t know who’s going to be on. Some officers are really horrible and some are nice. It’s like one extreme to the other .....” P13 (Pregnant, non-MBU prison).

A combination of staff who were able to share detailed and correct information about MBUs and the application process, and being able spend time with other pregnant women helped women feel more supported. Such support appeared to be more common in prisons with MBUs.

“The mother and baby (staff) are fantastic absolutely brilliant you know you can go over there with any little worry ....”. P14 (Pregnant, MBU prison).

### 2. Experiences of the MBU Admissions Process

#### 2.1 Application, MBU admission board & lack of information

Experiences of the application process varied between and within prisons. Women in prisons with MBUs generally got more help with, and information about the
application. However, the majority of women in all prisons spent days, weeks and months waiting for the outcome of their application.

“You have to sit a board and all that, and they don’t do it until you are nearly at the end the whole thing. It’s stupid really because they should let you know sooner, whether you have got a place or not.” P15 (Mother, MBU resident).

Having to chase people to get information also contributed to the stress and anxiety they felt.

“…. with all this level of stress ..... when you are not getting answers, constantly having to do the chasing, it gets to you because I came to a point where I said you know, I’m so tired, forget it. Once I go into labour something has got to be done.” P16 (Pregnant, non-MBU prison).

In addition to the long wait for applications to be processed, the lack of information about the MBU application process added to their fears and anxieties.

“If they said to me ‘look to be honest with you, this is where you are going, this is the procedure but we can’t get you there until 37 weeks’. ..... I’d be like ‘no problem’ ..... but it’s just the not knowing that is really, really scary.” P17 (Pregnant, non-MBU prison).

Women also felt ill-informed about what would happen if they had pregnancy related problems or complications, and about giving birth. Some prisons, particularly those with MBUs were better at providing this information, but inevitably, gaps in information were filled with misinformation, from inmates and staff. Again, this contributed to feelings of stress and anxiety, fear and vulnerability.
“.... the worst thing that happens in pregnancy is the not knowing, that hurts and kills you the most, ......... You are told that if you feel like the baby is not moving to ring up straight away and they will tell you to come in straight away, just to put your mind at peace and listen to baby....... when you are in prison you are even more worried so you need to know what are the next steps ... you are really, really vulnerable ......” P6 (Mother, MBU resident).

There was little information given about the board and several women were not informed in advance when the board would take place, and this added to feelings of fear and worry.

“....I was going to sit my board, I didn’t even know that. My OMU (Offender Manager) did come to see me, but on the morning that I was going to sit my board.....”. P6 (Mother, MBU resident).

“... they gave us the date and the time, so we knew when to expect it, but going in, we didn’t know the questions, what was going to be asked or you know.... It was pretty scary.” P18 (Pregnant, non-MBU prison).

The majority of women sat their admission boards face to face, but some were held via video link or telephone. For all women, it was a stressful and scary experience, because of fear of a negative outcome, and because there were up to ten people in the room.

“It was nerve wracking I felt like I had to fight for a place and fight for being a mother.” P19 (Pregnant, non-MBU prison).
“... there was me and then everybody else. There was my offender supervisor, the governor, the person from mother and baby, probation, police, a social worker, my social worker, the woman taking the minutes, the independent woman that sits the board. There was probably about 10 other people sat around my table.” P20 (Pregnant, MBU prison).

Sometimes women were told on the day that they had a place, and others had to wait. Some women had support, others did not.

“They said to me, Children’s Services think we shouldn’t give you a chance, that’s when I put my head in my jumper and they said do you still want us to carry on I said yeah carry on, but you’re not seeing my face and they started going round, saying no, no, no. I was thinking shut up because I know the answer is no and that was it then.” P21 (Pregnant, MBU prison).

“... then the manager that is on here, I think if it wasn’t for him I wouldn’t of even been considered. He said right that’s enough about your crime and what’s on paper, I want to know about you. So, I told him about me, and he said that’s all I need to know .....” P18 (Mother, MBU resident).

2.2 Children’s Services

The most influential, and often the deciding factor on whether or not a woman would be offered a place in an MBU was Children’s Services’ report. Staff in some prisons would challenge the decision of Children’s Services, but others would not.

“...she (social worker) wasn’t there. They had asked for her what she thought, and she said she wasn’t supporting a place at the mother and baby unit so they took all
that into consideration. The fact that she wasn’t supporting it, this officer said to me ‘the social worker is not supporting it, you might as well forget it’…….” P13 (Mother, separated, non-MBU prison).

Delays in decision making were most often as a result of waiting for Children’s Services reports.

“….I haven’t been offered a place because they are still waiting for Children’s Services report, because they, Children’s Services, can’t find you, and I’m like ‘well that’s the case because there is nothing to tell’”. P17 (Pregnant, non-MBU prison).

For some women who received a negative response to their application, the decision came too late for them to appeal before their child was born, and taken into Children’s Services care. Women described feeling coerced by social workers to sign the forms for the voluntary removal of their children, shortly after birth, without being made fully aware of their rights, and which they were not obliged to do.

“…. they wanted me to sign a section 20, which is me voluntary for removal, and I was in contact with my sister, and she said ‘no way, if they want you to sign something tell them they have to go to court again and get an order’. I shouldn’t be having to sign anything.” P22 (Mother, separated, non-MBU prison).

3. Experiences of birth in custody

3.1 Giving birth & hospital

For some participants, officers were present in the room when their child was born, and this was perceived as negative and intrusive. Whilst women can have an approved family member or friend to accompany them at the birth, this is not always
possible. They were sometimes not approved by the prison in time, or at all, and some women had nobody willing or able to accompany them. For those who had no family or friends with them at the birth, having officers present was a more positive experience than not having anyone at all.

“She did (hold my hand) yes she was lovely she (the officer) was……. it was heart-breaking because I wanted her dad there …..” P23 (Mother, MBU resident).

Some women gave birth with only medical staff present, because they had nobody to accompany them, or their birth partner had not been security cleared.

“I had to do it all by myself. …. it said on my birthing plan, no one was on there, so I didn’t have no one.” P12 (Mother, separated, MBU prison).

There were issues about transfer to hospital, which caused women a great deal of distress as they were concerned they would give birth in the prison. Decisions about transfer were generally not based on medical knowledge, and were made by prison staff or health care staff, but not qualified midwives.

“... it was horrific I started getting my pains I told the officer the nurses came down to see me they went back to ring the ward, but because I had already been to hospital twice and they had sent me back. They came back, and they literally said to me that they were going to wait for my waters to break before they take me in. But the night officer that was on she had seen me, and I was literally contracting every 5 minutes so she seen the pain I was in. If it wasn’t for her and she hadn’t pushed it they would not have got me in hospital in time....” P6 (Mother, MBU resident).
The presence of prison officers post-birth also made women feel uncomfortable, was intrusive and perceived as unnecessary. This was particularly true when officers were male, and the wearing of prison uniforms added to this.

“I do think that is wrong. They shouldn’t be sat in their uniform, because it makes it just look obvious to anybody walking up and down......everybody on that maternity ward knew that I was from prison ....” P23 (Mother, MBU resident).

“...not one bit of privacy .......the day after I had him I had actually two men sitting in a room smaller than this one, a little tiny room and they were both sitting by the toilet door. And I was covered in blood and I had to get from the bed through the door, and I didn’t want them to see, so I actually sat there until my mum came up...” P27 (Mother, MBU resident).

The presence of officers also affected women who were breastfeeding post birth.

“Things like wanting to breast feed after, couldn’t do it because I had two officers sat in the room with me.” P24 (Mother, MBU resident).

However, they were not always perceived as a negative presence.

“...she (an officer) sat right by the cot, not because she thought I was going to run off, but it was because if I dozed off, and there was an issue, she was there to wake me up.” P25 (Mother, MBU resident).

The majority, but not all women were handcuffed when travelling to hospital. Handcuffs were sometimes removed at the hospital door, once they were on the ward, or before they entered a room for a scan. For pregnant women and those in labour, this was often uncomfortable, humiliating and degrading, and perceived as
unnecessary. For women who returned to prison with their baby, they were not handcuffed on the return journey. For those who had their child removed before returning to prison, they were handcuffed on their return.

“It’s degrading enough when you are handcuffed to an officer when you are taken for a scan. Your handcuffs are not taken off until your just entering the scan room. But I’m being taken to a hospital look at the size of me where am I going to run?” P28 (Pregnant, non-MBU prison).

4. Experiences of Motherhood in Prison

4.1. MBU residence

Women generally found MBUs to be positive, supportive environments, regardless of which prison MBU they were in. Staff were generally supportive, and women felt they had someone to go to. Staying in the MBU also had positive impacts for some women that they felt they would not have had on the outside.

 “… I have got the best of a bad situation now, because I have got my place and I’m on a unit that is a nice environment. I think a lot of people say ‘God having a baby in prison it’s horrendous’ but until you see the unit and you see it’s not, it’s more like a hostel ….” P29 (Mother, MBU resident).

“They are absolutely amazing. I mean I take a lot of their time up .... every time I go to that room if I need, it doesn’t matter if I just want to whinge and saying the same stuff over and over again. They just listen .... and then they’ll do whatever they can to support me “. P23 (Mother, MBU Resident).
“The support and just knowing that you have got that reassurance that you are doing the right thing that you are doing well, and it helps and it matters. Especially with somebody like me who has felt like a failure all her life and not had that constant support. Its life changing it really is”. P23 (Mother, MBU Resident).

Although this was not the case for everyone.

“…. you definitely don’t get any emotional support. The girls on here are really nice and they are supportive .... But no, you don’t really get much support (from staff).” P6 (Mother, MBU resident).

Other women spoke about the guilt they felt returning to prison with their baby.

“.. the thing I wasn’t prepared for is when you leave the hospital, the guilt of coming through the gates with your child I was not prepared for it at all. It was massive.” P4 (Mother, MBU resident).

Others felt they were restricted in how they could mother their children, or that they were being watched or assessed, and there was always a risk they could lose their place.

“....it’s really hard here because you are every conscious of what category you fall into. Could you run the risk of being an incapable mother? Not on the outside but in here it’s scrutinised things are magnified.” P28 (Mother, MBU resident).

4.2. Separation

Separations were difficult and traumatic, were not managed well, and staff lacked sensitivity and compassion during the process of removal and immediately
afterwards. They had little time with their babies (usually approximately 36 hours) before removal.

“And he started crying, then I walked up. I carried him up a little bit, up the path, then I passed him over and I just cried my eyes out….”. P12 (Mother, separated, MBU prison).

“I had 37 hours with him. But sometimes it feels like I’m not his mum, because he got took straight off me, but that’s how it’s feeling.” P12 (Mother, separated, MBU prison).

For most, there was little support afterwards, and things just went back to ‘normal’ when they returned to prison, and officers did not always know of the recent separation.

“The day I got back from having my daughter an officer came in my room …. He said get out of bed now hurry up and get dressed…… and my mate went ‘she has just had a baby you know’ and he said ‘oh I’m really sorry because he didn’t know…..’” P26 (Mother, separated, MBU prison).

Separation meant not being able to breastfeed their children, but a number of women initiated breastfeeding at birth and then tried to continue this by expressing milk to send out to their babies. This required levels of coordination and cooperation that were beyond the control of the women and did not always work.

“The prison were refusing to give me a fridge to keep my milk in, so then I had to keep expressing the milk putting it on the windowsill up against the glass because it was cold. Then I would have to wait a day hand the milk over to healthcare but
sometimes people from healthcare won’t come in to collect it ..... so I had to throw milk away.” P30 (Mother, separated, non-MBU prison).

**4.3. Children outside**

Women were often concerned about missing out on their other children’s lives, how this period of separation would affect the children and their relationship with them, and of the stigma the children might feel.

“I think I am more worried about my youngest because he is at a stage where he recognises people. He’ll soon be one, and mummy’s not around ......” P28 (Mother, MBU resident).

“Because my son knows I’m in prison as well, so when he comes to visit me, all his says is ‘mummy’s behind bars’. That’s why I said I don’t want him coming to the visits. I want him to come to the family days because it’s not fair on them, to go to nursery and to say ‘mummy’s behind bars’, it’s not.” P26 (Mother, separated, MBU prison).

Women in MBUs were also concerned about the impact that keeping their new baby would have on their children outside, particularly if they were very young, as they would not be able to understand why they could not also be with their mother.

“... they will probably say to themselves well mummy doesn’t want us anymore. She has got a new baby, new home, and I don’t want my kids to feel like that. ... ...” P31 (Mother, MBU resident).

For some, however, it was the thought of their children on the outside that ‘kept them going’.
“The only thing that kept me going is my kids looking at pictures of my kids that’s it ...... I said (to mum) if I had come to prison and not pregnant and not had K I wouldn’t have been here now because ... it’s them that are keeping me...” P12 (Mother, separated, non-MBU prison).

Discussion

Women’s experiences were similar in many ways to those of women in previous research, but there were also some differences. The experience of pregnancy and childbirth during imprisonment was not an entirely negative experience, but it did impact on the mental health of many of the women, who reported being depressed and stressed because of their situation. This confirms previous work, suggesting women are not receiving the mental health care they need, at a time when they are more vulnerable to developing mental disorder, or exacerbating pre-existing conditions (Birmingham et al., 2006; Gregoire et al., 2010).

All participants spoke about the high levels of stress and worry they were experiencing, and whilst this was partly related to being in prison during pregnancy, it was mostly associated with the very long waits they had to endure to find out whether or not they had a place in an MBU, and therefore not knowing in the meantime what would happen to their children. Women in US prisons also talked about stress during pregnancy (Wismont, 2000), and the concerns they had about the negative impacts of this on their child. Whilst stress and anxiety were repeatedly cited in the current study, pregnant women in the US also talked of sadness, anger and apprehension, related to the imminent separation from their children (Shelton & Gill, 1989). This was not the case in the current study, as all pregnant women were
eligible to apply for an MBU place, so separation was not inevitable. The role of Children’s Services in the final decision meant that some women had their child removed (in some cases their first child), or needed to fight to maintain custody of their child, but were restricted in their ability to do this because they were in prison.

Women generally felt scared and extremely anxious about sitting the admissions board for an MBU place. This was attributed to a number of factors, including the lack of preparation and support before and during the process, having to fight for the right to keep their child, and the large number of people who attend the board. The overall lack of knowledge about the process of MBU applications and of what would happen during pregnancy and childbirth was greater in those prisons without MBUs, but even those with MBUs sometimes did not inform women of the procedure and what to expect.

Basic nutrition and pregnancy needs were not being met, and this may well impact women’s physical and mental well-being, as well as that of their unborn child. Some women did not feel supported during pregnancy, similar to the findings of Hutchinson et al. (2008), but if they did feel supported, it was more likely to be experienced in prisons with MBUs. If there was support, this often ended if their child was removed. Similar to the Fritz and Whiteacre’s study (2016) many women did not have support during the birth. Policy on the management of women who are giving birth in custody was unclear and appeared to vary depending on the prison and staff. The use of handcuffs whilst travelling to hospital is a concern that has been raised in previous research (Fritz & Whiteacre, 2016), and whilst the policy in English prisons is that women are not cuffed or restrained during birth, the use of handcuffs
did have a negative impact on the birth experience and for mothers separated post-birth. Officers wearing uniforms appeared to be a further source of humiliation and embarrassment for women at the hospital.

The experience of living in an MBU was generally positive and supportive, and allowed women to bond with their child, and for some women it was perceived as more beneficial than if they had been in the community, supporting previous research on the positive impacts of MBUs and prison nurseries (Edge, 2006; Gregoire et al., 2010; Dolan et al., 2013; Fritz & Whiteacre, 2016). However, women often felt very guilty about taking their babies back to prison, and others felt that their autonomy as a mother was restricted, with a threat of removal, and therefore loss of their child, ‘hanging over them’, if they did something ‘wrong’. This meant the feelings of anxiety, present throughout pregnancy, persisted for many women, and that MBU residence was not always an entirely positive experience.

Separation was understandably painful and traumatic, but was often exacerbated by poor handling of the situation, similar to the experiences of women in US prisons (Chambers, 2009; Fritz & Whiteacre, 2016). Lack of compassion, knowledge and understanding of the women’s loss was common, leaving very vulnerable and mentally distressed women without support. There was little available in terms of formal or informal support.

For participants who had older children in the community, this was often a source of guilt and worry, in terms of the stigma, concern about their absence from their children’s lives and the children’s feelings knowing that they had their new baby with
them, but they could not live with their mother. For others, it was a reason to ‘keep going’ during their imprisonment.

Implications & recommendations

The high levels of stress and anxiety pregnant women in prison currently experience can be reduced by better provision of information throughout the MBU application process, reduced waiting times, and completing the application process as soon as possible after arriving in prison. This application process should be streamlined with detailed information provision, efficient systems for gathering reports, and set timescales for decision making. Stronger links need to be established with Children’s Services so that the reports required for MBU applications are completed as quickly as possible.

Clear and consistent policy across the women’s prison estate, on the treatment of pregnant women, support during the MBU application process, and post-separation needs to be developed and implemented, as well as for the provision of food and other resources to meet the needs of pregnant women. To reduce feelings of isolation and vulnerability, and to reduce the mental health impacts and long-term suffering, women need to be supported, and staff should be aware of a woman’s pregnancy status, and also of women who have recently experienced separation.

There needs to be a clear policy on the use of handcuffs and presence of officers at the hospital, which should include individual risk assessment and a more compassionate approach. There should be clear standards in place for interventions and support provided by MBUs across the prison estate, and of the role of staff and
autonomy of mothers, and the removal of any implicit or explicit threat of removal, except in the most extreme cases.

Family days and overnight visits to MBUs can help reduce guilt and anxiety, and also allow older children to maintain their attachment with their mother and bond with their new siblings. The relatively low age limit in MBUs means other young children of imprisoned women are separated from their mother, and an increase in age limits could prevent such separation. This might also necessitate an increase in the number of available places for women and children.

If pregnant women were housed together, this would allow pregnancy specific resources to be available in one place, and be more easily accessible. This could include the provision of appropriate mental health care and emotional support. The mental health of pregnant women in prison needs to be a priority. These changes are essential, in order to give children already born into disadvantage the best possible start, and to avoid unnecessary trauma and distress for mothers.

Strengths and limitations

Strengths

This is the first UK study that focuses specifically on the experiences of pregnancy, childbirth and motherhood and separation in prison, and included women from all except one prison where pregnant women and new mothers are housed.

All women were interviewed when they were pregnant and in prison, and/or shortly after they had given birth, therefore reflecting their current lived experience.
All participants were interviewed by the same researcher, ensuring a consistent approach throughout data collection, and a clear methodology is outlined.

**Limitations**

Equal numbers of women were not recruited from all prisons, because of difficulties gaining permission to access prisons and record interviews, and no qualitative interviews were carried out in one prison.

Because more women in the total sample were admitted to MBUs, more of this group were interviewed than mothers who were separated, which may have introduced bias into the sample.
8. Discussion

8.1. Introduction

This mixed methods study aimed; to describe the socio-demographic characteristics of pregnant women in prison; to establish the prevalence of mental disorder in pregnant women in prison; to identify the factors which influence the MBU application and admissions for pregnant women in prison; to measure the impact of MBU residence and separation in initial outcomes for mother and child; and to explore the experiences of pregnancy, childbirth and motherhood and separation whilst imprisoned. This chapter will consider how the findings of the current study compare with previous research in this area, and will evaluate the strengths and limitations of the study. Finally, the implications of the findings for policy, clinical practice and future research will be discussed.

8.2. Summary of main findings

Over half of all participants were experiencing depression and/or anxiety at first interview, and almost two thirds were admitted to MBUs. Previous Children’s Services involvement, a diagnosis of personality disorder and a history of suicidality meant women were less likely to be given a place in an MBU. Women admitted to MBUs had lower levels of depression before and after they were admitted, compared with women who were not given a place. They also had higher perceived quality of life, before and after their babies were born, but all participants had higher perceived quality of life postnatally compared with measurements antenatally.
When interviewed about their experience of being pregnant in prison, women reported being hungry and that other basic needs were not met. Birth experiences were often negative, and separation traumatic, with little post-separation support for those women not admitted to MBUs.

8.3 Comparisons with the previous literature

8.3.1 Demographic findings

The majority of participants were born in the UK or Irish Republic, and identified as white British. The second biggest group was made of up those who identified as black or black British, with smaller numbers identifying as Asian or mixed race. These findings are similar to previous research carried out with mothers in prison MBUs in England (Birmingham et al., 2003) and with women separated from their infants whilst in prison (Gregoire et al., 2010), suggesting little difference between pregnant women and mothers in prison who have participated in these studies.

There were more pregnant women who were married or cohabiting in this study compared with similar studies of pregnant women in US prisons (Carlson, 2001; Fogel, 1993; Knight and Plugge, 2005), and mothers separated from their babies in English MBUs (Gregoire et al., 2013), but a similar percentage to Birmingham et al’s (2006) findings on women in English prison MBUs. These differences may be due to differences between the US and UK prison populations, but may also be related to sample size variation, and the different research methodologies employed, as well as the different time periods in which the research was carried out, with the most recent figures for the US being over 10 years old. The similarities between the participants in this study and women in MBUs in the Birmingham et al. (2006) study
may be a reflection of the previous finding that pregnant women are more likely to be admitted to an MBU, than women who give birth prior to imprisonment. It may also be because women who are admitted to MBUs are generally from more ‘stable’ backgrounds, and therefore more likely to be married/co-habiting.

Similar to findings from studies of mothers in prison (Birmingham et al, 2006; Gregoire et al., 2010;), the majority of participants were unemployed prior to imprisonment. However, the proportion who were unemployed was lower than in the general female prison population (Ministry of Justice, 2012). It is not clear why this was. Factors such as mental health and substance misuse might affect an individual’s stability, and may also have an impact on relationships and fertility, which may have contributed to these findings. Over a third had been homeless at some point in their life, and 15% either homeless or in unstable accommodation immediately prior to custody, which is very similar to the findings of mothers separated from infants whilst in prison (Gregoire et al., 2010) but substantially lower than the 4% reported for women in prison MBUs (Birmingham et al., 2006). This suggests that a history of homelessness may negatively impact the possibility of being admitted to an MBU. It is unlikely that prior homelessness alone is a consideration of any MBU admissions board, and is not part of the admissions criteria, but a history or homelessness will very likely be associated with other factors that are taken into account in the decision-making process, such as mental health, drug and alcohol misuse, and previous Children’s Services involvement. These findings on socio-demographic differences between women in the general prison population and pregnant women need to be interpreted with caution because of the
relatively small sample size, but it is an area for further consideration in research, particularly the rates of current and prior homelessness.

Three quarters of the participants had at least one child at the time of the first interview, but had fewer children than reported in the one US study that reported data on this (Carlson, 2001). The participants had a total of 149 other children in the community, the majority of whom were living with their father or another immediate family (in most cases, the maternal grandmother) during their mother’s imprisonment. The number living with their father was very close to the percentage in the MBU study (27% and 30%; Birmingham et al., 2006), and just over twice as many as in the separated mothers study (13%; Gregoire et al., 2010). The percentage of children who were either in Children’s Services care or who had been adopted was similar to, but slightly lower than the Gregoire et al. (2010) study but much higher than the Birmingham et al (2006) study. Just over a quarter of the mothers in this study had ever had children placed on the child protection register, or taken into care. This proportion was lower than in previous studies in the UK (Gregoire et al., 2010; Birmingham et al., 2006). These differences may be related to differences in sample size and composition, and also changes in the female prison population over time. Similar to previous research (Gregoire et al., 2010; Birmingham et al., 2006), the children in this study who were separated from their mothers were often very young (two thirds under the age of 10, and over a third under the age of 5), and for over half of all the children, this was the first time they had been separated. Whilst MBUs have the capacity for very young children to stay with their mothers in prison, many other vulnerable children beyond the MBU cut-off age of 18-months experienced separation from their mother. This will be damaging to their emotional
wellbeing and development. Many of the women who had older children in the community, felt guilt and worry, because of the stigma of parental imprisonment on their children, concern about their absence from their children’s lives and worries about the children’s feelings knowing that they had their new baby with them, but they could not live with their mother.

The majority of participants were convicted at baseline interview, and for most it was their first conviction, and their first time in prison. The majority had been convicted of a non-violent crime, which is similar to previous findings for women in prison (UK Prison Population Statistics, 2017). The proportion of participants convicted of a drug-related crime was lower than that reported in the Department of Health (2006) study. It is however similar to that reported in the Gregoire et al. (2010) study of mothers in prison, but lower than in the Birmingham et al., (2006) study. The selection criteria for prison MBUs contributed to the higher rates in the Birmingham et al. (2006) study, as many of the women in MBUs at the time of that study were foreign nationals, and a large proportion had been convicted of drug trafficking. In addition, the information on type of crime for these different groups was collected at different time points between 2003 and 2017 and may reflect fluctuations in rates of different types of crime, as well as the different criteria for participation in each of the studies (mothers in MBUs, separated mothers, pregnant women in prison).

8.3.2 Pregnancy, Motherhood and Mental health

The findings on mental health in this group of women are similar to findings in the general population of women in prison (Singleton et al., 1998; Stewart, 2008; Plugge
et al., 2006; Offender Health Research Network, 2009; Ministry of Justice, 2012e). However, levels of anxiety and depression were much higher than in community samples of pregnant women, with levels of anxiety four times greater, and the prevalence of anxiety disorder and depression 1.5-2 times higher than the highest community estimates (Glover, 2014; Martini et al., 2015; Marcus et al., 2003). Previous research with pregnant women in prison has reported higher levels of both depression and anxiety than in the current study, but these were findings from the US, which has a different prison regime, and the researchers used different measures and methodologies. The measures used in the current study were more robust, and this may also account for the lower levels reported. It is also possible, though not reported, that pregnant women who participated in the US studies were held in a prison where post-birth separation was policy, which would be very likely to contribute to a greater prevalence of both depression and anxiety in light of the imminent post-birth separation. All pregnant women and new mothers in prison in England can apply for a place in an MBU, meaning that until the application process is complete, all women in the current study who applied (the majority) would have had a possibility of maintaining custody of their child. In US states where there is no prison nursery provision, women would be aware very early on, that if they are going to give birth during imprisonment, they will lose custody of their child, at least for the duration of their sentence (e.g. Chambers, 2009; Shelton & Gill, 1989), therefore increasing levels of mental distress and potentially mental disorder.

Comparisons of the current findings with mothers in prison in England suggest higher rates of anxiety and depression for pregnant women in the current study, than rates in prison MBUs, and than in mothers separated from their children (Birmingham et
This was particularly true for rates of anxiety, which were three times higher than in women separated from their babies (Gregoire et al., 2010), and much higher than the 2% reported for women in prison MBUs (Birmingham, 2006). These higher rates found in pregnant women may be related to the situation of not knowing, at the time of the first interview, whether or not they would retain custody of their child post-birth and go to an MBU. This is supported by the findings of the qualitative interviews in this study, where women directly attributed stress and depression to their imprisonment, and not knowing what would happen to their child. These elevated levels of depression and anxiety are a cause for concern. Not only does their presence affect the mental health of the mother during pregnancy, and increase the risk of postnatal depression, but it may also have negative impacts on their unborn children, mother-child attachment, parenting and increased risk of subsequent emotional and behavioural problems in the children (Talge et al., 2007; O’Conner et al., 2007; Van den Bergh & Marcoen, 2004).

Just over a third of the women reported that they had previously seen a mental health professional, prior to their current imprisonment, and of these, just under a quarter had received a diagnosis. In prison only 18 women had been seen by mental health services, and yet almost all of the women had some current mental disorder or personality disorder. Lack of adequate mental health care and support was also cited as an issue in the qualitative interviews, particularly for women who had pre-existing conditions and did not receive treatment or advice on how to manage these conditions during pregnancy. This supports previous findings of high levels of undiagnosed and untreated mental disorder in mothers in prison (Birmingham et al., 2006; Gregoire et al., 2010).
The consequences of such undiagnosed and untreated mental disorder for mothers and children can be severe and life-long leading to elevated rates of behavioural, developmental and emotional problems in the children (Beardslee, Versage & Gladstone, 1998; Klimes-Dougan, Free, Ronsaville, Stilwell, Welsh & Radke-Yarrow, 1999; VanDeMark, Russell, O’Keefe, Finkelstein, Chanson & Gampel, 2005) and greater risk that the child will develop mental health problems (Beardslee, Versage & Gladstone, 1998; Hendrick & Daly, 2000). This is further exacerbated when, as for many participants in the current study, mental disorder is unidentified and/or untreated, and when it is accompanied by substance misuse and/or personality disorder (Goodman & Gotlib, 2002; Harris, 2004; Johnson, Cohen, Kasen & Brook, 2006; Rutter & Quinton, 1984). There were clearly a majority of women in the current study suffering unrecognised and untreated mental disorder. A majority of women reported other symptoms of mental distress, with more than three quarters reporting higher than usual levels of worrying, and almost half were experiencing sleep problems. These additional signs of mental distress would very likely affect the women’s mental and physical health during their pregnancy, and also have negative impacts on their unborn children. When this is combined with pre-existing mental disorder and lack of support and intervention as in the current study, risks to mother and child are further increased.

Women directly linked current feelings of depression, stress and anxiety to their situation of being pregnant and in prison, and were also concerned about the impact any mental health issues might have on their perceived parenting ability. The need for mental health care in the perinatal period is greater in this population than women in the community, because of the higher prevalence of mental disorder in
women in prison, and this increased need is not currently being met. For pregnant women in prison there is an opportunity for intervention, where women can receive targeted and appropriate intervention at a time of increased need, when they might also be more willing to engage (Edge, 2006; Gregoire et al., 2010). Opportunities for such intervention are currently being missed.

Women in US prisons also talked about stress during pregnancy (Wismont, 2000), and the concerns they had about the negative impacts of this on their child, and this was something that was also highlighted by women in the current study. The experience of pregnant women in England differs to that of pregnant women in the US, and it is likely this is, at least in part, due to the forced separation policy in many US states. Whilst stress and anxiety were repeatedly talked about in the current study, pregnant women in the US also talked of sadness, anger and apprehension, related to the imminent separation from their children (Shelton & Gill, 1989). All women who were interviewed spoke about the high levels of stress and worry they were experiencing, and whilst this was partly related to being in prison during pregnancy, it was also related to the very long waits they had to endure in order to find out whether or not they had a place in an MBU. When this is considered in conjunction with the findings on quality of life measures, suggesting improvements in quality of life postnatally, including in psychological quality of life for women who were and were not separated, this suggests the long waiting periods for decisions to be made on admissions to MBUs had a detrimental effect on women’s mental well-being. Stressful life events are also associated with an increased risk of antenatal and postnatal depression (Eberhard-Gran, Eskild, Tambs, Opjordsmoen & Samuelson, 2001), which was prevalent in this group.
8.3.3. Substance misuse

Fewer women smoked than reported in previous research reported in meta-analyses (Knight & Plugge, 2006; Mukherjee et al., 2014). This may reflect different geographical location of previous research, which was mostly from the US, as well as possible changes in the prevalence of smoking more generally since the previous research was carried out. Around a quarter of women misused drugs during pregnancy in the current study and this is lower than that reported in pregnant women in previous research (Eliason & Arndt, 2004; Mukherjee, Pierre-Victor, Bahelah & Madhivanan, 2014), and lower than in the general prison population (HM Chief Inspectorate of Prisons, 2011; Ministry of Justice, 2009; Singleton et al., 1998).

Less than half of the participants had drunk alcohol in the 12 months prior to the interview, but although few were drinking at hazardous levels, the majority of those who were, were alcohol dependent. Almost two thirds of participants had used illegal drugs at some point in their life, but just under a fifth had been using drugs at a level of abuse or dependence in the 12 months prior to their current imprisonment. More women reported using heroin during this period than any other drug, followed by crack/cocaine. The previous research on drug misuse during pregnancy in prison was carried out in the US, which may account for the higher levels reported. This might well be due to differences in the prison population between the two countries, rates of drug misuse more generally, sentencing policy differences between the two countries and different methodologies and sampling approaches. Lower levels of drug misuse when compared to the general female prison population in England and Wales are likely, at least in part, due to the pregnancy status of the women in this study. However, such comparisons are beyond the scope of the current study, and
would require further detailed comparisons, between populations for which recent, reliable data is very limited. There may also be other factors that contribute to this, including unidentified biases in the current sample, as a result of easier access to, or greater willingness to participate in women without a history of substance misuse.

Whilst differing from the general female prison population and from other research with pregnant women in prison, the rates of alcohol and substance misuse reported in this study are very similar to the Birmingham at al (2006) study, for both alcohol and drug misuse. Levels reported for women who had been separated from their babies during their imprisonment were substantially higher (more than double; Gregoire et al., 2010). This may be a reflection of being refused a place because of current drug misuse, or because women returned to drug misuse post-separation from children. However, it is not reported if this level of abuse or dependence was the same during pregnancy, or only in the postnatal period, and so it is unclear if there is an association, and if so, what direction this association is. Whilst the lower rates in the current study may well be related to the current pregnancy status of the women who participated, there may also be a link with MBU applications. The criteria for MBU admission to be drug free, ('The applicant is willing to refrain from substance misuse', PSI 49/2014 PI 63/2014) and the mandatory drug test prior to being offered a place, may have functioned as a deterrent to drug misuse, as the majority of women in the current study had applied for a place, including those with a history of drug misuse. If the MBU criteria do function as a deterrent to drug misuse, and women actively choose to no longer misuse drugs in order to gain admission, then this would support previous assertions that pregnancy/motherhood in prison is a point at which women can make significant life changes and a time for
intervention (Corston, 2007; Edge; 2006; Gregoire et al., 2010). Follow-up research with mothers who had been in prison MBUs suggests this may be the case, and that changes may be maintained post-release also (Dolan et al., 2013). When women who had and had not spent time in prison MBUs were compared between two and five years post-release, levels of drug misuse for those women who had spent time in MBUs were substantially lower, with only two women reporting drug misuse at levels of abuse or dependence in the 12 months prior to follow-up interview, compared to almost a quarter in the 12 months prior to the initial interview. In comparison, almost half of the women who had been separated were misusing drugs at first interview, and whilst this had fallen to approximately a quarter at follow-up, more women were still misusing drugs, with a majority continuing to misuse heroin and crack. None of the women from the MBU study reported using heroin or crack at levels of abuse or dependence at follow-up, despite these being the main drugs used at initial interview for over a third of participants. However, these results must be interpreted with caution, as sample sizes were relatively small, and do not provide clear evidence of a causal relationship.

8.3.4. Suicide and self-harm

The number of participants who reported at least one previous incidence of self-harm or a suicide attempt was lower (just over a quarter) than that reported for the general prison population (over a third; Corston, 2007). Rates of current suicidal thoughts are closer to the lower limit of that reported in the general population of perinatal women (Lindahl, Pearson & Colpe, 2005). Current hopelessness for the future was reported by almost a third of participants, and just over one in five of the
participants reported that life was not worth living. However, only five women reported current thoughts of self-harm, and only four of these reported current thoughts of suicide. This is contrary to other research on risk of suicide in prison, which has found that women in prison are at a greater risk of suicide than men in prison or than women in the community (Pratt et al., 2006; Fawcett Society, 2003). This lower than expected rate may in part be due to current pregnancy status and fear of revealing a history of suicidal behaviour and the effect it might have on MBU applications. However, reduced rates of suicide and suicide attempts have been reported in the perinatal period in the community (Healey, Morris, Henshaw, Wadoo, Sajjad, Scholefield, et al., 2013). This may be a result of the increased levels of social support and more frequent contact with health care services during pregnancy, as well as cultural and social influences (Lindahl et al., 2005). Bearing in mind the particular circumstances of this group of women, the high rates of depression and anxiety reported, and the high rates of previous suicide and self-harm in women in prison, these are still unexpected findings. Mental health may be a consideration in both MBU admission either explicitly (‘relevant medical records’ are included in the application dossier, PSI 49/2014 – PI 63/2014) or implicitly (‘There are no concerns about mother’s conduct and behaviours which may place her own and other mothers and children on the unit at risk’, PSI 49/2014 – PI 63/2014). If a woman in prison shares information about suicidal thoughts, attempts or self-harm this is likely to be recorded in medical records, and/or deemed to be risky behaviour. This may then prevent a woman being granted admission to an MBU. It is not clear if lower reported rates of suicide attempts and suicidal thoughts are because fear of
the negative consequences of revealing this information, or because of the protective effect of being pregnant as seen in community.

8.3.5. Personality disorder

Prevalence of any personality disorder was also similar to that reported in previous studies, however, the most prevalent was paranoid personality disorder, unlike in previous studies of women and mothers in prison, where antisocial personality disorder was the most prevalent (Fazel & Danesh, 2002; Birmingham et al., 2006; Gregoire et al., 2010). Their current level of anxiety about whether or not they may be separated from their children post-birth, may have contributed to increased levels of paranoid thinking. There are also issues with the classification of personality disorder, because of overlapping diagnostic criteria between personality disorders, but also with other neurotic and psychotic disorders (Tryer et al., 2011), which may explain these differences, particularly in light of recommendations for a different approach to classification.

8.4. MBU admissions

8.4.1. MBU occupancy rates and under-occupancy

Part of the rationale for the current study was the reported under-occupancy of prison MBUs, and figures that suggested they were generally just over half full (Hansard, 2012). During the current study, occupancy rates varied, and part way through data collection (in 2016) the MBU at HMP Eastwood Park closed due to flood damage, and at the time of writing had still not reopened. This placed more pressure on places as there were 12 less available. There are currently places available for 54
mothers and 57 children. The result of this is not only increased pressure on places at times, but also that women who apply for MBUs are now even more likely to be held further away from home than other women in prison. There is currently no prison MBU provision in central London, since the closure of the MBU in HMP Holloway in 2013. The on-going temporary closure of Eastwood Park MBU means that there is no provision for women from South West England or South Wales. This makes the application and decision-making process more complex, as being at a greater distance from home will impact not only the women themselves but any children they have outside. The reduced number of places also means there is a reduced possibility of pregnant women and new mothers in prison being granted an MBU place, and therefore being able to maintain custody of their infants during their time in prison, adversely affecting both mothers and children.

8.4.2. Factors associated with MBU admission and refusal

The finding that only one participant was not aware of prison MBUs was an improvement on the findings previously reported for this (Gregoire et al., 2010). However, many of the participants in the Gregoire et al. (2010) study had given birth prior to imprisonment, which may account for this difference, at least in part. Pregnant women are more likely to be identified and informed than women who have given birth in the previous 12 to 18-months, as these women may not be approached by staff, because information about children outside has not been shared. Whilst women knew of the existence of MBUs, almost half of the women in this study did not get this information from prison staff, but received or discovered this from other sources. Whilst this suggests some women may have been pro-active
in seeking out information, information from other inmates, whilst it may be useful in the absence of any information, may also be incomplete and unreliable at best, and incorrect and misleading at worst (e.g. ‘nobody from this prison ever gets a place in an MBU’). This is also true for information from other sources, including solicitors and judges, who whilst supporting women and explaining their options, may unwittingly be giving misleading information (e.g. if you have your baby in prison you will go to a mother and baby unit), and are unlikely to be familiar with the application and decision-making procedure for MBUs. Only a very small number of women had no plans to apply at the time of the first interview, and the reasons for almost half of these women were related to their unsentenced status or expected/hoped for release shortly after their child was born. Whilst only a small proportion of those who were on remand or had not been sentenced were included in the overall sample (just under a fifth), they were not disproportionately represented in the group who did not apply, suggesting that in the current sample this did not function as a particular deterrent to applications than other factors, as has been previously suggested (Birmingham et al., 2006). The women who did not apply in the current study had different reasons to those reported previously (Gregoire et al., 2010), where the majority of participants had given birth prior to imprisonment, and this meant that almost a quarter of those who did not apply made this decision because their children had already been removed by Children’s Services, and they had no realistic possibility of regaining custody whilst in prison. For others, their children were close to the age limit, or stayed with family. Whilst numbers are too small to make meaningful comparisons, they may suggest that women who are pregnant on arrival in prison are more likely to apply for a prison MBU place, and also more likely
to be offered a place, than women who have given birth previously in the community (Gregoire et al., 2010).

The best predictors of admission to MBUs were; being in employment prior to incarceration which had a positive association with admission, and previous Children’s Services involvement, history of suicide attempts and presence of personality disorder, which all had a negative association with admissions. This supports the previous findings on women in MBUs and separated mothers (Birmingham et al., 2006; Gregoire et al., 2010), who found that women from more ‘stable’ backgrounds were more likely to get a place in an MBU, and those with a personality disorder were less likely to get a place. Whilst the presence of depression and anxiety did not significantly predict admission to MBUs, there was a trend for those experiencing depression, anxiety or prenatal depression to be more likely to be refused an MBU place. This is in line with the previous suggestion that women with treatable mental disorders are less likely to apply or be given a place (Gregoire et al., 2010). It also relates to the first MBU admission criteria which states:

‘There are no concerns about mother’s conduct and behaviours which may place her own and other mothers and children on the unit at risk’ (PSI 49/2014 – PI 63/2014)

This is open to individual interpretation, and may vary, as to what is appropriate behaviour for women in prison around children, and other mothers. If a woman is depressed, emotional or anxious, there may be concerns about her behaviour. If a woman is pregnant, and has a mental disorder that is treatable, but impacts her current behaviour, this may be grounds for refusing a place in an MBU, as there may not be the provision to offer treatment or intervention within the prison MBU, or
prior to admission. This concurs with previous studies (Birmingham et al., 2006; Gregoire et al., 2010). Women with mental disorder may be refused a place because of perceived rather than actual risk. Mental disorder does not inevitably make a woman a danger to others, or unable to parent. Mental disorder may also make the process of application and appeal more difficult, particularly considering the need to complete paperwork, and sit before a board of several professionals.

Prior Children’s Services involvement appeared to be the factor that had the most influence on MBU admissions in this study. This is very likely due to Children’s Services contribution to the decision-making process for all women who apply for MBUs. In cases where women have a history of child protection orders or children being taken into care, Children’s Services will be more likely to raise concerns about a woman’s ability to parent. If this is the case, and Children’s Services do not support a woman’s application for a place prison staff and governors, who make the final decision, may feel unable or unwilling to overrule this recommendation, and this is understandable from the guidance issued in PSI 49/2014 – PI 63/2014. If this woman was in the community, she would be very unlikely to lose custody of her child shortly after birth, as the legal threshold for removal of a child would not have been met (a court has made a care order or an emergency protection order, giving Children’s Services the right to remove a child or the situation is so serious that Children’s Services ask the police to remove a child without a court order). This is supported by the qualitative interviews where women explained that this was the case for some of them, when they were refused an MBU place. No court decisions had been made on child custody, but without a place to go with their baby (MBU), they had no option but to have their child taken into care. The involvement of Children’s Services made
the process more difficult and distressing for those who did get a place, and the approach to child removal made a traumatic experience even more distressing for those who were separated. Prison MBU guidance explicitly states that one of the criteria for admission is that:

“The applicant’s ability and eligibility to care for her child is not impaired by poor health or for legal reasons such as the child being in care or subject to a Child Protection Plan as a result of the applicant’s treatment of that child.” (PSI 49/2014 – PI 63/2014)

None of the pregnant women’s children that were born whilst they were in custody were subject to care proceedings until after they were born, or to child protection plans. Only pre-birth assessments were carried out, and whilst these might raise issues of concern that might necessitate a child protection plan, decisions about removal would normally need to be made after a child is born or unless there is clear evidence prior to the birth that the child would be at risk of significant harm if they stayed with their mother. Whilst Children’s Services may have concerns and be involved pre-birth, because of possible risks, they cannot instigate custody proceedings pre-birth. The case of child protection orders, or contested care proceedings, is a complex area, and one beyond the scope of the current study. However, placement on the child protection register is not in and of itself grounds for removal of a child, only for monitoring and possible intervention. However, if there is nowhere for the mother and child to live together (because an application for an MBU was not supported by Children’s Services), whilst the child protection plan is in place, which is the case for women in prison who are not granted a place,
then the child will be removed, and a woman’s ability to care for her child cannot be assessed. A woman then loses custody of her child, not because of a court ordered removal, but because there is nowhere she can take her child. It is unlikely that this would be the result in the community, which places women in prison at an unfair disadvantage, because of the MBU application requirements and the role of Children’s Services. The fact that prison MBUs are not considered as assessment units, and women cannot access community residential assessment units whilst in prison, further disadvantages those women who might need and benefit from further assessment and support.

Women generally felt scared and extremely anxious about sitting the board for an MBU place. This was attributed to a number of factors, including having to fight for the right to keep their child, the large number of people who attend the board, and in some cases the lack of preparation and support before and during the process. The overall lack of knowledge about the process of MBU applications and of what would happen during pregnancy and childbirth was greater in those prisons without MBUs, but even those with MBUs sometimes did not inform women of the processes and what to expect.

8.4.3. Pregnancy and childbirth in prison

Almost all of the women had been seen by a midwife at least once prior to the first interview, and those that had not been seen were newly arrived in prison, and were expecting to see a midwife in the next one to two weeks. Just over two thirds had also seen the prison GP since arrival. This suggests that women were receiving adequate, or at least regular antenatal care, on a par with the community. This
contradicts the findings of Knight and Pluge’s (2005) meta-analysis, where almost a third of women did not receive adequate perinatal care in prison. However, only one of the 13 papers included in the meta-analysis was from the UK, with the majority from the US, where health care provision is different. Nine of the 13 papers were also published prior to the year 2000, with the one UK study published in 1985. Health care in prison has changed in the period since. In some cases, the antenatal care may have been better than that provided in the community for those who may not have accessed it previously, and for the women who may not have known until they arrived in prison that they were pregnant.

The majority of women were full-term when their children were born, and had a normal birth, with just over one third receiving some form of medical intervention during the birth, and with a mean birth weight just slightly below that reported for babies born in England and Wales for 2012 (Ghosh, Berild, Sterrantino, Toledano & Hansell, 2017). This suggests that for the majority of women in this study, prison did not have a negative impact on birth outcomes, differing from some of the previous research in this area (Plugge et al., 2006). As with previous differences this is likely to be associated with the majority of this previous research being US based, and changes in health care provision in prison.

Many women reported they were hungry and uncomfortable during their pregnancy, suggesting that basic needs were not being met and these issues would have had an impact their physical and mental well-being, as well as that of their unborn child. North (2006) previously outlined some of the negative impacts imprisonment during pregnancy might have, and this included limited diet, which
was also reported by Edge (2006). Considering that this research was carried out over 10 years before the current study, this appears to be a consistent finding, and one which could easily be addressed.

Some women in this study reported that pregnancy in prison had been an opportunity to make changes, and for others it made their time in prison less difficult, and so was not perceived as an entirely negative experience, and this mirrored previous research (Shelton & Gill, 1989).

It is clear that some women did not feel supported throughout their pregnancy, similar to the findings of Hutchinson et al (2008) in the US. Peer support and the support of charitable organisations working with pregnant women and new mothers, was often important in promoting this. Allowing pregnant women to gather together in one place, in order to share information, and for them to share their experiences and concerns with each other was also an important part of this positive experience.

Policy on the management of women who are giving birth in custody was unclear and appeared to vary depending on the prison and the staff on duty. Sometimes prison officers were present at the birth and this had a negative impact, and similar to the Fritz and Whiteacre (2016) study, many women did not have support from either family or friends during the birth. However, some women, with limited family contact were happy to have an officer with them, as a birthing partner, for others this was the only alternative because vetting procedures or issues contacting the birthing partner prevented their attendance. The use of handcuffs whilst travelling to hospital is a concern that has been raised in previous research (Fritz & Whiteacre,
2016), and whilst the policy in English prisons is that women are not cuffed or restrained during birth (unlike in the US), policy on cuffing did have a negative impact on the birth experience and for mothers separated post-birth. This was particularly true when women were handcuffed on the way to hospital, or upon leaving, if their child had been removed. Lack of a clear policy contributed to the inconsistent use of handcuffs. It appeared that individual risk assessments were not always carried out, and that decisions in this area often lacked compassion for the women’s experiences. Officers wearing uniforms appeared to be a further source of humiliation and embarrassment for women at the hospital, before and after giving birth. Whilst the use of handcuffs and uniformed guards may be necessary in some rare cases, for vulnerable risky women, with mental health problems, who are in labour or who have recently given birth, such an approach is not appropriate, lacks compassion and risks increasing distress and trauma.

8.4.4. Impact of MBUs and separation on perinatal mental health

The high levels of perinatal depression in both groups support previous research in this area, both for women in prison nurseries and women in prison MBUs. Although levels are lower than in some studies (Goshin et al., 2013; Mukherjee et al., 2014; Plugge et al., 2006), the results prenatally are similar to those reported by Gregoire et al (2010) for women in prison separated from their babies, and women in MBUs (Birmingham et al., 2006). Prevalence of depression in the current study is higher in women who did not get an MBU place prenatally and postnatally, and prevalence is higher postnatally than prenatally. This is very likely to have been influenced by separation from their child, but also the elevated levels of depression prenatally
meant this group were at greater risk of postnatal depression, as psychological
distress prenatally is a major predictor of postnatal psychological distress (Austin,
The percentage of women who scored in the range of severe depression was much
lower post MBU admission and higher post-separation, suggesting that, as in
previous research, levels of depression are higher in women separated from their
babies (Gregoire et al., 2010), and also that MBUs may serve as a protective factor
against developing or exacerbating postnatal depression (Gregoire et al., 2010). It
may also be that those women who were and were not admitted to MBUs, had some
knowledge or expectation of the likely outcome of their MBU applications (e.g.
previous involvement with Children’s Services), and this may have influenced levels
of depression. Women who are admitted to MBUs appear to have more ‘stable’
backgrounds and are less likely to be misusing drugs or alcohol, these factors may
also reduce the risk of perinatal depression (Birmingham et al., 2006), but the
generalisability of these findings is limited because of the small sample size.

8.4.5. Impact of MBUs and separation on quality of life

Quality of life scores in all four domains were lower in women who did not get an
MBU place prenatally and postnatally, suggesting poorer perceived quality of life.
For both groups, scores were higher postnatally, suggesting some improvement. This
may be because at follow-up the physical symptoms of pregnancy would no longer
be experienced, and most postnatal complications and discomforts would have been
resolved, and this would positively affect quality of life. The majority of women who
participated were also given an MBU place, further reducing anxiety around custody
of their children, and these factors are likely to have contributed to the reduction in scores in the psychological domain of the questionnaire. Scores on the environment domain were low pre- and postnatally, suggesting their physical environment (prison) affected their well-being, even when they had been admitted to MBUs. This is not surprising, as few would consider prison to be a good environment to live, and particularly not in the perinatal period. Prison is unlikely to be perceived as a positive, healthy environment, and despite the many additional benefits of MBU residence, an MBU is still not home, with all the comforts that this offers.

The exception to this pattern of minor improvements was the social domain for women who had not been admitted to MBUs, suggesting that this aspect of their quality of life was worse post-separation. For many women, they may have felt more supported during pregnancy, and may have established social relationships with other women due to their pregnancy status. They would also have attended midwife appointments and may have had meetings with social workers, and whilst these are professional relationships, they may have offered some level of social support to women during a difficult and vulnerable period. They may also have attended antenatal classes, depending on the prison, where they would have developed relationships with other pregnant women, and staff. Once the baby was born, the majority of this ‘support’ ended, and this is supported by the findings of the qualitative interviews, where women who were separated experienced little or no support post-separation, and were expected to return to ‘normal’ prison life once they were returned to prison. Whilst women in MBUs had very similar levels of quality of life in terms of social relationships prior to giving birth, this continued at a similar, but slightly improved level post-birth. This is most likely related to the
ongoing support offered by the MBU environment, and the relationships with other mothers residing there, and with staff, and the shared experience of mothering in prison.

8.4.6. MBU admission and mother-child attachment

The analysis of the MIBS scores offers some insight into the attachment of mothers and babies in prison. For the group of mothers who were separated, the majority had no contact, or had had very little contact post-birth with their babies. For this reason, it was not possible to complete the MIBS with the majority of those who were separated, as the questions relate to a mother’s feelings towards the child in the first few weeks after birth. For women who have recently experienced, in most cases, a forced separation from their new born child, such questions are not only extremely difficult to answer, but also insensitive in light of obvious distress.

For those who did complete the MIBS, scores suggested high rates of strong attachment. This may suggest that MBUs offer the opportunity for developing a strong attachment, as has been suggested in previous research in prison nurseries in the US (Goshin et al., 2013; Byrne et al., 2010). The scores suggested high levels of attachment in all participants, with the majority scoring the best possible attachment score. When looking at these findings, it is important to bear in mind, not only the opportunities for attachment that MBUs may offer, but also the fear that many women would have in the circumstances regarding custody of their children. Some women commented on the risk they felt about keeping their place on the unit if they did anything ‘wrong’. This may have influenced their answers and meant they did not necessarily feel they could be as open and honest as they would
in other circumstances, leading to a positive bias in responses because of ongoing fears of separation.

**8.4.7. Experiences of MBU residence and separation**

The experience of living in an MBU was generally positive and supportive, and also allowed women to bond with their child, and for some women it was perceived as more beneficial than if they had been in the community, supporting previous research on the positive impacts of MBUs and prison nurseries (Byrne et al., 2010; Carlson, 2001; Edge, 2006; Gregoire et al., 2010; Dolan et al., 2013; Fritz & Whiteacre, 2016). However, women often felt very guilty about taking their baby back to prison, and others felt that their autonomy as a mother was restricted, with many speaking of the threat of removal, and therefore loss of their child, hanging over them, if they were perceived to have done something wrong. This meant the feelings of anxiety, present throughout pregnancy, persisted for many women, and that MBU residence was not always an entirely positive experience.

Separation was understandably painful and traumatic, but this was often exacerbated by the poor handling of the process, similar to the experiences of women in US prisons (Chambers, 2009; Fritz & Whiteacre, 2016). Lack of compassion, knowledge and understanding of the women’s loss was common, leaving very vulnerable and mentally distressed women without support. This was true in most prisons, and there was often little available in terms of formal or informal support. The general experience was that women were just left alone and often treated as if nothing had happened.
8.5. Conclusions

This study provides previously unavailable information on a vulnerable group of women. For women and children that are already disadvantaged through high levels of unemployment, drug and alcohol misuse and offending behaviour, the issues identified in this study highlight not only the current risks, but also the risk of future problems for both mothers and children. The high levels of depression and anxiety increase distress in women who are already experiencing adverse circumstances, at the same time increasing the risks to their unborn children of future emotional and behavioural problems. Presence of mental disorder and personality disorder, or perceived instability may prevent women from being given an MBU place. Women with previous involvement with Children’s Services are most likely to not be given an MBU place, meaning some might lose custody of their children whilst in prison, when they would not in the community.

Women who are admitted to MBUs have lower levels of perinatal depression and higher levels of perceived quality of life, both before and after their children are born, which suggests that whilst mental disorder may be a barrier to MBU admission in some cases, they may also have a positive impact on mental well-being. Perceived quality of life was similar for both groups during pregnancy, except in the psychological domain, reflecting the higher levels of mental distress already present in the group that would be separated from their children. The very likely withdrawal of much of the previous support they would have received prior to the birth may well have exacerbated this. Women who are separated receive little if any support and are left to carry on as ‘normal’ despite the trauma of separation. There is a lack
of clear policy on the treatment of pregnant women and new mothers in prison leading to inconsistencies in their management and in provision of information, as well as hunger, discomfort, humiliation, stress and anxiety.

Considering the many negative impacts, and the difficulty of addressing the issues highlighted within the constraints of the current prison system, alternatives to imprisonment for pregnant women and mothers of young children need to be considered, as does the provision of smaller units where women and children can be housed. Alternative approaches to the current system would help address some of the issues highlighted. In the absence of such options, the current system needs to be much improved to minimise the damage to vulnerable women and their children.

8.6. Strengths and limitations

8.6.1. Strengths

The mixed methods design of the study allowed for a holistic approach to data collection. This is important, for complex research questions, where there is limited previous research, and many complex issues involved (pregnancy, mental health, substance misuse, imprisonment, motherhood, separation). Quantitative and qualitative research designs have both strengths and weaknesses, and neither approach would have fully addressed the aims of this study. Quantitative designs can measure and observe phenomena, and allow for hypotheses testing. Data is verifiable, and allows for systematic collection and analysis, leading to findings which are generalisable to a wider population, and can control for confounding variables. It also means comparisons are possible between groups and conditions, and over time. However, they offer a limited understanding of the context or setting of data.
collection, such as prison, and the explanations behind the findings. Qualitative designs allow for the generation of hypotheses, and explanation of how and why things happen and of the complexities of social and cultural issues. They allow researchers to gather rich information on the views, beliefs, experiences and meaning of events for participants, and for in-depth detail, and for participants themselves to generate the information and data, allowing events and opinions to be explained in context. Qualitative designs can also include biases, for example because of small sample sizes, and results cannot be generalised. The use of a mixed method design in this case limits these weaknesses, allowing for statistical analysis, and the development of convincing evidence of phenomena based on this, as well as explanation, exploration and understanding of the quantitative findings through qualitative data.

The mixed methods design allowed collection of demographic and mental health data of pregnant women and new mothers in prison, and also of the lived experience that underpins these descriptive findings, adding greater depth and meaning to the quantitative findings, and a broader perspective. In addition, the use of quantitative and qualitative data collection approaches meant the findings are corroborated because of the different methods of data collection utilised. In this case this was particularly important, as one researcher was responsible for all the data collection and analysis in the study, and the combination of methodologies helped reduce the personal biases of the researcher.

There is very limited previous quantitative or qualitative data available on pregnant women and new mothers in prison internationally, and even less that is specifically
UK focussed. The results of this study provide detailed and in-depth information on a little researched and understood area, and form a basis for future research in this area.

This is the first study in England assessing the mental health of pregnant women in prison, perinatal mental health, quality of life antenatally and postnatally and the experiences of pregnant women and new mothers in prison in England.

The quantitative data collection used robust, validated and widely used questionnaires and interview schedules and was powered in order to detect measurable effects.

The approach to data collection was consistent throughout the study, for both the quantitative and qualitative data, as the same researcher collected all the data and completed all the interviews. Whilst other studies have collected data in just one prison, this was a national study that collected data from women in nine different prisons. Pregnant women in the study were recruited from all but one prison where pregnant women and new mothers were resident. Interviews were carried out with women during pregnancy and post-birth, therefore reflecting their current mental health status and their lived experience of pregnancy and motherhood in prison.

The researcher responsible for data collection already had approximately eight years previous prison research experience, the majority of which had focussed on mothers in prison. This meant she was experienced in how prison research ‘works’ the processes and obstacles, and the difficulties of locating and recruiting participants and working within the constraints of the prison regime. This meant that the various obstacles and difficulties encountered along the way did slow down the process of
data collection, they did not prevent data collection being completed, nor significantly affect the overall process.

Prior experience also meant that there was knowledge and understanding of the sensitive and very emotional nature of research with this specific group of women. When participants are sharing intimate and painful details of their lives, it is sometimes difficult to keep interviews on track. For example, the current study did not ask women about childhood experiences, or romantic relationships. However, through the course of the qualitative interviews, particularly when discussing issues around mental health, a number of women shared painful and traumatic experiences of childhood sexual abuse and violence, and domestic violence and rape in adult relationships. When such topics did emerge, it felt important to listen to these stories, which some women had not previously shared, but not to include them in the final data analysis. There were two reasons for this; the first was it felt appropriate to respect the women’s choice to share this information in what they perceived to be a ‘safe space’; and because whilst such experiences are important and relevant to their current imprisonment, they were not part of the focus of the current study. Questions were not specifically asked about these topics, and they are so important that they require specific concentrated well-designed tailored research. There were clear protocols on dealing with women’s and the researcher’s reactions to material discussed at interview, including referral into healthcare for the women, and regular clinical supervision for the researcher.
8.6.2. Limitations

Despite the strengths of the mixed methods approach, there are also inherent limitations. The collection of both quantitative and qualitative data is more time-consuming, and this was especially true in the current study, where the strict prison regime limited potential participants availability for interview, and the period of time required to carry out both the quantitative and qualitative interviews with one individual could extend beyond the time the participant was ‘free’ to spend with the interviewer on a particular day. This meant long periods of time were also spent waiting to begin or complete interviews during the time that women were locked in their cells and unavailable.

The requirement to gain NHS and HMPPS ethical approval prior to beginning the study was time-consuming and difficult. Once the study had been approved by the NHS and HMPPS, it then required permission from each individual prison governor or director, causing additional delays to initial approvals, and further approval was required for the use of a digital voice recorder to record interviews.

Mixed methods studies involve complex and difficult research procedures, and additional permissions and explanations to organisations and individuals. Additionally, because of the women’s involvement with the CJS at the time of interview, not all women were comfortable sharing all of the quantitative information requested or of being recorded for qualitative interviews. This meant there were some gaps in the data, and biases because of the unwillingness of a small minority of participants to share the extensive and detailed personal information.
Whilst robust quantitative measures were used, none of these measures were specifically designed for use in prison populations, and whilst some have been validated in prison environments, some have been rarely used in such an environment and data on their reliability and validity in prison is scarce.

The national scope and complexity of the mixed methods approach, and issues around permissions and access meant that the data collection phase was very time-consuming, longer than expected, and expensive.

Permission to access individual prisons was staggered over a long period of time, with the first prisons granting permission in early 2014, and the last of the nine prisons visited granting permission in late 2016. This meant that equal proportions of pregnant women were not recruited from all prisons, and that a greater proportion of participants were recruited from some prisons than others. This also meant that some participants were lost to follow-up, as while the individual participant had given consent to participate in follow-up, they had been transferred to a prison which at that point, had not granted the researcher permission to collect data, and the participant was released prior to permission being granted. In other cases, the participant was still in custody when the researcher was granted permission, but was significantly past the 6-8 weeks postnatal initially anticipated for follow-up interviews, because of the delay in permission being granted.

In addition, the researcher was granted keys in five of the nine prisons, and was required to be escorted in the remaining four. This impacted access to participants, and may have introduced further bias into the sample. In prisons where the researcher had keys, it was possible to approach all women on the weekly pregnancy
lists individually, explain the research and establish their eligibility. In prisons where the researcher was escorted, it was not always possible to approach all pregnant women, as the escort would often decide where to go first/next and would not always be willing or able to return to look for women who were not initially available. Data was collected via self-report, although some data could be verified through other sources.

Whilst efforts were made to recruit as many participants as possible, the sample size is relatively small and did not have sufficient power to conduct more complex analyses.

The sample is not representative of the general female prison population, because women had to meet certain criteria to participate in the study. For example, participants were more likely to have longer sentences than the general population, as they generally needed to be in prison for an extended period, in order to experience pregnancy and child birth whilst in custody. It is not possible to establish if it is representative of the population of pregnant women in prison, because of the lack of information on this group, and difficulties encountered accessing some prisons.

It was not possible to include women who did not have a sufficient level of English to participate, as there was no financial provision for interpreters. This meant that foreign national women, without a sufficient level of English could not participate, meaning a small sub-group of women were excluded from the sample. It is not possible to verify the proportion of pregnant women that were included in the sample, as the total number of pregnant women who gave birth in prison during the
data collection period is unknown. To the best of my knowledge there were no substantial biases in the data collection methods and therefore it is my view that the sample is generalisable, within the constraints of the inclusion criteria.

Recruitment was constrained by permissions granted. For example, there were no qualitative interviews carried out in one prison. It was not always possible to interview the same women before and after giving birth because of access issues. Due to the fact that more women in the total sample were admitted to MBUs, higher numbers of women who lived with their babies in MBUs were interviewed than mothers who were separated in the follow-up interviews. Difficulty and delays gaining permission to use a voice recorder in some prisons meant that more interviews were conducted in some prisons than others, both for the quantitative and qualitative strands of the research. However, the sample was recruited from all prisons that housed pregnant women, in all parts of England, and included a wide range of demographic characteristics and types of crime reducing the impact of these issues on the representativeness of the sample.

8.7. Clinical & practical implications

Prison MBUs are the current best option for women who give birth whilst in prison, or who have young babies in the community. However, the management of pregnant women and the MBU admissions process needs to be consistent across prisons, as does the provision of resources for pregnant women, and support for new mothers.
8.7.1. Clinical implications

Alternative approaches

Alternatives to imprisonment for pregnant women and mothers of young children need to be considered, as does the provision of smaller units where women and children can be housed. Alternative approaches to the current system would help address some of the issues highlighted, particularly stress and anxiety during pregnancy (because of uncertainty about MBU placement), separation from babies and older children, distance from home that women are housed, meeting nutritional and other pregnancy needs. In the absence of alternative options, the current system needs to be improved to minimise the damage to women and their children affected by the Criminal Justice System.

National database

Most prisons record the number of pregnant women and women who give birth whilst in custody, and most produce weekly pregnancy lists. Some prisons keep a record of the number of pregnancies and births, but not all do this, and when new staff take over a role, they do not always have access to this essential information (e.g. the number of pregnant inmates per year). The lack of a central database containing this information is a concern. If the level of need is unknown, then it is not possible to provide the necessary resources for this group. A national database needs to be established which contains the following information for each prison and across the estate: number of women receiving antenatal care during imprisonment, and length of time on prison during pregnancy; number of women who give birth whilst in custody; number of women who apply and do not apply for
MBU placement; reasons for application/non-application; number of pregnant women who apply and number who are accepted; number of women with babies in the community who apply and number who are accepted; number of women who report giving birth in the 12 months prior to imprisonment.

**MBU applications and admissions**

There should be a maximum time period within which decisions should be made about MBU placement once a woman has arrived in prison and her pregnancy has been disclosed. Current recommendations are a maximum of 45 days for a decision to be made (PSI 49/2014 – PI 63/2014), but this time limit is rarely met, and cannot be applied to women who arrive in prison in the last few weeks of their pregnancy, where urgent decisions must be made, and a shorter time limit needs to be imposed (7 days). All decisions should be made within the specified time frames. All pregnant women/new mothers should receive timely information on MBUs. Admissions boards should be much less intimidating and held as early as possible in order to minimise stress. Once a place has been offered, women should be moved to the MBU as soon as possible, again to reduce stress and ensure women receive appropriate care.

All women, including those with treatable mental health problems should be supported in their applications, and the presence of mental disorder and/or personality disorder should not necessarily function as a bar to accessing MBUs, which can offer women support and stability in the important early months of their children’s lives, and also provide an opportunity for intervention at a time when women may be particularly receptive to change. If women with mental disorder are
identified prior to the MBU application, these women could then be offered additional support if necessary, throughout this process in order to improve their chances of applying for and being given an MBU place. They may also gain more from the structured and supportive environments that prison MBUs can offer, especially if admission functions as a protective factor.

Stronger links needed to be established with Children’s Services so that the reports that are required for MBU applications are completed as quickly as possible, and clear guidance shared with Children’s Services. This should include the provision of onsite social workers in all women’s prisons where pregnant women are held, who can then liaise with social workers assigned to these cases. All pregnant women should be kept informed of the progress of their application, in order to minimise stress and worry. In order to reduce feelings of isolation and vulnerability, women need to be supported and to feel supported, and staff should be aware of women’s pregnancy status, and also of women who have recently experienced separation. Women who would not lose custody of their babies in the community should not lose care of their children only because they are in prison, and this will require a closer working relationship with Children’s Services and a clearer understanding on both sides. Some, if not all Prison MBUs should also be designated as assessment centres, so that women who require further assessment and support can maintain custody of their children during this process, and the thresholds that are applied in the community for child removal are also met for new mothers in prison.
Mental health and pregnancy care and provision

The mental disorders prevalent in this group during pregnancy, particularly anxiety and depression need to be addressed, in order to reduce the risks to, and improve outcomes for their unborn children, as well as for the women themselves. Mental health screening for perinatal women should be in place to ensure all women are diagnosed and can access treatment at this time of elevated risk.

Pregnant women and new mothers in prison should be given access to sufficient and nutritious food. Women should also have access to pregnancy mattresses, additional pillows, breast pads, maternity clothes and other basic provisions to meet their additional physical needs during the perinatal period, and reduce physical pain and discomfort.

In order to achieve much of this, housing pregnant women/new mothers together would allow mental health screening and support, additional resources, food and information, antenatal and postnatal information and classes to be in one place, maximising access and minimising staff time. This might mean using one small wing, part of one wing, or a separate building for this, depending on the structure of the individual prison. Alternatively, women could be housed in smaller, purpose built units, closer to home.

Labour and child birth

Women should be assessed by midwives or other appropriately qualified medical staff when they are in labour or have pregnancy concerns. Decisions about whether they should be transferred to hospital should be based on clinical need, and made
by relevant medical staff and not prison staff. The policy on labour and birth and the use of handcuffs when travelling to and from the hospital should be clear and consistent across the female prison estate, and should be individually risk assessed. The necessity of uniformed offers attending all births, should be individually risk-assessed and the presence of male officers kept to a minimum. Consideration should be given to women’s privacy and dignity post-birth and the impact of male officers on this and breastfeeding.

**Separation**

Women in prison who have been separated from their baby post-birth have experienced the stress of pregnancy in prison, the trauma of separation, and a reduction in social support post-birth, and need targeted support and interventions. Counselling and care should be available to deal with the trauma of separation, as well as any necessary interventions and treatment to address current mental disorder and/or reduce the risk of future mental distress.

They should not be returned directly to the general population (unless they wish to be), and other more appropriate locations need to be identified and provided (e.g. health care wing if suitable). All staff should be appropriately trained and informed of any women who have recently been separated from their new born babies, and should treat them with appropriate care and compassion. They should not be expected to go back to ‘normal’ in the early weeks post-separation.
Provision for children older than 18-months

MBUs offer a supportive environment for mothers and their babies, but the relatively low age limit means that other young children are separated from their mother and an increase in age limits could prevent such separation. Research supports such an increase as it would prevent separation from other young and vulnerable children (e.g. Bowlby, 1969; Ainsworth, 1990). However, there is limited research on what a good age for cut-off would be, or even if there is one, and any increase in the age of children residing in prison MBUs would require greater educational provision, and opportunities for development and play, either within the MBUs, or for children to attend outside facilities to meet their individual needs (Jimenez & Palacios, 2003). There should be greater provision for visits from other children, including overnight visits, to reduce negative impacts and maintain family ties.

8.7.2. Research implications

Alternative approaches

Women who are mothers of young children, or are pregnant should only be imprisoned when there is no other option (UNICEF, 2007). It is unclear why so many of this sample who were first time offenders, and convicted of non-violent crimes whilst pregnant were sentenced. More research needs to identify the reasons for this as well as alternative approaches. Alternative approaches in other countries need to be explored and evaluated and their feasibility for implementation in the UK considered. Once appropriate alternatives have been identified, these should be piloted and outcomes for mothers and children evaluated.
MBU applications and admissions

Research needs to establish why the presence of perinatal depression may be a barrier to accessing MBUs for some women, and how this could be addressed, as well as the function of MBUs as a protective factor against future substance misuse. Further research and evaluation needs to assess the role of prison and Children’s Services staff in applications and admissions, how the application process can be streamlined, and the best approaches for reducing stress and anxiety for pregnant women involved in this process.

Mental health & pregnancy care and provision

Because of the detrimental impacts on mother and child of depression and anxiety during this period, further research needs to establish short and long-term consequences in this group, as well as exploring interventions to reduce this. Pregnancy and antenatal groups should be evaluated in order to identify the most appropriate approach for women in this situation.

Labour and child birth

Further research needs to be carried out into the birth experiences of women in custody, to identify the positive and negative impacts and best practice. Approaches that promote compassion and support bonding and breastfeeding need to be explored and evaluated.

Separation

Levels of postnatal support for women separated from their babies born during imprisonment need to be measured and greater provision for such support should
be put in place. Future research should focus specifically on women who are separated, the mental health impacts, and designing and evaluating support programmes.

**Provision for children older than 18-months**

Very little is known about the children who are too old to be admitted to MBUs. Impacts on children in the community, particularly very young children, need to be explored, as well as the alternative care they are placed in during imprisonment and whether they are reunited with their mother post-release. Research also needs to identify best practice for these older children (including overnight visits and accommodation of older children in mother child units), and implement and evaluate programmes that promote and support attachment and regular contact. Evaluations also need to be carried out on the development of children who live in prison MBUs, and in mother-child houses in countries where older children live with their mothers, in order to establish an appropriate, evidence-based maximum age limit.

**Next steps**

The main research priority should be: a) the establishment of a community MBU for women involved in the Criminal Justice System, that also functions as a Children’s Services approved assessment centre, and an alternative to incarceration; b) an evaluation of this unit comparing the short- and long-term outcomes of women and children in the community MBU with those in prison MBUs, and women in prison separated from their children.
9. References


Council of Europe.


Hansard HC Deb, 11 January 2005, c490W

Hansard HC, 25 November 2009, c238W

Hansard HC, 5 July 2012, c790W


HM Prison Service (2011). *Instruction 54 - Mother and Baby Units*. 


Appendices

Appendix A: Socio-demographic questionnaire

ID No: 

Interview Date: 

Date of Reception: 

What is your status - sentenced (1) or remanded (2) 

What date do you expect to be released? 

Date of Birth: 

Country of Birth:  
England (1) Scotland (2) Wales (3) Northern Ireland (4)  
Irish Republic (5) other (6) 

Please Specify: ..................................................................................  

Ethnic Group: White (1) Black/Caribbean (2) Black/African (3)  
Black/other (4) Indian (5) Pakistani (6) Bangladeshi (7)  
Chinese (8) Other (10) 

Please Specify: ..................................................................................  

Were you working when you were arrested? N=0, Y=1  
Professional/Management (1) Skilled manual (2)  
Semiskilled/unskilled (3) Unclassified, eg student (4)  
Unemployed (6) 

Were you married/living with a partner before your arrest?  
Single(1) Married/cohabiting (2) Separated/divorced (3)  
Widowed (4) 

Were you living in your own home before you were arrested?  
Own home/with family (1) Unsettled e.g. B&B (2) NFA (3)  
Hospital(4) 

Have you ever been homeless? (N=0, Y=1) 

Do you know about Mother and Baby Units? Y=1 / N=0 

How did you hear about them? Prison staff=1, Booklet=2,  
Other inmates=3, Other=4 

Have you applied for a place? Y=1 /N=0 

Yes: What was the reason for that?
If other please specify …………………………………………………

No: What was the reason for that?  

Please specify…………………………………………………………

**Details of Children outside**

**Child 1**

Date of Birth: 

Gender (M=1, F=2)  

Who is the child living with at the moment? 
Father (1) Other member of immediate family (2) Foster parents (3) 
Adoptive parents (4) Care Home (5)  

Has this child ever been placed on the Child Protection Register?  
(N=0, Y=1)  

Or taken into care?  (N=0, Y=1)  

**Child 2**

Date of Birth:  

Gender (M=1, F=2)  

Who is this child living with at the moment? 
Father (1) Other member of immediate family (2) Foster parents (3) 
Adoptive parents (4) Care Home (5)  

Has this child ever been placed on the Child Protection Register?  
(N=0, Y=1)  

Or taken into care?  (N=0, Y=1)  

**Child 3**

Date of Birth:  

Gender (M=1, F=2)  

Who is the child living with at the moment? 
Father (1) Other member of immediate family (2) Foster parents (3) 
Adoptive parents (4) Care Home (5)  

Has this child ever been placed on the Child Protection Register?  
(N=0, Y=1)  

Or taken into care?  (N=0, Y=1)  

**Child 4**
Date of Birth: 

Gender (M=1, F=2) 

Who is the child living with at the moment?
Father (1) Other member of immediate family (2) Foster parents (3) Adoptive parents (4) Care Home (5) 

Has this child ever been placed on the Child Protection Register? (N=O, Y=1) 

Or taken into care? (N=0, Y=1) 

Child 5 

Date of Birth: 

Gender (M=1, F=2) 

Who is the child living with at the moment?
Father (1) Other member of immediate family (2) Foster parents (3) Adoptive parents (4) Care Home (5) 

Has this child ever been placed on the Child Protection Register? (N=O, Y=1) 

Or taken into care? (N=0, Y=1) 

OBSTETRIC & CHILDCARE HISTORY 

How many pregnancies have you had (including current pregnancy) 

What is the expected date of delivery? 

How many children of your own do you have? 

Have you ever had: a miscarriage (N=0, Y, give number) 

A termination? (N=0, Y, give number) 

A still born child? (N=0, Y, give number) 

FORENSIC HISTORY - Current Offence 

Exact Charges: 
1. 
2. 
3. 
4. 
5.
**Past Convictions** (number of convictions in each group):

Exact Charges and number:
1. 
2. 
3. 
4. 
5. 

Total number of prison terms: 

No. of previous prison sentences 

No. of previous remands (detained in prison) 

Longest sentence in months or 888 if not applicable 

Is the current sentence the longest you have had? Y / N

**Smoking - Current**

Do you currently smoke? N=0, Y= 1 

Number of cigarettes per day

**Alcohol - 12 months pre-prison**

How much alcohol do you drink?
None (0) <21 units/week (1) >21 units/week (2) Abuse (3) Non-phys depend (4) Phys depend (5)

(1 unit = 1/2pt, small wine, 1 shot)

**Drugs/ pregnancy/in prison/ever**

Have you ever taken illegal drugs? (N=0, Y=1) 

If no, go to psychiatric history. If yes:

Have you ever taken **Cannabis** (grass, weed, skunk, resin)? (N=0, Y=1)

**Cannabis** when pregnant N=(0), <once/week (1) weekly(2) Abuse (3) Dep. non phys
Dependent non phys(4) Dependent phys (5) N/A 8

**Cannabis In prison** N=(0), <once/week(1)weekly(2)Abuse 3
Dependent non phys (4) Dep phys (5) N/A 8

**Cannabis 12 months Pre-prison** N=(0), <once/week(1)weekly(2)
Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8
Have you ever taken **Amphetamines** (uppers)? (N=0, Y=1) 

**Amphetamines**: when pregnant N=(0), <once/week (1) weekly (2) Abuse (3) Dep non phys (4) Dep phys (5) N/A 8

Amphetamines in prison N=(0), <once/week (1) weekly(2) Abuse (3) Dep non phys (4) Dep phys (5) N/A 8

Amphetamines 12 months Pre-prison N=(0), <once/week(1)weekly(2) Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8

Have you ever taken **Benzodiazepines** (downers)? (N=0, Y=1)

**Benzodiazepines** when pregnant N=(0), <once/week (1) weekly (2) Abuse (3) Dep non phys (4) Dep phys (5) N/A 8

Benzodiazepines in prison N=(0), <once/week (1) weekly(2) Dependence non phys (4) Dependence phys(5) N/A 8

Benzodiazepines 12 months Pre-prison N=(0), <once/week(1)weekly(2) Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8

Have you ever taken **Hallucinogens** (LSD, mushrooms)? (N=0, Y=1)

**Hallucinogens**: During pregnancy N=(0), <once/week (1) weekly(2) Abuse (3) Dep non phys (4) Dep phys(5) N/A 8

Hallucinogens in prison N=(0), <once/week (1) weekly(2) Dependence non phys (4) Dependence phys(5) N/A 8

Hallucinogens 12 months Pre-prison N=(0), <once/week(1)weekly(2) Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8

Have you ever taken **Opiates** (morphine)? (N=0, Y=1)

**Opiates**: During pregnancy N=(0), <once/week (1) weekly(2) Abuse (3) Dependence non phys (4) Dependence phys(5) N/A 8

Opiates in prison N=(0), <once/week1 weekly 2 Abuse 3 Dependence non phys (4) Dependence phys(5) N/A 8

Opiates 12 months Pre-prison N=(0), <once/week(1)weekly(2) Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8

Have you ever taken **Cocaine** ? (N=0, Y=1)

349
**Cocaine: During pregnancy**  
N=(0), <once/week (1) weekly(2)  
Abuse (3)  
Dependence non phys (4) Dependence phys(5) N/A 8  

**Cocaine: In prison**  
N=(0), <once/week1 weekly2 Abuse3  
Dependence non phys (4) Dependence phys(5) N/A 8  

**Cocaine 12 months Pre-prison**  
N=(0), <once/week(1)weekly(2)  
Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8  

Have you ever used **Solvents** (sniffing, lighter fuel etc)? (N=0, Y=1)  

**Solvents: During pregnancy**  
N=(0), <once/week (1) weekly(2)  
Abuse (3)  
Dependence non phys (4) Dependence phys(5) N/A 8  

**Solvents: In prison**  
N=(0), <once/week (1) weekly(2) Abuse (3)  
Dependence non phys (4) Dependence phys(5) N/A 8  

**Solvents 12 months Pre-prison**  
N=(0), <once/week(1)weekly(2)  
Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8  

**Other, ever** (N=0, Y=1) please specify:  

**Other: During pregnancy**  
N=(0), <once/week (1) weekly(2) Abuse (3)  
Dependence non phys (4) Dependence phys(5) N/A 8  

**Other: In prison**  
N=(0), <once/week (1) weekly(2) Abuse (3)  
Dependence non phys (4) Dependence phys(5) N/A (8)  

**Other 12 months Pre-prison**  
N=(0), <once/week(1)weekly(2)  
Abuse (3) Dependent non phys (4) Dep phys (5) N/A 8  

Have you ever injected any of these drugs? N=0, Yes, clean needles (1)  
Shared needles (2) N/A (8)  

**PSYCHIATRIC HISTORY/TREATMENT**  

Have you ever seen a psychiatrist? Y=1, N=0  

N(0) Report only (1) Child guidance only (2) Out patient only (3)  
Inpatient <5 (4) Inpatient >5 (5)  

Were you given a diagnosis? (N=0, Y =1)  
Please specify:…………………………………………  
At which hospital:…………………………………………  
First seen: (preferably month & year)  

Age at first admission:
Voluntary or MHA? □

Admitted in last 5 years? Yes=1, N=0 □

Date of admission in last 5 years □ □ □

Was this voluntary or under Mental Health Act? (V=1, S=2) □

Management: Tablets (1) Injections (2) Counselling (3) ECT (4) Other (5) Please specify………………………………

Were you taking any of the following drugs or medicines prescribed by a doctor in 12 months pre-prison? □

Benzodiazepines (N=0, Y=1)

Opiates (N=0, Y=1)

Antidepressants (N=0, Y=1)

Antipsychotics: (N=0, Y=1)

Other: (N=0, Y=1)

Apart from reception, have you been seen by a prison doctor or other member of prison healthcare staff during this period in prison? N=0 Y=1 □

Have you been seen by the visiting psychiatric service here in prison? (N=0, Y=1) □

Have you spent any time in the prison healthcare centre as an inpatient during this period in prison for a mental health problem? eg depression (N=0, Y=1) □

DELIBERATE SELF-HARM

Have you ever tried to kill yourself? (N=0, Y=1) □

Have you ever repeatedly cut yourself when tense (N=0, Y=1) □
Appendix B: Follow-up birth questionnaire

MBU Follow up questions

Date:
Location:
Details of child born in custody
  Date of Birth:
  Type of Birth:
  Birth weight
  
Gender (M=1, F=2)

Who is the child living with at the moment?
Father (1) Other member of immediate family (2) Foster parents (3)
Adoptive parents (4) Care Home (5)

Has this child been placed on the Child Protection Register?
(N=0, Y=1)

Or taken into care? (N=0, Y=1)

Did you apply for an MBU place?

Were you given an MBU place? Y/N

Do you know the reasons for this decision?

Please specify........................................................................................................................................
Appendix C: Participant Information Sheet (PIS)

Pregnant women in prison, mental health and admission to prison mother and baby units and initial outcomes for mother and child

PARTICIPANT INFORMATION SHEET
QUESTIONNAIRES, INTERVIEWS AND RECORDS ACCESS

Introduction
My name is Rachel and I am a PhD student at the University of Manchester in the Institute of Brain, Behaviour and Mental Health. My study is looking at pregnant women in prison and mental health. I will also be looking at the application procedure for prison mother and baby units (MBUs) and how decisions are made. Finally I also want to look at the effects of being in a prison MBU and of being separated from your baby while you are in prison.

What is the purpose of the study?
We do not know very much about the mental health and experiences of pregnant women in prison in England. Or the effects on women and their babies who do and do not get a place in a prison MBU. For prisons to offer the specific support and treatment pregnant women and mothers in prison need, we first need to understand the decisions made about their children. We need to understand the effect of these decisions, women’s experiences, and things that might have a positive effect on mothers and babies in prison.

The main goals of this study are to find out what influences a woman's decision to apply for an MBU place, and what influences the decision to offer a place to a mother and child. We also want to understand the effect of these decisions on mothers and babies in prison so that we can improve the experience for women and children and prevent separations that are not necessary.

Why have I been invited to take part?
You have been invited to take part because you are in prison and are pregnant.

Do I have to take part?
No, taking part is voluntary. If you do not want to take part you do not have to give a reason and no pressure will be put on you to try and change your mind. You can change your mind about taking part at any time. If you decide not to take part or withdraw at any stage, your legal and parole rights, and your access to health and social care will not be affected. It will
also not affect any decisions made by the Prison, Prison Service or other authorities about you or your child.

**What will happen to me if I take part?**
If you agree to take part, I will arrange a time to come and see you and ask you some questions and this should take about one and a half hours. I will be asking you questions about your life before prison, pregnancy, and mental health issues. I will also ask some of those women who take part additional questions about your experience of being pregnant in prison, and what you plan to do when your baby is born. With your permission this part of the interview will be recorded.

As part of the study I would also like to look at your medical records at the prison, and at your community GP records, to collect further information, but I will only do this if you give your written permission.

I would also like to interview everybody who takes part again, around 6 weeks after your due date. I will ask your permission for this during the first interview, and if you agree I will contact you again at this time to see if you are still happy to do a second interview. If you are willing to do this we will arrange a convenient date and time. Some people will be asked questions about motherhood and prison and this part of the interview will be recorded only with your permission.

If you decide not to go ahead this will have no impact on your care or treatment.

**What are the potential disadvantages of taking part?**
For all participants there is the risk that you may become upset during the interviews as we will be talking about your experiences and mental health and there may be issues that you find traumatic or difficult or upsetting to talk about. If you do become upset, we can stop the interview at any time and, if you decide you want to continue, we will only re-start the interview when you are ready.

**What are the potential benefits of taking part?**
There are no direct benefits to you of taking part. However, taking part will help us understand what the needs of pregnant women in prison are and develop specific services for pregnant women and new mothers in prison in the future.

**If I agree to take part, what happens to the information?**
The information you give us will be kept confidential (private) and will be used in a way that will not allow you to be identified individually. However, information collected during the study may be looked at by individuals from the University of Manchester, from regulatory authorities or from an NHS Trust,
e.g. to check that the proper consenting processes have been carried out.

The information will be taken to the University of Manchester in person by the researcher where it will be kept in a locked filing cabinet for no more than ten years. If during the period of the study, for whatever reason, you lose the ability to make your own decisions your data will be withdrawn from the study. Your data will also be withdrawn from the study if the research team are unable to confirm that you are pregnant.

Please also be aware that the researcher has a duty to inform prison staff of the following:

a. Behaviour that is against prison rules and can be adjudicated against;
b. Information that either indicates a risk of harm to yourself or others or refers to a new crime committed or that you plan to commit;
c. Undisclosed illegal acts;
d. Behaviour that is harmful to you (e.g. intention to self-harm or commit suicide) and;
e. Information that raises concerns about terrorism, radicalisation, or security issues.

What will happen with the results of the research study?
It is hoped that the results of the study will be used to improve services for pregnant women in prison and their children. The results of the study will be available to the prison so that if you want to know about the findings of the study you will be able to find out.
Appendix D: Informed consent form – initial interview

Pregnant women in prison, mental health and admission to prison mother and baby units and initial outcomes for mother and child

PARTICIPANT CONSENT FORM

PHASE 1 & 2 QUESTIONNAIRE AND RECORDS ACCESS

Name: ____________________________

Please initial in each box

1. I confirm that I have read and understood the attached information sheet (version 3, 07.08.2014) and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw from the study at any time without my medical care or legal rights being affected.

3. I give permission for the research team to access my inmate medical records.

4. I give permission for the research team to access my GP records.

5. I give permission for the research team to record and transcribe interviews with me, and to use anonymized quotes from these interviews in publications.

6. I understand that relevant sections of my data collected during the study may be looked at by individuals from the University of Manchester, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my data.

7. I hereby give consent to be involved in this research project.

Name of participant signature of participant Date

Name of researcher signature of researcher Date
Appendix E: Follow-up consent form

Pregnant women in prison, mental health and admission to prison mother and baby units and initial outcomes for mother and child

PARTICIPANT CONSENT FORM

PHASE II – 6 WEEK FOLLOW UP

Thank you for consenting to take part in the above study. We are planning to do a follow up interview with all participants who agree to this. In order to do this, we would like your permission to contact you again 6 to 8 weeks after your due date to see if we can arrange a second interview. You do not have to agree for us to contact you again. If you agree, when we contact you again you will still have the right to refuse to take part in the follow up stage of the study. Your details will be kept strictly private and used only for the purpose described.

1) I agree to being contacted again approximately 6-8 weeks after my due date to see if I am willing at that time to take part in a follow up study.

2) I agree that the researcher may contact me through the prison service if I am still detained.

Name of participant…………………………………………………………

Signature……………………………………………………………………
Appendix F: Qualitative topic guides

Pregnancy in Prison – Qualitative interview guide 1 (first contact)

1. Introduction
   Explain the reason for the qualitative interview
   Overview of what the interview will cover
   The interview will take a maximum of 1 hour.
   Confidentiality
   Material used from the interview will be used in the PhD thesis – quotes may be
   used, but will be non-traceable and completely anonymous
   You can end interview at any point if you wish
   No right or wrong answers – just want thoughts and opinions.
   If you do not want to answer a question, you don’t have to
   Any questions?
   Are you still happy for the interview to be recorded?

1. experience of pregnancy in prison
   a. difficulties
   b. support
   c. feelings

2. information
   a. who/how
   b. quality and quantity

3. MBU application
   a. why/why not
   b. experience
   c. difficulties/obstacles
   d. influences

4. Mental illness
   a. previous
   b. current
   c. impacts on prison
   d. impacts on parenting
Pregnancy in Prison – Qualitative interview guide 2 (follow up)

1. Introduction
   Explain the reason for the qualitative interview
   Overview of what the interview will cover
   The interview will take a maximum of 1 hour.
   Confidentiality
   Material used from the interview will be used in the PhD thesis – quotes may be used, but will be non-traceable and completely anonymous
   You can end interview at any point if you wish
   No right or wrong answers – just want thoughts and opinions.
   If you do not want to answer a question, you don’t have to
   Any questions?
   Are you still happy for the interview to be recorded?

1. experience of pregnancy/childbirth in prison
   a. difficulties
   b. support
   c. feelings
   d. comparisons with previous experiences (if relevant)

2. MBU application
   a. experience
   b. difficulties/obstacles
   c. outcome/appeals (if relevant)

3. experience of motherhood in prison (if relevant)
   a. MBU unit
   b. parenting support
   c. difficulties

4. experience of separation (if relevant)
   a. experience
   b. impact
   c. emotions

5. Mental illness
   a. impacts on parenting
   b. impacts on decisions
Appendix G: NRES ethical approval

22 October 2014

Ms Rachel Dolan
University of Manchester
Jean McFarlane Building
Oxford Road
M14 9PL

Dear Ms Dolan

Study title: Pregnant women in prison: Mental health and admission to prison mother and baby units and initial outcomes for mother and child

REC reference: 14/NE/1158
IRAS project ID: 163979

Thank you for your letter of 17 October 2014, responding to the Committee’s request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Miss Donna Bennett, nrescommittee.northeast-york@nhs.net.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

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Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS sites

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

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<th>Document</th>
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<th>Date</th>
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A Research Ethics Committee established by the Health Research Authority
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**Statement of compliance**

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

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After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

| 14/NE/1158 | Please quote this number on all correspondence |

With the Committee’s best wishes for the success of this project.

Yours sincerely

pp

Mr Steve Chandler
Chair

Email: nrescommittee.northeast-york@nhs.net

Enclosures: "After ethical review – guidance for researchers" [SL-AR2]

Copy to: Ms Lynne MacRae, University of Manchester

A Research Ethics Committee established by the Health Research Authority
Appendix H: NOMS ethical approval

Rachel Dolan
University of Manchester
Oxford Road
Manchester
M13 9PL
rachel.dolan@postgrad.manchester.ac.uk

10 February 2015

APPROVED SUBJECT TO MODIFICATIONS – NOMS RESEARCH

Ref: 2014-333
Title: Pregnant women in prison: Mental health and admission to MBUs

Dear Rachel,

Further to your application to undertake research across NOMS, the National Research Committee (NRC) is pleased to grant approval in principle for your research. The Committee has requested the following modifications:

- As set out in the NOMS Research Applications Instruction, incentives should not be given to offenders while under prison or probation supervision. Payment will only be considered only in very exceptional circumstances – there will need to be strong evidence that response rates have become problematic in the approved study before seeking approval through the NRC for payments to be made.
- The availability and appropriateness of key training remains at the discretion of individual establishments.
- Please ensure that all of the following are included in all participation information sheets/consent forms:
  - Participants should be asked for their consent to the use of audio-recording equipment.
  - Participants should be informed that there will be neither advantage nor disadvantage as a result of their decision to participate or not participate in the research.
  - It must be made clear to research participants that they can refuse to answer individual questions or withdraw from the research until a designated point, and that this will not compromise them in any way.
  - Participants should consent to any follow-up contact and the method of this contact.
  - Participants should be informed how their data will be used and for how long it will be held.
- The following should also be included in the participation information sheets/consent forms for offenders:
  - Access to any NOMS records for the participants should be explicitly covered.
It needs to be clear that the following information has to be disclosed: behaviour that is against prison rules and can be adjudicated against, illegal acts, and behaviour that is potentially harmful to the research participant (e.g. intention to self-harm or complete suicide) or others.

Potential avenues of support should be specified for those who are caused any distress or anxiety.

The respondent should be asked to direct any requests for information, complaints and queries through their prison establishment/probation provider. Direct contact details should be removed.

Before the research can commence you must agree formally by email to the NRC (National.Research@noms.gsi.gov.uk), confirming that you accept the modifications set out above and will comply with the terms and conditions outlined below and the expectations set out in the NOMS Research Instruction (https://www.gov.uk/government/organisations/national-offender-management-service/about/research).

Please note that unless the project is commissioned by MoJ/NOMS and signed off by Ministers, the decision to grant access to prison establishments, National Probation Service (NPS) divisions or Community Rehabilitation Company (CRC) areas (and the offenders and practitioners within these establishments/divisions/areas) ultimately lies with the Governing Governor/Director of the establishment or the Deputy Director/Chief Executive of the NPS division/CRC area concerned. If establishments/NPS divisions/CRC areas are to be approached as part of the research, a copy of this letter must be attached to the request to prove that the NRC has approved the study in principle. The decision to grant access to existing data lies with the Information Asset Owners (IAOs) for each data source and the researchers should abide by the data sharing conditions stipulated by each IAO.

Please quote your NRC reference number in all future correspondence.

Yours sincerely,
National Research Committee