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Characterising core beliefs in psychosis: a qualitative study

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Abstract

Background: Cognitive-behavioural treatments are recommended for people with psychosis. Core beliefs regarding the self and others are a key part of the models underpinning cognitive behavioural therapy but detailed understanding of these putative beliefs in people with psychosis are limited. A greater understanding of these mechanisms is necessary to improve and refine treatments. Aims: This study utilised a qualitative approach to explore core schematic beliefs in psychosis (strongly held positive and negative beliefs about the self and others) and their relation to hallucinations and delusions. Method: Twenty individuals with psychosis participated in individual semi-structured interviews. Inductive thematic analysis was used to analyse the interviews. Results: Four emergent themes were identified: i) The solidity and permanency of core beliefs, ii) the causes and development of core beliefs, iii) a synergistic relationship between core beliefs and symptoms, and iv) core beliefs associated with images and their influence on psychotic symptoms. Conclusions: This study provides new insights into the range and character of core beliefs in psychosis and provides important data to guide ongoing and future development of treatment approaches for psychosis.

Keywords: core beliefs, interview, psychosis, schema, schizophrenia, qualitative

Introduction

Psychological therapies are recommended for individuals with psychosis by the UK National Institute for Health and Care Excellence (NICE, 2014). Cognitive Behavioural Therapy (CBT) is one of the most widely studied and offered psychological treatments for adults with psychosis. However, CBT does not work for everyone and treatment effects are often small (Wykes, Steel, Everitt & Tarrier, 2008; Jauhar, McKenna, Radua, Fung, Salvador & Laws, 2014). The magnitude and inconsistency of treatment outcomes highlight a pressing need to augment current therapeutic provision. One approach that holds promise in other complex, chronic mental health conditions, is the integration of therapeutic interventions to address the core beliefs or “schema” that are thought to underpin an individual’s mental health experience.

There are a number of generic definitions of schema, which regard these constructs as cognitive structures laid down in memory. Segal (1988) defined schema as organised elements of past reactions and experience that form a relatively cohesive, enduring body of knowledge thought to drive how events are appraised. Chadwick, Trower & Dagnan (1999) developed the Evaluative Beliefs Scale (EBS), which measures negative person evaluations. These were described as global and negative person evaluations and consisted of sub scales such as self-self (“I am a total failure”), other-self (“People see me as a total failure”) and self other (“Other people are total failures”). Fowler et al. (2006) define core schema as beliefs a person holds about themselves that have a powerful influence on that person's responses to social situations and how they interact with world. They argue that these beliefs are long established and strongly held, and that individuals actively look for information to reinforce them. Fowler et al. (2006) used the Brief Core Schema Scales (BCSS) and

recruited over 700 students and found that paranoia was associated with negative-self beliefs, negative-other beliefs, anxiety and less positive beliefs about others. The study also measured self-esteem and found it was a poorer predictor of paranoia and did not distinguish between the non-clinical group and the psychosis group, which the schematic beliefs did. Broadly, there appears to be overlap between self-esteem and schematic beliefs, with there being variation between individuals.

Schema may comprise of beliefs, personality variables and social variables regarding the self and others (Young, Klosko and Weishaar, 2003; Taylor & Arntz, 2016). Core beliefs or schema guide an individual's appraisals and thoughts, feelings and behaviours in response to hallucinations and delusions, and are believed to play a key role in the development and maintenance of the disorder (Garety, Kuipers, Fowler, Freeman & Bebbington, 2001; Morrison, 2001). Thus far, there has been insufficient theoretical and empirical work to justify a sharp distinction between core beliefs and schemas and as a result the terms can be interchangeably used (Riso & McBride, 2007).

Recent reviews offer empirical support for the presence of negative beliefs about the self and others in psychosis (Kesting & Lincoln (2013); Tiernan, Tracey & Shannon, 2014). Kesting & Lincoln (2013) examined the relevance of self esteem and self schemas to persecutory delusions in a systematic review. They identified 52 studies which met their inclusion criteria. The studies found low global explicit self esteem and negative self schemas in people with persecutory delusions. The studies did not support the hypothesis that persecutory delusions enhance self esteem, but support the theory that they directly reflect specific negative self schemas.

Tiernan, Tracey and Shannon (2014) systematically reviewed literature exploring the relationship between self concepts and paranoia in psychosis. Eighteen studies met inclusion criteria. They found that paranoia was associated with more negative self concepts when examined cross sectionally. Research related to negative self concepts and paranoia were more mixed. Research which examined dimensional aspects of self concepts and paranoia, identified associations between instability of self-concepts and paranoia.

A recent study has also demonstrated that individuals with psychosis who score highly on dependency and enmeshment beliefs have poorer social functioning (Taylor & Harper, 2017). One method of identifying core beliefs in cognitive therapy, has been to ask people with psychosis about any mental imagery they experience (Morrison, 2004). This might include asking about the content and source of images. In a number of disorders, it has been suggested that identification and exploration of imagery can provide access to deeper level belief and act as a “mirror” to the self (Cooper, 2009; Stopa, 2009) A number of studies in other areas suggest that imagery will have a more powerful influence on emotion, and be particularly rich and detailed than the verbal description of the same (Holmes & Matthews, 2005).

Imagery has been defined as mental representations which occur without the need for external sensory input (Stopa, 2009). It has been associated with the incidence of psychotic experiences and is acknowledged to play a role in maintaining hallucinations and delusions (Morrison, 2004). Images may be linked with specific core beliefs and appraisals of psychotic symptoms and thus, assessment and formulation of these is important for psychological interventions. There is evidence of intrusive negative images being a significant difficulty in psychosis. As mentioned earlier, imagery, can be a useful way in assessment of identifying associated negative

early experiences and negative core beliefs. Thus, individuals who report troubling images and endorse negative core beliefs are reporting maintaining factors for their psychotic experiences (e.g. an image of a past trauma which frequently, intrusively appears and reinforces negative beliefs about the self and heightens paranoid ideation). Two studies in psychosis have found approximately 73-74% of people with psychosis report intrusive mental images related to their psychotic symptoms (Morrison et al. 2002; Schulze et al. 2013) Interventions which can reduce negative images and schemas may also reduce delusions severity or distress. As yet, there has been little exploration of these techniques in psychosis.

The majority of the research into core beliefs and schema in psychosis has been quantitative. Images often echo traumatic events or personal memories and can be recurrent, feel threatening and be distressing. Qualitative explorations of core beliefs and schema in psychosis are lacking, and may reveal new insights about the interaction between schemas and psychotic symptoms from the service user perspective. Enhancing our understanding of these interactions may enable services to provide and tailor care in a schema informed way.

The aim of the current study was to examine participant's experiences of their psychotic symptoms and core beliefs using a qualitative method. Specifically, we were interested in 1) how do participants with psychosis define or describe a core belief, 2) how do they perceive and/or understand the relationship between core beliefs and psychotic experiences, and 3) what images may be associated with core beliefs and/or psychotic experiences?

Method

Ethical Approval and Approach

The study received ethical approval from the National Health Service (NHS) Health Research Authority (NHS HRA), UK (13/NW/0264) and permission to proceed from Lancashire Care NHS Foundation Trust and Greater Manchester West Mental Health NHS Foundation Trust (Refs: 124272 and 782) in the North West of England. Eligible participants were approached by a member of the care team and given a brief study overview. Interested participants were given a participant information sheet to review for least 24 hours. With consent, contact details were passed to the research team, who contacted service users to discuss the study and answer any questions. Participation was voluntary and participants could withdraw at any time without their care or rights being affected. Informed, written consent was given before study participation. Thematic analysis was selected as the most suitable qualitative research method to answer the aims of this study as it allows the identifying, analysing and reporting of themes (sometimes called patterns) within a dataset (Braun & Clarke, 2006) and has previously been used in studies of people with psychosis. (Nixon, Hagen, & Peters, 2010). Thematic analysis is more suited to answering our research question than other possible choices such as interpretative phenomenological analysis (IPA) or grounded theory. For example, grounded theory (Charmaz, 2010) assumes that human behaviour is dependent on the meanings that individuals make of situations; conversation analysis would not be appropriate as it examines social interaction, with a particular focus on patterns in language. IPA examines a phenomena from the point of view of those who experience them (Willig, 2008) but it relies on participants being able to communicate the rich texture of their experience to a researcher. The aim of the current study is not to create a new theory

but to examine more generally themes in participant's reports of their experience of schema and psychosis.

Participants and Recruitment

Participants were eligible if they were i) aged 18-65 ii) met ICD-10 criteria for a schizophrenia-spectrum diagnosis (schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder or psychotic disorder not otherwise specified) iii) had capacity to give informed consent, iv) currently receiving care from an NHS mental health team, v) had a score of 3 or more on the Positive and Negative Syndrome Scales (PANSS) P1 Delusions or P3 Hallucinations subscales. Exclusion criteria were having an acquired brain injury or substance misuse judged to be the acute cause of the psychotic experiences, or English language skills of a level that prohibited data collection and communication with the researcher. Translation facilities were not available.

Procedure

The study used an exploratory qualitative design. A convenience sampling strategy was used to maximise recruitment. Modification of the interview schedule occurred in parallel with data collection and analysis. Study recruitment continued until data saturation was reached (Braun & Clarke, 2006; 2012). The interviews were guided by an open-ended semi-structured topic guide which focussed initially on symptoms of psychosis and then on core beliefs and schemas (see Table 1). Study documents received feedback from two service user consultants during study development. (First Author), a male, practising clinical psychologist, who had three years post-doctoral experience (ClinPsyD) when the study began, conducted all interviews. There was no previous relationship with any interview participants. The information sheet informed them briefly about the area of interest, that is, beliefs and

psychosis. The interview schedule was discussed and amended between interviews by the research team. The interview schedule included a range of topics such as service users understanding and conceptualisation of beliefs and core beliefs e.g. ‘What does the term ‘belief ‘ mean to you?’ and “What does the term ‘core belief’ mean to you?”. Other questions included enquiring about personal experiences (if any) of core belief influencing a participant’s voices: e.g. “You were just saying.... Can you tell me a little bit more about that? How did you feel about that? Can you tell me how things developed from then?”. Further questions included recent experiences (if any) of core belief influencing paranoia, perceptions of beliefs in others e.g. “How do you think core beliefs develop in other people?” and asking about imagery (Pictures in your ‘mind’s eye’) in relation to any of the above.

The interviewer kept a diary record of reflections from each of the interviews which were referred to during the analysis process to aid recollection of interviews. The study is reported utilising the Consolidated criteria for Reporting Qualitative studies (COREQ; Tong, Sainsbury & Craig, 2007). Given the wide ranging nature of psychotic experiences, across experiencing hallucinations, delusions and thought disorder, we sought to interview a wide range of participants with experience of psychosis and differing psychotic experiences. We anticipated this would be approximately twenty participants (based on other similar studies). However, it could have been more or less participants, as we sought to utilise a purposive sampling strategy with selection of participants based on salient features of the population, continuing recruitment, modifying the interview schedule and conducting analyses in parallel with data collection until reaching theoretical saturation.

Analysis

The individual interviews were digitally recorded and transcribed verbatim. The interview data was analysed using a thematic analysis approach, using a six-phase approach (Braun and Clarke, 2006). In considering the phenomenon of core beliefs and psychotic experiences, it is argued that while for each participant this will be unique experience and have individual meaning, we suggest that there will be common “themes” or “concepts” between those who consent as participants. The psychological, social, recovery background and life experiences of the individuals will undoubtedly influence the nature of interviews undertaken. The way experiences are described will be influenced by the how the interviews were conducted and who conducted them (in this case, a clinical psychologist). The interviews, analysis, results and interpretation will all be influenced by the way their experiences are shared and how both interviewer and interviewee made sense of it. This could then be considered a constructionist epistemological position, or contextual constructivism.

In phase one, the data was reviewed through reading and re-reading transcriptions and interviewer reflections and noting down initial ideas. Phase two involved generating initial codes from each interview. Each of the interview transcriptions were coded individually, line by line to identify all relevant features of the data and codes collated systematically. In phase three, the resulting codes were grouped together into conceptual categories with shared or allied meaning. Phase four reviewed these themes, by presenting them to the research team, checking that they worked with the coded extracts and with the dataset as a whole. This iterative process continued until in the fifth phase, the themes were named and defined. (1st Author) undertook coding of the first four interview transcripts, which were reviewed independently by (2nd Author) and (3rd Author) at regular meetings. Subsequent

coding was undertaken by (1st Author) and discussed at regular meetings with (2nd Author) and (3rd Author). Alternative interpretations were discussed until consensus was reached for the final coding structure. Participant checking of the data coding process was not performed. The sixth phase involved choosing compelling extracts which help explain and justify the themes, and relating these back to the main research question (Braun & Clarke, 2006).

In the following section, quotes are presented under each theme to illustrate the range of views that appear recurrently across the interviews. Identifying details have been changed in order to preserve confidentiality and participant anonymity.

Results

Twenty participants were recruited from participating Early Intervention Services and Community Mental Health Teams. Twenty-nine participants were referred as potentially eligible, of which one declined to participate and a further six were unable to be contacted. Twenty-two were assessed for eligibility and of these, two did not meet inclusion criteria of being sufficiently symptomatic. Twenty consented to take part and completed the interviews. Interview duration ranged from 40 - 90 minutes. Only one participant reported having received formal CBT for Psychosis from a CBT Therapist or Clinical Psychologist. Some of the services which participants were recruited from aimed to offer Psychosocial Intervention informed case management, and so may have had some exposure to a basic thought feeling behaviour model, but this would have been unlikely to include an historical formulation with core beliefs or schemas included. Table 1 outlines the demographic information. The analysis identified four major themes and eleven minor themes, referred to here as 'characteristics' (see Table 2).

Table 1
Demographic Characteristics (N=20)

Variable		Value	%
Age	Mean (S.D.)	31.49 (9.0)	-
	Range	18-47	-
Gender	Male	15	75
	Female	5	25
Ethnicity	White British	16	80
	Any Other White	1	5
	White Irish	1	5
	Pakistani	2	10
Living Status	Alone	6	30
	With Parents	4	20
	Spouse/partner and/or children	4	20
	Children Only	1	5
	Supported Accommodation	1	5
	Other	4	20
Relationship Status	Single	16	80
	Married/Common Law Partner	2	10
	Engaged	1	5
	Separated/Divorced	1	5
Employment	Employed (Part Time)	3	15
	Voluntary Work	4	20
	Unemployed	11	55
	Retired	1	5
	Home Duties	1	5
Highest Education	Secondary	4	20
	Further	8	40
	Higher	8	40

Table 2
Overview of Themes

Major Themes	Theme Characteristics
1. The solidity and permanency of core beliefs	1.1 Difficult to Change 1.2 Long-lasting 1.3 Beliefs drive (long-standing) behaviours
2. The causes and development of core beliefs	2.1 Negative core beliefs influence experience of developing psychosis 2.2 Early negative core beliefs overlap with symptoms (voices and paranoia) and can influence each other 2.3 Trauma influences negative beliefs 2.4 Negative social/interpersonal experiences influence core beliefs
3. The synergistic relationship between core beliefs and symptoms	3.1 Negative self beliefs influence symptoms 3.2 Voices can confirm negative self-beliefs 3.3 Psychosis can reinforce negative beliefs about others 3.4 Positive Self Beliefs and psychotic experiences interact (in both directions)
4. Core beliefs, images and their influence on symptoms	4.1 Negative beliefs about self/others, influence voices and images 4.2 Negative-other beliefs and flashforward persecutory paranoia

Major Theme One: The Solidity and Permanency of Core Beliefs

A number of features of core beliefs were reported. These included describing core beliefs as being *difficult to change*, *long-lasting*, something which *drives behaviour* and can influence interpersonal actions. For participants, core beliefs were important to them and difficult to shake off or change. Some participants described core beliefs as being strongly held, longlasting, involving something held as true by them or which felt extremely real. The theme characteristic 1.1 *Difficult to change* is exemplified by the following quote:

"Something so strong inside you that it can't be changed, I suppose...it can't be changed, not matter what the evidence" (Participant 12)

A number of participants with psychosis described voice hearing experiences which aligned with beliefs that they held about themselves. The specific nature of some of these beliefs reported had been longstanding (theme characteristic 1.2 *Longlasting*), to the extent that some reflected that they felt like they were part of the person's sense of self. In the following quote, the participant described feeling as though the voices were a core part of their sense of self and thus related to core beliefs about the self.

"[The voices] just go off and you get used to 'em. Now it feels, well, weird thinking that if they ever went, I'd... it's like losing a part of myself, if you know what I mean." (Participant 14, Male, EIS)

Core beliefs were also described as reflecting the individual's main ideals and as being a main driver for their behaviour (theme characteristic 1.3 *Beliefs drive longstanding behaviour*), both within and outwith episodes of psychosis:

"Something that's an integral part of your personality, so an idea or thought that's strong enough to influence how you behave and act around other people...I'd say they were also quite long lasting, they don't...it's not something that changes overnight or anything." (Participant 4, Male, EIS)

Major Theme Two: The Causes and Development of Core Beliefs

Participants reflected on a number of life experiences which they spontaneously linked with the content of their voices, and associated with paranoid

beliefs and negative beliefs about the self, others and the world. Traumatic experiences were mentioned by a number of participants. These included both childhood bullying and more recent physical assaults. In terms of experiences of bullying, there were a number of participants who reported that these led to negative beliefs. Often bullying experiences extended over a long period of time which further compounded negative beliefs about the self, reinforced by negative auditory hallucinations (theme characteristic 2.1 *Negative core beliefs influence experience of developing psychosis*):

"Some people can just be really, really, really, cruel... I've been bullied, like, all my life, so like all the way through primary school and secondary and college...some people can be really, really, really, cruel ...[the voice] it just, like, bullies me really, calls me names... I've always thought low of myself, like, even when I was a kid" (Participant 19, Female, EIS).

Some participants reported developing negative beliefs about others that had some overlap with paranoid beliefs. These could include negative beliefs about others and suspicious thoughts about the intentions of others. A number of participants reported experiencing bullying as past life experiences which led to these negative beliefs about others, and persecutory paranoia. These experiences reinforced negative beliefs about others and feelings that others intended harm toward them (theme characteristic 2.2 *Early negative core beliefs overlap with symptoms (paranoia) and can influence each other*):

"My mates started calling me dirty names and started getting me paranoid...and I was thinking, yeah, I must be yeah, I am a bit strange." (Participant 5, Male, CMHT)

Sadly, negative experiences for some participants continued from school and college into adulthood. These further reinforced negative beliefs about others. Some participants also identified a link between experiences at work and the development of their voices (auditory hallucinations), thus suggesting potential links between the experiences, beliefs and symptoms (theme characteristic 2.2 *Early negative core beliefs overlap with symptoms (voices) and can influence each other*):

"Hearing the voices in my head and things like that...like swear words to me ... probably because in my previous job people used to kind of swear a lot at you...I did once think the telly was talking to me...like saying swear words to me and everything like that? You know what I mean, being abusive to me? I think, um...the world is sometimes, um, a bad place."

(Participant 17, EIS)

A number of participants reported feeling let down in their interpersonal relationships, with family, friends and in romantic relationships. This was reflected in a number of negative beliefs about others. These could include beliefs about being unable to trust others, pessimism about future relationships and negative beliefs about others and the world (theme characteristic 2.4 *Negative social/interpersonal experiences influence core beliefs*):

"Every relationship I've ever had, you know we've, they've kind of abused my trust and that, and I just can't be arsed with relationships anymore, at this time in my life you know... I get really negative with everything, I hate my world and I hate the people... the world is just has, everything's there for everyone else isn't it, you know like, where there's a need." (Participant 5, Male, CMHT)

Understandably, these led to a number of negative beliefs about others and negative beliefs about the self being developed and reinforced if they happened on repeated occasions (theme characteristic 2.3 *Trauma influences negative beliefs*). However, when out of these situations, positive beliefs about the self could also develop:

“I was having a relationship with somebody...I suffered domestic violence...I have had bad beliefs...like thinking that ‘I can’t cope’ and can’t manage on my own and stuff ... I believe I’ve come a long way from what happened to me in the past and I believe that I’m doing really well in what I’m doing.” (Participant 10, Female, EIS)

In addition to life events, trauma and interpersonal relationships influencing beliefs about self and others, participants reflected on the relationships they developed with their psychotic experiences. Generally, this was within the context of their voice hearing experiences. Some participants stated they believed that their voice was someone who they had known, for example a family member, like a mother, father, or grandparent. This seemed to be associated with positive core beliefs about self as being worthy of care and beliefs about others providing care and attention (theme characteristic 2.4 *Negative social/interpersonal experiences influence core beliefs*):

“I think the voices, I think it's my Nan telling me to like you know 'don't do it' and like or 'come here' to get out of the domestic violence situation. I have had bad beliefs in people like thinking that I can’t cope and can’t manage on my own... I felt awful in myself.” (Participant 10, Female, EIS).

Some participants also described their experiences as a gift which resided deep inside oneself or sense of self. For one participant who had been with mental health services some time, this was to the extent that they believed their voice hearing

experiences might be linked with family history and be passed from one generation to the next:

"I believe I'm human and that I'm just a normal man but I've got these gifts, like I can hear voices and stuff and I believe something might happen in my future or one of me descendants future. I believe it'll get passed on down." (Participant 20, Male, CMHT)

Participants also reported strong positive beliefs regarding their relationships with visual hallucinations or clear mental imagery. Images could also be long-lasting, well integrated and an important relationship in one's life. Images which had an early onset, were understood in the context of a normalising context, for example an imaginary companion:

"I've listened all my life. I just thought [he was an] imaginary friend and when I were young, I thought everybody had an imaginary friend. I'm here for a reason and it'll all come to light one day." (Participant 20, Male, CMHT)

In summary, a number of the participants' quotes highlight the links between interpersonal relationships (with peers, friends and family), the development and maintenance of core beliefs (negative beliefs about self and others) and the relationship with these beliefs and psychotic experiences.

Major Theme Three: Synergistic relationship between core beliefs and symptoms

For some of the participants interviewed, negative beliefs about the self were reflected in voice hearing experiences. These participants, particularly those with long standing histories of voice hearing, found that this alignment occurred through a dialogue of derogatory and comments which were sometimes frightening e.g. being

told one's self was useless, worthless that targeted long standing feelings of vulnerability or negative beliefs about the self (theme characteristic 3.1 *Negative self beliefs influence symptoms*):

"Well negative [beliefs], I am vulnerable,... this particular voice was just trying to frighten me." (Participant 18, Female, EIS)

Some participants reported the synergy between their beliefs and symptoms appeared more entrenched, with symptoms not only responding to the person they perceived themselves to be, but also able to target, exploit and reinforce their negative self-beliefs and weaknesses (theme characteristic 3.2 *Voices can confirm negative self-beliefs*):

"They (the voices) seem to know my deepest, darkest secrets...one of my voices will verbalise what I'm trying to keep secret... but I'm afraid they'll alter my behaviour, my voices." (Participant 18, Female, CMHT)

Participants also reflected on other negative beliefs about themselves. This included negative beliefs about the world and the future, focusing on ill health. A further sub theme for some participants included reflections that the experience of psychosis had reinforced negative beliefs about the self, feeling that work or relationships were impossible to achieve (theme characteristic 3.3 *Psychosis can reinforce negative beliefs about others*):

"Everything to do with my childhood has made me who I am today...not being able to trust people, that might be because I couldn't leave the house for my mum literally robbing every single thing I owned... I was always paranoid... it (psychosis)

makes me feel like I've already peaked...it makes me feel like I can't have a proper relationship or hold down a decent job." (Participant 13, Male, EIS)

Conversely, some participants reflected on a positive relationship with their voices, such that symptoms acted to reinforce positive self-beliefs. Positive impacts ranged from beliefs that talking with their voices was generally enjoyable or supportive, to the specific benefit that was placed on the content of the dialogue that they heard (theme characteristic 3.4 *Positive Self Beliefs and psychotic experiences interact (in both directions)*):

" I still think I'm a good person... [the voice] it makes me feel happier... It tells me that everything is going to be fine, and I'm doing okay." (Participant 9, EIS, Male)

Across these interviews, a number of participants reflected on positive aspects of their psychotic experiences, their positive beliefs about themselves, and for what they perceived as a potential benefit for their future and the future of others (Theme characteristic 3.4 *Positive Self Beliefs and psychotic experiences interact (in both directions)*):

"I believe I am gifted and I'm here for a reason...I just did a few dodgy things in the past but I believe I'm good overall.... I believe, if I am telepathic, in the future I might need that gift to let people know things." (Participant 20, Male, CMHT)

Major Theme Four: Core beliefs, images and their influence on symptoms

The fourth major theme consisted of participants reflecting on the relationship between beliefs, images and association with psychotic experiences. The range of

beliefs about images and the nature of imagery varied. Some participants did not report any imagery when asked, while others described a variety from pleasant, supportive images of family, friends and others to negative intrusive mental images. A number of participants described beliefs about images and flashbacks, some associated with voices.

Participants reported various experiences of their beliefs about their perceived ability or inability to be able to control their images. For a small number, they described using their imagination to conjure images of people they knew, especially when hearing voices. It was not clear if this was to lessen the negative impact, to try and promote a positive impact or something that seemed to happen naturally. Other participants found it difficult to exert any control over mental images, and found them intrusive, unwelcome and reinforcing negative beliefs about the self, such as being useless and weak (theme characteristic 4.1 *Negative beliefs about self/others, influence voices and images*):

"I'm fairly useless, weak....I used to self-harm..used to cut myself to relieve frustration and anger and I wound up with times where I would just get images of that over and over again and I can't stop thinking about it." (Participant 4, Male, EIS)

Thus, it could be hypothesised that an ability to exert some level of mental control over images, may be a protective factor for reducing their negative impact or for allowing them to generate more positive images.

Some participants also described negative beliefs about the self, such as "I am vulnerable" were exacerbated by their voice hearing experiences and they attempted to visualise the voice, to put a face to it to help them see who they were hearing in order to reduce distress (theme characteristic 4.1 *Negative beliefs about self/others,*

influence voices and images). The participant in the next quote described a link between negative beliefs about the self, and images which were associated with a sense of perceived control which was linked to a reduction in distress:

“Well negative ones, I am vulnerable.... They’re just trying to stress me out, the voices....when I’m hearing the voice I put a...a face to it. So it makes it all the more real to me because I visualised somebody that I know, maybe not know well but just know them...one of my friends is helpful and kind.” (Participant 18, Female, EIS)

Individuals have differing ways of making sense of their psychotic experiences. The person with psychosis quoted below had self-awareness of their negative beliefs about others (theme characteristic 4.1 *Negative beliefs about self/others, influence voices and images*). When they experienced negative auditory hallucinations, they tried to understand the negative voices they heard by imagining images of people (e.g. a girl and a boy):

“I started thinking really badly of others...Like, every time I hear the voice, there is a picture in my head...um, it just depends, like, what's going on, but like, I can just, like, envision, like different things. Like if I have got the two voices in my head, I've got like an outlining of a girl and a boy arguing.” (Participant 19, Female, EIS)

For the above participant, they reported a negative-other belief “others are bad”, which was associated with a negative content auditory hallucinatory experience and intrusive visual imagery of two people arguing (possibly reflecting the negative voice content, and the negative-other belief).

A number of the participants reflected on their negative beliefs about others and paranoia being reflected in intrusive mental images. For some participants, this

included negative beliefs about the self being vulnerable. This could include an image of the self being hurt and/or this being carried out by people the participant knew (theme characteristic 4.2 *Negative-other beliefs and flashforward persecutory paranoia*):

"I feel vulnerable to people attacking me...I've had images of being stabbed, ermm, being decapitated, and it's been friend's faces which have done it."
(Participant 16, Male, EIS).

Despite a number of participants reporting images as in the above examples, others did not report any instances and some struggled to give any examples. For example:

"[Images]... not that I can think of. I can't remember any. Maybe, I don't know." (Participant 14, Male, EIS).

Discussion

This study is the first qualitative report specifically examining core beliefs and schemas in psychosis. Twenty patients with hallucinations and/or delusions were interviewed. Their accounts were varied and rich, outlining numerous ways that core beliefs and psychotic symptoms and imagery were inter-related. The study identified the following themes regarding core beliefs and psychosis including: i) the nature of core beliefs, ii) the causes and development of core beliefs, iii) the synergistic relationship between core beliefs and psychotic symptoms, and iv) core beliefs associated with images and their influence on symptoms. The characteristics reported regarding the nature and quality of core beliefs are similar to those within the wider

cognitive therapy literature, such as the longstanding nature and permanency of core beliefs (Kesting & Lincoln, 2013; Riso, Du Toit, Stein, & Young, 2007).

The content of core beliefs reported in people with psychosis was also wide ranging. The study reveals a greater emphasis on the relationship between core beliefs and interpersonal relationships, with specific first hand examples of individuals experiences, which add a richness to the topic. This included familial relationships, relationships from education and work, and the relationships developed with psychotic experiences themselves such as auditory hallucinations (Thomas et al. 2014; Hayward et al 2011). The cognitive therapy literature highlights early experiences in the past influencing core beliefs and schemas (Beck, 1995; Young et al. 2003). The findings lend broad support to past life experiences influencing core beliefs, in terms of development and maintenance but also how events from the present day also reinforce such beliefs. This is because core beliefs would appear to influence the anticipation of future events, confirming or disconfirming such experiences (for example, a negative-other belief could result in someone having a filter where what they anticipate is a person being unkind or harsh to them).

Significant life events associated with core beliefs, such as trauma were also reported. Trauma is a risk factor in the development of psychosis, with the greater number of traumas, the higher risk of developing psychosis (Varese et al. 2012). A potential link with negative interpersonal relationships was highlighted, supported by a recent large quantitative study examining bullying and psychosis (Catone et al. 2015). These life experiences were described by some participants as images.

Imagery has previously been highlighted in CBT approaches as having close links with core beliefs. Our finding of imagery being linked with beliefs and reported

by a number of individuals with psychosis is in line with other studies (Morrison et al. 2002; Schulze et al. 2013). Feared anticipated “flash-forward” images (Holmes, Crane, Fennell, & Williams, 2007) were reported in relation to persecutory delusions.

In this study, a clear theme which emerged from the interviews was the importance of interpersonal relationships in the development and maintenance of schema. In relation to the Beckian and Young definitions of schema, these findings lend further support to the role for schema activation in triggering other cognitive processes and maintaining symptoms. The qualitative study findings offer some support for past experience and relationships influence the development of schema. This would be an interesting issue to examine further in relation to positive and negative schema. While the YSQ and Young Parenting Inventory includes a number of relational items, further information on other important interpersonal relationships could be measured. For example, a measure such as the Significant Others Scale (SOS; Power, Champion & Aris, 1988) could be utilised to further explore in greater detail the relationships between interpersonal relationships, either positive or more negative and the triggering of specific schema. It could be that schema have some sort of mediating role in the effect of relationships, schema and psychotic symptoms and so would be of interest to those delivering family interventions to reduce expressed emotion (Berry & Lobban, 2015). Across the definitions of schema and models (linear or multi-level) which argue for a role for schema, each of these has the common point that they argue for schema activation leading to other cognitive processes being triggered leading to symptoms. The theme regarding the synergistic relationships between core beliefs and symptoms also supports these proposed understandings of schema.

Schema and Belief Implications

The results of this study support quantitative studies which have examined core beliefs in psychosis, and extend these by adding further detail to the nature of interpersonal and relational aspects of core beliefs. It also gives a greater emphasis as to how time should be considered with the assessment of core beliefs, in terms of past influence on beliefs, the present and the future. Trauma and other life events are also reinforced in relation to core beliefs, and these might predict engagement with services and within treatment. In terms of existing psychological models, it would suggest a more detailed assessment of core beliefs in forming the basis of individualised psychological formulations and that core beliefs may have a more significant role in psychotic symptoms. The study gives further examples of how interpersonal relationships are important in the development of core beliefs and schema. Existing schema measures might improve by allowing specific interpersonal relationships to be reported (similar to Significant Others Scale; Power, Champion & Aris, 1988). Related to significant others, can be memories and images of early experiences. For some, although not all participants, imagery was also highlighted, supporting earlier work indicating high prevalence for intrusive mental images in psychosis (Morrison et al. 2002; Schulze et al. 2013). Positive mental images, not just negative ones were identified, in line with other emerging work in this area (Laing et al. 2015).

Clinical Implications

Identified themes highlight that core beliefs and schemas are long-lasting and are related to the past, present and anticipated future. Traditional CBT approaches would suggest using behavioural experiments to lessen the frequency or meaning or

negative images and, where appropriate, to test beliefs that imagining something does not mean it is true.

Two case studies using the “two chair method” from experiential therapy were described by Chadwick (2003) and expanded on in Chadwick (2006). The purpose of the adapted approach was to elaborate a positive self schema with an emotional quality to create a new model of the self. In the first chair, negative schema are summarised and the second chair is used to draw out positive schema. A further aim is to promote a Rogerian acceptance of both positive and negative schema, not getting rid of negative schema, but accepting as part of experience of self.

If therapeutic work with core beliefs is being considered, then detailed assessment of the functional role of core beliefs and images should be made before intervening. While some participants reported a negative experience and impact of beliefs, others found the beliefs comforting and beneficial.

Imagery has been proposed to be a maintaining factor for psychotic symptoms, including delusions (Freeman, 2016; Schulze et al., 2013) and hallucinations (Ison et al. 2014). Imagery has long been seen as route to the assessment of experiences which develop or reinforce core beliefs (Stopa, 2009; Hackmann et al. 2011). Imagery rescripting is a key technique to work with specific beliefs (early maladaptive schemas and schema modes) in personality disorders and post traumatic stress disorder (Arntz et al. 2013). It is possible that an imagery focused CBT in psychosis approach might help reduce specific intrusive images reported but also have an indirect impact on associated core beliefs and distress (Taylor, Bee, Kelly & Haddock, 2018). Positive images also offer an opportunity to consider goals, aspirations, hopes for the future for service users which fit well with

previous work on what recovery means to service users and patients (Pitt et al. 2007). A pilot trial used a CBT approach targeting negative self beliefs, demonstrating a small reduction in negative self-beliefs and moderate paranoia reduction (Freeman et al. 2014). It is also possible that future work might consider enhancing positive imagery (Laing, Morland & Fornells-Ambrojo, 2016) and developing positive self-beliefs. However, for clients with greater severity of negative symptoms, this work may take longer in helping support them to strengthen positive self beliefs.

Limitations and Future Directions

Participants were a self selecting sample, willing to be interviewed. Thus, they were more cooperative and more likely to take part. Participants reflected certain flexibility in their reports of core beliefs and their psychotic experiences, rather than a conventional psychological or medical explanation. Interviews focused on core beliefs and schemas and there is a chance that images discussed may have been visual hallucinations. They may also have been difficulties with memory and remembering, leading to under reporting of experiences. Individuals with psychosis are a heterogeneous group and further work is needed. There are common issues inherent in using a qualitative design, particularly in regard to the generalisability of the results. A stratified sampling approach would have been more challenging to implement and almost all of those approached agreed and consented to be interviewed. However, participants did vary in whether they were first episode (EIS) or a longer lasting presentation of psychotic symptoms (CMHT). Further qualitative studies focusing on this area may provide further supporting evidence for the findings or new themes that emerge from other individual's experience of core beliefs and their psychotic experiences. For example, it would be of interest to explore if different types of therapy influence the role of beliefs reported by service users e.g. if undertaking

metacognitive therapy (MCT), would this influence the reported role of thinking styles being more prominent? Future studies might also evaluate in greater complexity the role of negative life experiences in psychological processes.

Conclusion

This study examined core beliefs and psychotic symptoms. The themes identified that core beliefs have a major relationship with psychotic symptoms, potentially maintaining symptoms. Any psychological treatment seeking to target these maintaining beliefs requires careful assessment before any change is attempted. Working with negative beliefs to reduce distress and enhance positive beliefs has potential to refine work in psychological treatments for psychosis.

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Example Interview questions and example probes

What does belief mean to you?

What does core belief mean to you?

Can you tell me more about?

You were just saying ‘: : : : : : :’. What did you think about that?

How did you feel about that?

Can you tell me a little bit more about that?

What did that mean for you?

The following areas were also explored with similar prompts:

Can you tell me about your first experience of core belief influencing your voices and/or paranoia?

Can you tell me how things developed from then?

How do you think core beliefs develop in other people?

“Most people, when they are upset have upsetting things going through their minds. Sometimes they are in the form of thoughts or words, and sometimes in the form of pictures or feelings in the body.” Does that happen for you? Do you sometimes get picture images or words?” (Hackmann et al. 2011)