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Doctoral Thesis

Concept of the Self/Others and Suicidality in People with Experiences of Psychosis

Wren Little

Trainee Clinical Psychologist

Doctorate in Clinical Psychology

Division of Health Research, Lancaster University

Word count

Thesis Section	Main Text	Appendices (including tables, figures, and references)	Total
Thesis Abstract	276	-	276
Literature Review	7987	10243	18230
Research Paper	7952	4043	11995
Critical Appraisal	3999	1706	5705
Ethics	4035	3864	7899
Total	24249	19856	44105

Thesis Abstract

People with experiences of psychosis (PEP) experience highly elevated rates of suicide. Suicidality research in PEP has largely focused on demographic and clinical factors and there is a relative dearth of research exploring psychological processes. The purpose of this thesis was to explore the relationship between positive and negative concepts of self/others and suicidality in people with experiences of psychosis.

Section one reports a quantitative systematic literature review exploring the relationship between positive self-concepts (PSCs) and suicidality in PEP. Four databases were searched and 14 studies met inclusion requirements. Support was found for cross-sectional relationships between self-esteem and suicidal ideation (SI) and attempts (SA), and self-appraisals and SI. Few studies explored concepts of self-warmth and findings were mixed. In addition, the review highlighted that PSCs are underexplored in PEP and there is a lack of longitudinal research. The review concluded that there is tentative support for a relationship between PSCs and suicidality in PEP, however, further research is required.

Section two reports on an empirical study examining the relationship between negative self- and other-appraisals and SI/SA. Hypotheses were underpinned by transdiagnostic models of suicide such as the Integrated Motivational-Volitional Model (IMV). Participants ($N = 124$) completed an online survey. The findings align with the main principles of the IMV and suggest the importance of negative appraisals of the self as a particular psychological mechanism involved in suicidality in PEP. However, further research including longitudinal designs is needed to confirm conclusions.

Section three includes a critical appraisal that reflects on the main findings and critically evaluates key decisions made during the research process. Considerations for future research and clinical practice, and personal reflections are discussed.

Declaration

This thesis documents research undertaken for the Doctorate in Clinical Psychology at the Division for Health Research, Lancaster University. The work presented here is the author's own, except where due reference is made. The work has not been submitted for the award of a higher degree elsewhere.

Name: Wren Little

Date: 05.07.2024

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The Relationship Between Positive Self-Concept and Suicidality in People who Experience Psychosis: A Systematic Review

Wren Little

Doctorate in Clinical Psychology

Division of Health Research, Lancaster University

All correspondence should be sent to:

Wren Little

Doctorate in Clinical Psychology

Health Innovation One

Sir John Fisher Drive

Lancaster University

Lancaster

LA1 4AT

w.little1@lancaster.ac.uk

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Abstract

Objective: Suicide is a leading cause of premature death in people experiencing psychosis (PEP). In the general population, interest has grown into the protective relationship between positive constructs and suicide (i.e., positive suicidology), including the role of self-related concepts (e.g., self-esteem, positive self-appraisals, and self-compassion). However, no existing reviews have explored the relationship between positive self-concepts and suicide in PEP.

Method: A pre-registered systematic search (PROPSERO CRD42024521924) of four databases (PsycINFO, Web of Science, MEDLINE, CINAHL) was conducted. The search strategy incorporated terms relating to psychosis and/or psychosis-like experiences, suicidal experiences, and positive self-concepts.

Results: Fourteen papers met the review criteria. Significant associations were found between self-esteem, positive self-appraisals, and self-warmth concepts and reduced suicidal ideation in people experiencing psychosis. However, research into self-appraisals and self-warmth concepts and suicidality was relatively limited, particularly their relationship with suicide attempts.

Conclusions: Viewed within the context of positive suicidology and risk factor models such as the Integrated Motivational-Volitional model, the exploration and improvement of positive self-concepts may have important implications for the assessment and treatment of suicidality in PEP. However, further research exploring positive self-concepts and the wider field of positive suicidology in this population is needed.

Keywords: psychosis; suicide; self-esteem; self-appraisal; schema; self-warmth; self-compassion

Practitioner Points

- The findings provide tentative support for the role of therapeutic approaches which specifically aim to improve self-esteem and positive-self appraisals as a means to reduce suicidality in people experiencing psychosis.
- Quantitative and qualitative assessments of positive self-concepts may be beneficial as part of a holistic assessment of risk in people experiencing psychosis.

The relationship between positive self-concept and suicidality in people who experience psychosis: A systematic review

Suicide is a major public health problem worldwide with more than 700,000 individuals dying by suicide every year (World Health Organization, 2021). Suicide is particularly prevalent amongst people who experience psychosis (PEP), wherein lifetime risk of suicide death is estimated to be 5.6% (Hor & Taylor, 2010). Suicide risk is higher amongst those diagnosed with psychotic disorders than those with other psychiatric diagnoses (e.g., depressive disorders) and substance-related disorders (Song et al., 2020). In addition to completed suicides, meta-analyses have shown elevated lifetime prevalence of suicidal ideation (SI), plans, and suicide attempts (SA) in those who receive a diagnosis of schizophrenia (Bai et al., 2021; Lu et al., 2019).

Risk of suicide is particularly high at the onset of psychosis (Fleischhacker et al., 2014; Palmer et al., 2005; Pelizza et al., 2019). The annual rate of suicide during the first 5 years following diagnosis has been shown to be three times greater than after 10 to 16 years (Heilä et al., 2005; Nielssen and Large, 2009). However, increased risk of suicide death persists across the lifespan (Coentre, 2017; Ran et al., 2005), with significantly increased risk remaining more than a decade after psychosis onset (Dutta et al., 2010). Beyond diagnosis, the increased risk of suicidality in those with psychosis-like experiences (PLEs) has been repeatedly documented (Bromet et al., 2017; Connell et al., 2016; De Loore et al., 2011; Martin et al., 2015; Zalpuri & Rothschild, 2016). Hallucinations are associated with increased odds of SI and SA (Yates et al., 2018), with approximately 45% of 16-49 year olds who report hallucinations also reporting SI.

Despite prolific research detailing the prevalence of suicide in this population, exploration of the positive psychological concepts which protect against the development of suicidality has been neglected. Not all PEP will experience suicidal ideation, behaviours, or

attempts; suggesting the presence of preventative or protective factors. Such factors seem important for both predicting risk of suicide and for the development of interventions to reduce suicide risk (Borowsky et al., 2001).

Risk Factors and Models

Researchers have attempted to identify risk factors for suicide at an individual, relational, community, and societal level (CDC, 2021). Leading models utilise a transdiagnostic approach to predict the risk of suicide. For example, the Escape Theory of Suicide states that suicide is an attempt to escape when there is vast discrepancy between an individual's perception of themselves/their lives and the life they wish to have (Baumeister, 1990). While Joiner's Interpersonal-Psychological Theory of Suicidal Behaviour (2005) posits that the combination of a desire to complete suicide (related to low sense of belonging and perceived burdensomeness) and capability to overcome self-preservation are necessary for a person to die by suicide. More recently, the Integrated Motivational Volitional model (IMV) aimed to synthesise existing theories into a single, comprehensive model of suicidality (O'Connor, 2011; O'Connor & Kirtley, 2018). Central to the IMV model is the perception of defeat and entrapment, wherein an individual feels trapped and unable to escape their situation, making SI more likely. The IMV further suggests the existence of distinct risk factors for both SI (termed 'motivational moderators') and SA ('volitional moderators'). This fits with psychosis research, where the correlates of SA do not necessarily correlate with SI (Montross et al. 2008; Tarrier et al. 2004; Yan et al. 2013).

Transdiagnostic models are useful for understanding risk of suicide generally, and PEP share risk factors with non-psychiatric populations, such as sociodemographic predictors (e.g., younger age), clinical predictors (e.g., depression), hopelessness, and negative life events (Hawton et al., 2005; Bolton et al., 2007; Pluck et al., 2013). However, there are

unique risk factors associated with suicide for PEP. Some studies have suggested that specific 'manic' symptoms, such as grandiose delusions and reckless activity, may be important predictors of suicidality (Dutta et al., 2011), and suicide death is shown to be more likely during an active episode of psychosis (Hor & Taylor, 2010). Indeed, a longitudinal study found that 'positive symptoms' (i.e., hallucinations and delusions) correlate with increased risk of suicide, whereas 'negative symptoms' (including depressed mood) appear to decrease risk (Huang et al., 2017). Furthermore, school achievement positively correlates with suicide risk in PEP, whereas the opposite relationship is true in the general population (Alaräisänen et al., 2006). Therefore, it is important that suicide research takes into account the varied experience of PEP.

Regardless of the extensive research exploring risk factors for suicide (both in PEP and more generally), experts state that we are no better than chance at predicting suicide (O'Connor, 2021). Even when multiple risk factors are combined, their ability to predict future suicide is low (Powell et al., 2000). Whilst research has identified a strong association between, for example, hopelessness and suicide (Berardelli et al., 2019), not all individuals who feel hopeless are suicidal, indicating the existence of protective factors (i.e., factors that buffer the risk of suicide). Less attention has been paid to identifying and utilising protective factors in suicide prevention and treatment, and it has been suggested that the relative dearth of research into the protective and moderating factors has led to an incomplete understanding of suicide risk (Kelliher-Rabon et al., 2018; Seligman & Csikszentmihalyi, 2000).

Positive Suicidology

Although limited, the concept of protective factors has been explored within clinical practice and research for decades. The 'internal struggle hypothesis' (Kovacs & Beck, 1977) recognised that suicidal individuals often experience conflicts wherein they simultaneously

wish to live and die. The term ‘reasons for living’ (Linehan et al., 1983) was subsequently coined and attempted to discover which factors protected those experiencing SI from engaging in SA. However, this included factors such as religious beliefs that are based in shame/social conformity (i.e., that suicide is immoral and/or socially unacceptable) and fear (i.e., unable to enter heaven). In comparison, ‘positive suicidology’ takes an explicitly strengths-based approach, combining suicide prevention and treatment with aspects of positive psychology (Hirsch et al., 2018; Wingate et al., 2006).

Research has also conflated the *absence* of risk factors (e.g., low levels of self-criticism) with protective factors. It is important, therefore, to distinguish between this and the presence of a positive psychological construct (e.g., self-compassion). Whilst counterintuitive, these experiences are not mutually exclusive. For example, an individual can experience both negative and positive affect (e.g., experiencing sadness and hope, optimism, or happiness). Indeed, it is not always the presence of negative emotions or cognitions that contributes to suicide risk. Rather, the absence of positive emotions or cognitions also play a role in determining an individual’s suicidality.

More recently, interest into the protective relationship between positive psychological constructs and suicide in the general population has grown. Numerous positive experiences such as gratitude, positive affect, self-compassion, self-forgiveness, positive self-appraisals, optimism, hope, meaning in life, emotional intelligence, and social support have been shown to directly and indirectly reduce suicide risk (Cha & Nock, 2009; Cleare et al., 2019; Heisel et al., 2016; Hirsch et al., 2009; Johnson et al., 2010a; Kaniuka et al., 2021; Kleiman et al., 2014; Ropaj, 2023; Teismann et al., 2019; Wingate et al., 2006). Surprisingly, despite being found to be significant in the general population (Wingate et al., 2007) and the high prevalence of suicide in PEP, exploration of positive suicidology in this population has been neglected. In arguably the most prominent book on the topic, there are few references to

psychosis (Hirsch et al., 2018). Recent reviews have explored the relationship between suicide and personality traits (Canal-Rivero et al., 2021) and perceived social support, reasons for living, religious/spiritual beliefs, and perceived personal skills (Harris et al., 2020) in people diagnosed with schizophrenia. However, initial scoping searches returned no results for hope, optimism, or gratitude and suicide in psychosis, demonstrating the dearth of positive suicidology research in this population. As risk factors sometimes differ between people who do and do not experience psychosis, it is possible that PEP experience unique relationships between suicide risk and positive psychological concepts respective to the general population.

Positive Self-concepts

Self-related concepts (i.e., positive beliefs about and feelings toward the self) have been identified within the positive suicidology framework as core protective factors for suicidality in the general population. For example, a systematic review demonstrated that self-compassion and self-forgiveness were repeatedly and significantly associated with lower levels of self-harm and SI (Cleare et al., 2019). Self-esteem has been consistently associated with suicidality, with a meta-analysis of 120 articles demonstrating a negative relationship between self-esteem and SI/SA (Buecker et al., 2023). Indeed, a systematic review of randomised controlled trials demonstrated a small effect for self-esteem-related interventions on SI (Dat et al., 2022), identifying this as a potential treatment opportunity. Additionally, the Schematic Appraisals Model of Suicide (Johnson et al., 2008) suggests that positive self-appraisals (i.e., the perceived ability to cope with difficult situations and emotions) buffer against the development of SI. Positive self-appraisals have been shown to moderate the relationship between known risk factors such as stressful life events (Johnson et al., 2010a) and hopelessness (Johnson et al., 2010b) and suicidality. However, no existing reviews have explored the relationship between positive self-concepts (PSCs) and suicide in PEP.

The exploration of positive suicidology and, particularly, the role of PSCs has important implications for clinical psychology in terms of suicide prevention and treatment. Studies demonstrating the existence of protective factors shift the focus from “which factors are associated with suicide?” to “what promotes recovery?” enabling the development of effective interventions to reduce suicidality.

Given the prevalent suicidality in PEP and the lack of evidence around the role of PSCs, this systematic review will synthesise a cross-disciplinary body of literature to explore the relationship between PSCs and suicidality in PEP as well as how PSCs have been examined in this population. The review aims to identify commonalities, contradictions, and limitations in the current evidence-base, and to highlight important areas for development in future practice and research.

Method

Search Strategy

Searches were conducted on 23rd February 2024 across four databases: PsycINFO, Web of Science, MEDLINE, and CINAHL. These searches were not restrictive of publication date or location. The search strategy was developed based on terms found in relevant literature at the scoping stage, with input from an academic librarian. The search strategy incorporated terms relating to psychosis and/or PLEs, suicidal experiences, and PSCs, combined using the Boolean 'AND'.

- S1: psychosis OR psychoses OR psychotic OR "thought disorder" OR schizo* OR halluc* OR paran* or delus* OR "voice hear*" OR "voice-hear*" OR "hearing voice*" OR "at-risk mental state"
- S2: suicid*
- S3: "self appraisal*" OR self-appraisal* OR "self image*" OR self-image OR "self esteem" OR "self-esteem" OR "self efficacy" OR self-efficacy OR schema OR "self compassion" OR self-compassion OR "self forgiveness" OR "self-forgiveness" OR "self kindness" OR self-kindness OR "self appreciat*" OR "self-appreciation" OR "self warmth" OR "self-warmth"
- S4: S1 AND S2 AND S3

Eligibility Criteria

Studies were included if they: (1) were published in English language, (2) included a quantitative design, (3) reported findings on a population which experiences psychosis and/or PLEs (where studies use a mixed group, papers were only included if the population experiencing psychosis is reported separately), (4) used one or more measures of a positive self-concept, (5) included a measure of suicide, and (6) reported on the strength of the relationship between a positive self-concept and suicide. Studies were excluded if they were

not peer-reviewed empirical research and included qualitative research, case studies, review papers, conference abstracts, dissertations or book chapters.

Study Selection

Screening was carried out in two stages (see Figure 1). In stage one, duplicates were removed, and titles and abstracts were screened. At stage two, full-text papers were screened using the pre-defined inclusion and exclusion criteria. A second researcher (MS) screened a proportion of articles to check decisions using the same inclusion/exclusion criteria, blinded to the initial decision. Discrepancies were discussed and clarified with the research team. Where consensus among team members was not reached, the final decision was made by the author. Hand searches of the reference lists of included articles were also conducted by the author. Zotero software was used for reference management and screening. The reporting of this review was guided by the standards of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement (Moher et al., 2009) and registered on Prospero (ID: CRD42024521924).

[insert Figure 1 here]

Data Extraction

The following data were extracted from included papers: (1) author, year, country, (2) design, (3) sample information, including: number of participants, age range, diagnosis status, how psychosis/PLE was defined, (4) positive self-concept measure, (5) suicide measure, and (6) analysis and findings. Data were recorded in Excel and organised into a table for ease of comparison and critical assessment.

Quality Assessment

Critical appraisal of included papers was conducted using the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (SQAC; Kmet et al., 2004). A second researcher (MS) assessed a proportion of articles

blinded to the initial results and results were compared. Discrepancies were discussed and clarified with the research team. Where consensus among team members was not reached, the final decision was made by the author.

Synthesis of Results

Data were synthesised using narrative synthesis, following steps outlined in the Guidance on the Conduct of Narrative Synthesis in Systematic Reviews from the ESRC Methods Programme (Popay et al., 2006). Firstly, findings were clustered into smaller groups of conceptually similar self-concepts. Tabulation was used to develop an initial description of the studies and to identify patterns across studies regarding the association between PSCs and suicide variables, considering current models of suicide (i.e., exploring the difference between ideation versus behaviour). Moderating variables and sub-group analyses within studies and comparisons of similarities/differences across included studies were subsequently considered. Descriptions were revised to take into account the quality assessment.

Results

Overview

[insert Table 1-1]

Study Geographics and Design

Geographics of the included studies (*N*=14) ranged from the United Kingdom (*n*=6), to Taiwan (*n*=3), South Korea (*n*=2), the United States (*n*=1), Tunisia (*n*=1), and Switzerland (*n*=1). Research designs also varied, with 12 studies having included cross-sectional designs and two studies included longitudinal designs (follow-up over 12 and 18-months). Details are presented in Table 1-1.

Risk of Bias Assessment

[insert Table 1-2]

Quality appraisal scores ranged from 64.3%-100%, with a median score of 90.9% which suggests overall high quality of research. The SQAC does not propose a standardised inclusion threshold, however, suggest that scores of >75% would indicate a conservative cut-off and 55% a relatively liberal cut-off and decisions depend on the resource constraints of the project. Of the 14 included studies, 11 scored >75% with no studies having scored below 55%. As such, no papers were excluded due to low quality. Studies generally dropped points due to small samples or insufficient information to judge the appropriateness of the sample size, incomplete control of confounding variables, and incomplete description of analytic methods. Full scores are represented in Table 1-2.

Participants

Sample sizes ranged from 21 to 309 participants, for a total of 2,306 individuals. Age of participants ranged from 13 to 70 years. One study (Johnson et al., 2010b) did not report

the age range, however, the mean age of participants was 42.3 years. Studies mainly used clinical samples (12/14, 85.7%) with diagnoses of non-affective psychosis (schizophrenia spectrum disorders such as schizophrenia, schizoaffective disorder, schizophreniform disorder, brief psychotic disorder, psychosis not otherwise specified, or delusional disorder). Diagnoses were confirmed using the DSM-5 (N=3), DSM-4 (N=4), or ICD-10 (N=2). In two studies (Collett et al., 2016; Peters et al., 2012) diagnosis confirmation was not reported. However, these focused on diagnosed samples experiencing persecutory delusions and voice-hearing, respectively. Two studies used high or ultra-high-risk (UHR) samples, confirmed using CAARMS-defined criteria, adult or children-youth version of the Schizophrenia Proneness Interview, structured Interview for Prodromal Syndromes v3, and/or Hypomania Checklist. Despite the search utilising symptom terms, no studies conducted with individuals experiencing PLEs met inclusion criteria.

Measures

Suicidality was measured in various ways. Nine studies reported the relationship with SI, four reported SA, and five used a combined measure of ideation and behaviour/attempts. PSCs were mainly assessed using questionnaires, with one study using clinical interview (Tarrier, 2004). Findings were grouped into three categories of self-esteem, self-appraisal, and self-warmth. Outcomes are presented in Tables 1-3 to 1-5.

Self-esteem and Suicide

Self-esteem has been widely researched in the psychological literature. Indeed, a search of PsycINFO in March 2024 yielded 49,234 results published since the year 1789, with 28,476 (57.8%) of those dated within the last 20 years. Self-esteem has garnered numerous definitions since its conception. Brown et al. (2001) outline three uses of the term “self-esteem”: (1) global self-esteem as a trait, referring to how people generally feel about

themselves, (2) cognitive evaluations of skills and attributes, and (3) momentary affective self-esteem, in relation to feelings of worth and pride. Extant definitions and theories of self-esteem attempt to utilise both evaluative and affective elements, viewing it as both a cognitive appraisal of one's skills, value, and ability and an emotional reaction towards oneself (Hewitt, 2002; Murphy et al., 2005; Wang & Ollendick, 2001).

The majority of identified studies (11/14, 78.6%) measured self-esteem, demonstrating its relative proliferation compared to other PSCs. Of these, seven studies reported the relationship with SI, three with SA, and three a combined measure. All cross-sectional studies reported significant relationships between self-esteem and SI/SA. However, of the two longitudinal studies, one reported mixed results and one was non-significant.

[insert Table 1-3]

Ideation

Studies reported four correlational analyses demonstrating the relationship between self-esteem and SI. One reported a strong (r=-.77, p<.001) correlation, two reported moderate correlations (r = -.43, p<.01; r_s = .42, p<.01), and one reported a weak correlation (r = -.31, p<.01). There was a mix of negative and positive correlations as, whilst all used the RSES, studies differed as to whether high scores represented high or low self-esteem. Each study reported how the RSES was scored in their methods section. Variability in scoring this measure may lead to confusion and/or inconsistency in findings. In one study (Collett et al., 2016), the authors stated that a high RSES score demonstrated lower self-esteem and reported a strong, negative correlation with SI. This would suggest that lower self-esteem was strongly associated with a reduction in SI, conflicting other findings. However, they repeatedly state that low self-esteem is associated with SI. As such, the assumption has been made that either the direction of the association or the order of scoring of the RSES were reported incorrectly.

On the basis of probability, it seemed more likely to be that higher self-esteem relates to lower SI. Thus, correlational analyses repeatedly suggest an association between high self-esteem and reduced SI in PEP, however, the strength of the relationship varies greatly across studies.

A possible difference for the strength of the relationship is the measure used for SI. The three studies reporting a moderate to strong correlation use the BSS (Beck & Steer, 1991), which measures the frequency, duration, and attitude towards suicidal thoughts. Although the final study (Xu et al., 2016) states to measure SI, they use the HRSD (Hamilton, 1960), where the highest possible score is defined as 'attempts at suicide'. Though linked, SI and SA are distinct concepts with unique risk and protective factors (O'Connor, 2021). It is therefore possible that self-esteem is moderately-to-strongly linked with SI but not SA. Another difference is that Xu et al.'s study was conducted with a UHR population, whilst others used clinical samples. Self-esteem may therefore be more strongly associated with a reduction in SI in those meeting diagnostic criteria for psychosis.

A multivariate hierarchical logistic regression showed that self-esteem negatively predicts SI, after controlling for sociodemographic and clinical factors (βstdxy= -0.24, OR 0.97 (95% CI 0.94 to 0.99); $p<.05$). Individuals with high self-esteem were 3% less likely to demonstrate current SI, with the true population effect between 1% and 6%. Despite being statistically significant, this does not suggest a large effect of self-esteem on SI. However, the study controlled for history of SA and hospitalisation within the previous 6 months. Individuals who had previously attempted suicide were six times more likely to exhibit SI and those recently hospitalised were almost three times as likely to have current SI. The significant result of self-esteem therefore shows that improved self-esteem slightly reduces the odds of SI even in those who have previous SA and are recently, acutely unwell.

Two studies using group comparisons both showed differences in self-esteem scores between ideators and non-ideators, at high levels of statistical significance. While there was a significant relationship between self-esteem and SI in Fialko et al.'s (2006) study, post-hoc tests identified a non-significant difference in self-esteem between those with mild and severe SI. The significance resulted from high self-esteem in non-ideators compared to the other two groups; suggesting that self-esteem may be associated with the presence, but not severity, of SI. These results could additionally explain the weak and moderate relationships between self-esteem and SI in the correlational analyses, as greater severity of SI on the continuous measures would not necessarily correlate with poorer self-esteem. However, participants were categorised as "severe" if there was desire to act on their SI. As discussed, SI and SA are distinct concepts and an individual may experience strong ideation, however, have no desire to act on this due to separate protective factors.

Only one study (Fekih-Romdhane et al., 2023) used a longitudinal design to explore the relationship between self-esteem and SI. Self-esteem did not significantly predict SI after 6 to 12-months when confounding for other variables (such as psychosis symptom severity and social support). However, none of the cross-sectional analyses reported (e.g., self-esteem at 6 months and SI at 6 months) were found to be significant either, contradicting other research. This study was limited by a high-dropout rate. Only 35 individuals provided complete data, suggesting that the analysis may have been underpowered to detect a statistically significant relationship. Indeed, the partial eta squared values would suggest baseline self-esteem had a medium effect on 6-month SI and a small effect on 12-month SI indicating the possibility of a type II error. Additionally, similar to Xu et al. (2016), this study used a UHR sample and it is possible that there exists a stronger relationship between self-esteem and SI in clinical samples.

There is good evidence to suggest that greater self-esteem is associated with reduced SI in PEP, particularly in those meeting diagnostic criteria. However, as the significant findings all come from cross-sectional studies, it is not possible to infer causality.

Attempts

All three group comparisons demonstrated significantly higher self-esteem in those who had not previously attempted suicide, compared to previous attempters. Yoo et al. (2015) found that individuals with no history of SA demonstrated significantly higher self-esteem (Mean: 26.7, SD: 0.5) than those with a history of SA (Mean: 24.4, SD: 0.9), when controlling for internalised stigma and depressive symptoms, $F = 4.429$, $p = .039$. Only Lien et al. (2018) reported an effect size, which demonstrated a moderate effect, with this study reporting the smallest difference between the mean self-esteem scores of attempters and non-attempters. These studies were conducted in diverse samples across Tunisia, Taiwan, and South Korea, using both clinical and UHR groups, suggesting generalisability of findings and supporting a relationship between self-esteem and SA in those experiencing psychosis-like symptoms. However, as only three existing studies explore the direct relationship between self-esteem and SA in PEP, more research is needed to draw firm conclusions. Again, due to the lack of longitudinal research in this area, it is currently impossible to establish the temporal order of effect as it is possible that previous SA may negatively impact upon a person's self-esteem, rather than self-esteem predicting SA.

Combined

Three of the studies explored self-esteem using a combined measure of SI/SA, reporting mixed results. Two studies appear to use the same sample, with 300 participants with non-affective psychosis recruited from hospitals in Taiwan between February and May 2022. Interestingly, only one of these reported significant findings. Jian et al. (2022) found

that self-esteem significantly predicted suicide risk and moderated the association between self-stigma and suicide risk (β= -.003, p<.001). In the non-significant finding (Chen et al., 2023), additional variables were included in the linear regression model. As the model was sufficiently powered to detect a significant result, it is likely that the inclusion of loneliness and depression (which were both highly statistically significant predictors of suicidality), led to self-esteem no longer directly predicting suicide in this sample. However, despite the lack of a direct relationship, self-esteem was found to significantly moderate the association between depression and suicide risk (β=.074, p<.001). These findings support the role of self-esteem as a protective factor for suicide in PEP, reducing the risk of suicide in those experiencing high levels of depression and self-stigma.

The final study using a combined measure of SI/SA (Tarrier et al., 2006) measured self-esteem and suicidality over time, during a CBT trial in a sample diagnosed with schizophrenia. They report mixed results, with no significant difference in self-esteem between those with high and low suicidality at baseline and 3-months, yet significantly higher self-esteem in those with low suicidality (compared to high suicidality) at the 6-week and 18-month intervals. Suicidality was measured using the HoNOS, dividing participants into dichotomous categories of “no, mild, or minor problem” and “moderate to serious” problem. Those experiencing fleeting thoughts of suicide, frequent ideation, or passive suicidality (e.g., “not taking avoiding action whilst crossing a road”) were classified as ‘low’ suicide risk alongside those without SI, potentially reducing any group differences.

Whilst the findings provide mixed support for a relationship between self-esteem and suicidality, all three studies classify desire to and/or engaging in self-harm as high suicidality. This reduces the construct validity as many who engage in self-harm behaviours do not wish to end their life and do so for reasons such as dealing with distress, self-punishment, and sensation-seeking (Edmondson et al., 2016; Klonsky, 2007; Klonsky, 2011). Additionally,

although longitudinal in design, Tarrier et al.'s (2006) study does not allow exploration of a temporal effect of self-esteem. At each time point, the sample is split into low and high suicidality with the number in each group changing each time (ranging from 3-36 in the high and 192-242 in the low suicidality groups). As the groups are not fixed, it is impossible to tell whether a change in self-esteem at time one affected suicidality at time two.

Self-appraisal

Self-appraisal is conceptualised as the cognitive perceptions an individual holds about themselves and their abilities. Self-appraisal differs from definitions of self-esteem as it does not include the affective components (i.e., feelings of worth) and is not viewed as a trait. Indeed, high self-esteem does not necessarily reflect positive self-appraisals, such as high self-efficacy (Rosenberg, 1985). A person may believe themselves to be effective and competent whilst having low feelings of pride or, alternatively, judge themselves as incompetent yet hold feelings of worth.

Five studies explored the relationship between suicidality and individuals' positive self-appraisals, including measures of positive self-schema, social comparison, positive evaluation of personal attributes, positive evaluation of role performance, and global self-appraisals. All studies were cross-sectional in design and used clinical samples. The majority of studies (4/5, 80%) were conducted in the United Kingdom, with one study taking place in South Korea.

[insert Table 1-4]

Ideation

Most studies (4/5, 80%) reported a significant relationship between positive self-appraisals and SI. Johnson et al. (2010b) explored individuals' self-appraisals using the RAS (Johnson et al., 2010b) and showed a moderate, negative correlation with SI, (r= -.47, p<.01).

Furthermore, self-appraisals were found to moderate the association between hopelessness and SI, both in addition to and when interacting with hopelessness. Therefore, for those with high levels of positive self-appraisals, increased hopelessness led to minimal increases in SI. Additionally, Collet et al., (2016) report a strong, negative correlation between self-comparison and SI *(r*=.67, *p*=.002*),* wherein more positive self-appraisals are associated with less SI. Social comparison was measured using the SCS (Allan and Gilbert, 1995), in which participants rate how they have felt in relation to others during the previous week (e.g., incompetent/competent).

Both studies exploring positive self-schema reported significant findings. An ANOVA comparing positive-self schema scores between those with no (*M*: 11.7, *SD*: 6.3), mild (*M*: 8.3, *SD*: 6.3), and severe (*M*: 6.9, *SD*: 5.6) SI found a statistically strong relationship, whereby individuals with less SI demonstrated more positive self-appraisals, *F*=10.876, *p*<.001 (Fialko et al., 2006). Whilst the authors reported post-hoc tests for the negative-other schema scores, no post-hoc tests of the positive-self scores were reported. Interestingly, the relationship between positive-other schema and SI was found to be non-significant, suggesting a specific effect of self-appraisal, as opposed to generally positive cognitive appraisals. Cui et al. (2019) also found a significant relationship between positive-self schema and recent SI in a single logistic regression and further showed that positive-self schema independently negatively predicts SI when adjusting for childhood trauma (OR 0.897, 95% CI 0.851 to 0.946, *p*<.001). Therefore, individuals with positive-self schemas were 10.3% less likely to have recent SI, with a true population effect between 5.4-14.9%, when controlling for experience of trauma. Positive-self schema had additional indirect effects on SI, partially mediating the association between trauma and SI.

Only one study (Tarrier at al., 2004) reported non-significant findings for the relationship between positive self-appraisals and SI. Those who expressed ‘no desire to

commit suicide' and 'some desire to commit suicide' did not significantly differ in scores for either positive evaluation of personal attributes or role performance. The authors measured SI using the BSS, which was used in two other studies exploring self-appraisals (Collett et al., 2016; Johnson et al., 2010b). Rather than using the total BSS score, participants were separated into dichotomous groups based on two items (i.e., those who answered affirmatively to either 'I have a weak desire to kill myself' or 'I have a moderate to strong desire to kill myself' were classed as 'some desire'). However, this is similar to two further studies (Cui et al., 2019; Fialko et al., 2006) who created groups using the C-SSRS and BDI item 9, respectively. Therefore, the difference in findings is possible yet unlikely to be a result of the suicide measure. To measure self-appraisals, this study used the SESS-sv (Barrowclough et al., 2003; Humphreys et al., 2001) and, as such, was the only one to use a clinician-rated interview rather than self-report questionnaires. Multiple studies have demonstrated that clinician ratings and self-report of symptoms are not in agreement (Corruble et al., 1999; Cuijpers et al., 2010; Domken et al., 1994). Therefore, individuals' self-report of their positive self-appraisals may have differed from clinicians' scores. Significant findings were found for negative self-appraisals, however, it is possible that participants could be reluctant to appraise themselves positively in the presence of a rater due to social desirability related to modesty/humility. Another potential difference is that, whilst other measures focused on individuals' global assessment of their abilities and value (e.g., 'I am talented' on the BCSS and 'I am incompetent/competent' on the SCS), the SESS-sv focuses on different life domains (e.g., occupational, parenting) and traits and characteristics (e.g., attractiveness, intelligence). It may be that, for PEP, one's overall evaluation is more important than perceived efficacy in specific areas. However, as discussed, negative self-appraisals were found to be associated with SI. Therefore, mixed findings exist for the effect of positive self-appraisals and SI.

The findings suggest that positive self-appraisals are generally associated with lower likelihood of SI and mediate the relationship between known risk factors (e.g., hopelessness, childhood trauma) and SI in PEP. Positive self-appraisals may, therefore, be an effective aim of interventions attempting to reduce SI. However, as only a small number of studies have been conducted with some mixed findings, further research is needed. Furthermore, longitudinal and experimental designs (e.g., intervention trials) would be necessary to establish the temporal effect of self-appraisal on SI in this population.

Attempts

One study explored the relationship between positive self-appraisals and SA in PEP (Tarrier et al., 2004), reporting no significant findings. As this was the only study to report a non-significant relationship between self-appraisal and SI, it is currently unclear whether this is due to the study design or whether this demonstrates the existence of distinct protective factors for SI compared to SA. Therefore, further research exploring positive self-appraisals and SA in this population is needed.

Self-warmth

Self-warmth is conceptualised as a process of adopting a supportive attitude towards oneself, including factors such as self-compassion, self-kindness, self-acceptance, self-forgiveness, and self-appreciation**.** Self-warmth is more than simply the absence of self-criticism, rather, it is an active process of being caring and understanding towards oneself regardless of perceived shortcomings, negative evaluations, or difficult circumstances (Neff, 2003b). Whilst being correlated with self-esteem, self-warmth has been shown to be a distinct psychological phenomenon (Neff, 2003a). Indeed, an individual may cognitively appraise themselves as competent and feel high self-esteem following a successful situation, however, find it difficult to forgive themselves for perceived failure.

Only two studies (Collett et al., 2016; Tarrier et al., 2004) contained a measure of self-warmth, exploring self-compassion and self-acceptance respectively. The search returned no results for related concepts of self-kindness, self-forgiveness, or self-appreciation. This was surprising as, within the general population, there is extensive research exploring and demonstrating the significance of a relationship between these concepts and suicide (Cleare et al., 2019; Hirsch et al., 2017; Hirsch et al., 2018; Suh & Jeong, 2021).

[insert Table 1-5]

Ideation

Collett et al. (2016) reported a strong, negative correlation between self-compassion and SI (r= -.64, p=.002), supporting findings from non-psychosis samples. Whereas Tarrier et al. (2004) found a non-significant correlation between self-acceptance and SI. However, a significant group difference was found in self-acceptance when participants were dichotomised into 'no' versus 'some' (combining the weak, moderate, and strong groups) SI. Similar to self-esteem, self-acceptance may be associated with the presence but not severity of SI in PEP.

Whilst both being forms of self-warmth, self-compassion and self-acceptance are different concepts with different outcome measures used, making it difficult to directly compare findings. Furthermore, self-acceptance was conceptualised by the authors as "generalised feelings about him or herself such as the degree to which they are happy with themselves" (Tarrier et al., 2004, p.929). This conceptualisation, therefore, differs from other definitions of self-acceptance and/or self-warmth and may more closely align with the concept of self-esteem. Although there is some evidence to suggest a relationship between self-warmth and SI in PEP, as only two studies currently exist, further research is warranted.

Attempts

Only one study explored the relationship between a self-warmth concept and SA in PEP, finding a non-significant difference in self-acceptance between those with and without a history of SA (Tarrier et al., 2004). As suggested within the IMV model, SI and SA are distinct concepts and it may be that self-warmth acts as a 'motivational moderator' (i.e., protecting against the development of SI yet not SA). The findings represent one cross-sectional study, using a sample of 56 psychosis patients recruited from four NHS trusts in the United Kingdom, and, as such, cannot be generalised to all PEP. Due to the limited research, it is not possible to draw firm conclusions from the available literature.

Discussion

This systematic review explored the relationships between PSCs and suicidality in PEP, as well as how PSCs have been examined in PEP, with the aim to highlight areas for development in future practice and research.

Relationship Between Positive Self-concepts and Suicide in People Experiencing Psychosis

The findings suggest a relationship between PSCs and suicide in PEP, whereby the absence of PSCs is associated with greater risk of suicidality. The presence of PSCs has been shown to be a protective factor against the development of suicidality when other risk factors are present. Specifically, self-esteem is associated both with less SI and SA in PEP, and moderates the association between risk factors (e.g., depression) and suicidality. Similarly, positive self-appraisals are generally associated with a lower likelihood of SI and mediate the relationship between known risk factors, such as hopelessness, and SI in this population. Positive self-appraisals may, therefore, buffer the pathway between entrapment and SI as suggested by the 'motivational factors' of the IMV model (O'Connor, 2011) and be an effective aim of interventions attempting to reduce SI. However, there is currently no data supporting a relationship between positive self-appraisals and SA.

Only two studies explored self-warmth in PEP with mixed results. Therefore, there is not currently enough data to confirm a relationship in this population. Self-warmth concepts have been repeatedly associated with reduced suicidality in non-psychosis samples. Cleare et al. (2019) identified 18 studies, all reporting significant negative relationships between self-forgiveness or self-compassion and SI. Furthermore, a pilot RCT found that, for individuals receiving Compassion Training treatment, improvement in self-compassion predicted the reduction of suicidal ideation (LoParo et al., 2018). It is currently unclear whether the findings demonstrate a unique relationship between self-warmth and suicide in PEP, as compared to the general population, or whether the non-significant findings are due to

differences in design (i.e. different conceptualisations of self-acceptance). Interestingly, no studies were identified which explored self-forgiveness despite its association with suicidality in the general population (Cleare et al., 2019).

The findings were supported across America, Europe, Africa and Asia, using both clinical and ultra-high-risk populations, potentially suggesting external validity. However, most studies were conducted in Western populations with clinical samples, and therefore should be interpreted cautiously. Most studies reported simple correlational analyses or group comparisons and are, therefore, limited by not controlling for confounding variables which could explain variance in suicidality above the role of PSCs. However, findings were generally supported by the few multiple regressions and ANCOVA analyses completed, tentatively suggesting the role of PSCs in suicide risk in PEP.

Many of the papers conclude that PSCs predict suicidality in PEP. However, owing to the cross-sectional design of most studies, it is not possible to infer causality. It is plausible that the experience of SI/SA could subsequently reduce individual's positive beliefs and feelings about themselves. Only two longitudinal studies were identified within this review, both exploring self-esteem and reporting non-significant or mixed findings. However, the longitudinal studies had limitations which prevented them from establishing a temporal effect of self-esteem on suicidality (i,e, insufficient statistical power or inappropriate study design). It would be beneficial for future research to include longitudinal studies exploring change in PSCs and SI/SA over time. For example, experimental studies such as clinical trials which alter PSCs could explore the subsequent effect on suicidality in PEP. A systematic review of 12 randomised controlled trials with a self-esteem component has found small effect sizes for SI post-intervention in other populations (Dat et al., 2022). Therefore, it would be interesting to explore whether similar findings exist in PEP.

How Positive Self-concepts are Examined in People Experiencing Psychosis

Overall, this review highlights that PSCs are not explored frequently in PEP, despite the recent growth of positive suicidology research in the general population. Additionally, when PSCs are investigated, significant findings are either not reported in the results or not given similar attention to negative self-concepts. For example, despite finding significant relationships between self-esteem and self-compassion and SI, Collett et al. (2016, pp. 79, 83) report associations with "conceptualisations of the negative self". Additionally, the positive-self subscale of the BCSS was not reported despite being measured. Whilst this is understandable given the research aimed to explore 'negative self-cognitions', this demonstrates the relative focus on risk factors compared to protective factors. In Tarrier et al.'s (2004) study, self-acceptance was reverse-scored and formed part of the 'Negative Evaluation of Self' dimension, rather than being viewed as a positive appraisal. Although self-esteem was the most researched concept in the reviewed literature, studies report a relationship between 'low self-esteem' and suicide. As some studies found a moderating relationship, whereby the presence of high self-esteem reduces the risk of suicide when other demographic and clinical risk factors are present, the same findings could be conceptualised as self-esteem being protective against suicide.

While this difference could be argued to be semantic, the overall focus on negative factors in psychosis research paints a bleak picture whereby participants' strengths and skills and the factors which promote recovery are not highlighted. Whilst prevalence of suicide is high, the majority of PEP do not complete nor attempt suicide (Hor & Taylor, 2010) and, therefore, there is scope for PSCs and the wider concepts of positive suicidology to be explored explicitly in this population.

The review also highlighted major differences in how suicide concepts are defined within research in this population. For example, whilst Xu et al. (2016) determined any score greater than 0 on the HRSD (including 'feels life is not worth living') as experiencing

suicidality, Tarrier et al. (2006) classified frequent ideation and/or passive suicidality as 'low' suicidality, and multiple studies used combined measures of SI/SA. Conceptual consensus is often a difficulty in research, however, moving towards a shared understanding of the definition of SI and SA would improve the ability to compare findings across studies.

Implications for Clinical Practice and Research

Findings of this review have important implications for future clinical practice and research. For one, while the author does not propose the use of PSC measures as a means of risk assessment (i.e., individuals experiencing psychosis having high self-esteem or positive self-appraisals does not necessarily confer 'low risk'), quantitative and qualitative assessments of PSCs may be beneficial as part of a larger, holistic assessment of risk. Indeed, Zortea et al. (2020) suggest that particular attention be given to modifiable risk and protective factors, given the potential for risk reduction strategies.

A second clinical implication relates to interventions. Despite the prevalence of suicidality and evidence supporting an integrated approach of pharmacological and psychosocial treatment for PEP (Lauriello et al., 2003), effective evidence-based interventions aimed at reducing suicide in this population are limited (Bornheimer et al., 2020). A comparatively far greater number of studies have explored the effect of pharmacological treatment on suicidality in PEP (Kasckow et al., 2011), supported by studies highlighting the role of 'positive symptoms' in suicide risk (Bornheimer & Jaccard, 2017). However, a recent systematic review and meta-analysis provides evidence that psychological interventions can reduce suicidality in PEP (Bornheimer et al., 2020).

The findings of this review provide tentative support for the role of therapeutic approaches which specifically aim to improve self-esteem and positive-self appraisals as a means to reduce suicidality in PEP. Tarrier et al. (2014) developed a novel Cognitive Behavioural Prevention of Suicide in Psychosis protocol (CBSPp) which found that

individuals in the CBSPp group improved on measures of SI and suicide probability (with an effect size of -.32 and -.30 respectively), compared to controls. Of particular interest to this review, the CBSPp group showed post-intervention differences in secondary outcomes including self-esteem (effect size .59). Whilst the authors did not explore the direct relationship between self-esteem and suicidality, it is possible that improvements in self-esteem may explain some of the intervention effects on suicide risk in this sample. Many established therapeutic models (e.g., Cognitive Behavioural Therapy, Compassion Focussed Therapy, Schema Therapy, Cognitive Analytic Therapy) can be used to help people relate to themselves more positively and may be a potential treatment for PEP experiencing SI. It is our hope that the findings of this review support the use of interventions improving PSCs as a treatment for suicidality in PEP.

Additionally, the findings highlight important areas for future research. The relationship between self-warmth concepts and suicidality in PEP, particularly the role of self-kindness, is vastly under researched yet may have important implications for compassion-based interventions such as Compassion Focused Therapy. Due to the dearth of longitudinal studies, it would be beneficial for future research to include longitudinal studies exploring change in PSCs and suicidality over time. Finally, whilst the findings of this review tentatively support a relationship between self-esteem and positive self-appraisals and SI in this population, most studies are limited by not controlling for confounding variables and/or not distinguishing between ideation and attempts. As suggested by the IMV model (O'Connor, 2011), suicide involves a complex interplay of multiple risk and protective factors which ultimately move a person towards thoughts of and subsequent acts of suicide. Future research should, therefore, aim to explore whether PSCs explain variance in SI and/or SA in PEP when controlling for known risk factors, such as defeat and entrapment.

Limitations

Systematic reviews use a retrospective, observational research design, and as such are subject to systematic and random error (Cook et al., 1997). The review was completed in partial fulfilment of the Doctorate in Clinical Psychology programme and, as such, the majority of the work was undertaken by the author (WL). A second researcher (MS) screened a proportion (25/105, 23.8%) of potential studies in the second stage of screening, selected using a random number generator, whilst blinded to the initial decision. A full screen by multiple, independent reviewers is not specified as necessary on the PRISMA checklist, however, the use of two screeners is strongly recommended (Baird, 2018; Muka et al., 2019) to reduce risk of meta-bias. Similarly, risk of bias assessment was largely undertaken by the author, with a second researcher independently reviewing a randomised selection (5/14, 35.7%) of the included studies. Although discrepancy was low at both stages and efforts were made to ensure consistency with the inclusion/exclusion criteria and bias appraisal criteria of the SQAC, the potential risk of bias is present.

Additionally, due to time and resource constraints, the inclusion criteria posited that studies must be published in a peer-reviewed journal, meaning that grey literature and doctoral theses were excluded. As such, there is risk of publication bias wherein studies that do not demonstrate statistical significance are less likely to be published even if non-significant findings may be clinically relevant (Baird, 2018). As PSCs were generally not the primary researchers' area of interest, this is less likely to have introduced bias to the findings. However, future research comparing the findings to non-peer-reviewed literature would further the understanding of relationships in this area.

Conclusion

Within the identified literature, significant associations were found between the PSCs of self-esteem, positive self-appraisals, and self-warmth and reduced suicidality in PEP. Viewed within the context of positive suicidology and risk factor models such as the IMV

model, the exploration and improvement of PSCs may have important implications for the assessment and treatment of suicidality in PEP. However, research into self-appraisals and self-warmth concepts was relatively limited, particularly their relationship with SA. Therefore, further research exploring PSCs and the wider field of positive suicidology is clearly warranted in PEP.

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Tables

Table 1-1

Summary of study characteristics

Study & Country	Design	Participant characteristics	Positive self-concept measure	Suicidality measure
Chen et al. (2023), Taiwan	Cross-sectional	N=300 individuals diagnosed with schizophrenia or schizoaffective disorder (DSM-5); age 20-70	Self-esteem (RSES)	Combined ideation and attempts (MINI 5-items)
Collett et al. (2016), UK	Cross-sectional	N=21 individuals diagnosed with non-affective psychosis with persecutory delusions (diagnostic confirmation NR); age 21-66	Positive self-schema (BCSS); Self-compassion (SCSa); Self-esteem (RSES); Social Comparison (SCSb)	Ideation (BSS)
Cui et al. (2019), South Korea	Cross-sectional	N=309 patients recently diagnosed (<2 years) with schizophrenia spectrum disorder, delusional disorder, brief psychotic disorder, or other specified schizophrenia spectrum and psychotic disorder (DSM-5); age 18-45	Positive-self schema (BCSS)	Ideation (CSSRS)
Fekih-Romdhane et al. (2023), Tunisia	Longitudinal	N=35 UHR individuals (CAARMS-defined criteria); age 15-37 at baseline	Self-esteem (RSES-Av)	Ideation (CAARMS); Attempts (from clinical records)
Fialko et al. (2006), UK	Cross-sectional	N=290 non-affective psychosis patients (ICD-10, F20); age 18-65	Self-esteem (RSES); Positive-self schema (BCSS)	Ideation (BDI-II item 9)

Fulginiti & Brekke (2015), USA	Cross-sectional	N=162 diagnosis of schizophrenia or schizoaffective disorder (DSM-4); age 18-55	Self-esteem (ISE)	Ideation (BPRS-E single item)
Jian et al. (2022), Taiwan	Cross-sectional	N=300 outpatients diagnosed with schizophrenia (N=26) or schizoaffective disorder (N=33, DSM-5); age 20-70	Self-esteem (RSES)	Combined ideation and attempts (MINI 5-items)
Johnson et al. (2010b), UK	Cross-sectional	N=77 individuals diagnosed with schizophrenia spectrum disorders (ICD-10); age range NR (mean: 42.3 years)	Positive self-appraisals (RAS subscale)	Ideation (BSS)
Lien et al. (2018), Taiwan	Cross-sectional	N=170 individuals diagnosed with schizophrenia (DSM–4TR); age 19–65	Self-esteem (RSES)	Ideation (BSS items 0-13); Attempts (interview - "Have you ever attempted suicide in your lifetime?")
Peters et al. (2012), UK	Cross-sectional	N=46 clinically stable outpatients (diagnostic confirmation NR) attending Cognitive Behaviour Therapy for psychosis; age 23-62	Self-esteem (RSES)	Ideation (BSS)
Tarrier et al. (2004), UK	Cross-sectional	N=59 individuals diagnosed with schizophrenia, schizophreniform, or schizoaffective disorder (DSM-4) for <3 years; age 18-48	Perceived role performance; perceived personal attributes, self-acceptance (SESS-sv)	Ideation (BSS); Attempts (reported history)

Tarrier et al. (2006), UK	Longitudinal	N=278 inpatient/day patients diagnosed with schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, or psychosis not otherwise specified (DSM-4); age at entry 16–66	Self-esteem (RSES)	Combined ideation and behaviour (non-accidental self-injury scale of the HoNOS)
Xu et al. (2016), Switzerland	Cross-sectional	N=172 individuals at high-risk (SPI) or ultra-high risk (SIPS-3) for psychosis, or risk of bipolar disorder (Hypomania Checklist); age 13-35	Self-esteem (RSES)	Ideation (Suicidality item of the HRSD, converted to 0 = no ideation, ≥1 ideation)
Yoo et al. (2015), South Korea	Cross-sectional	N=87 patients diagnosed with schizophrenia (DSM-4); age 17-56	Self-esteem (RSES)	Attempts (clinical interview, defined as "at least some intent to die")

Note: CAARMS = Comprehensive Assessment of At Risk Mental States (Yung et al., 2005), DSM-4 = Diagnostic and Statistical Manual of Mental Disorders 4th Ed. (APA, 1994), DSM-4TR = Diagnostic and Statistical Manual of Mental Disorders 4th Ed., Text Revision (APA, 2000), DSM-5 = Diagnostic and Statistical Manual of Mental Disorders 5th Ed. (APA, 2013), Hypomania Checklist (Angst et al., 2005), ICD-10 = International Statistical Classification of Diseases and Related Health Problems, 10th Ed. (World Health Organization, 2016), SPI = Schizophrenia Proneness Interview (Schultze-Lutter et al., 2007), SIPS-3 = Structured Interview for Prodromal Syndromes v3 (McGlashan et al., 2001). BCSS = brief core schema scale (Fowler et al., 2006), ISE = Index for Self-Esteem (Hudson, 1982), RAS = Resilience Appraisals Scale (Johnson et al., 2010a), RSES = Rosenberg Self Esteem Scale (Rosenberg, 1979), RSES-Av = Rosenberg Self Esteem Scale, Arabic version (Hechaichi & Yaqub, 2010), SCSa = Self-Compassion Scale (Neff, 2003a), SCSb = Social Comparison Scale (Allan & Gilbert, 1995), SESS-sv = Self Evaluation and Social Support Interview: Schizophrenia Version (Humphreys et al., 2001). BDI-II = Beck Depression Inventory, revised (Beck et al., 1996), BPRS-E = Brief Psychiatric Rating Scale Expanded (Dingemans et al., 1995), BSS = Beck Scale for Suicidal Ideation (Beck et al., 1979), CSSRS = Columbia Suicide Severity Rating Scale (Posner, 2007), HoNOS = Health of the Nation Outcome Scale (Wing et al., 1998), HRSD = Hamilton Rating Scale for Depression (Hamilton, 1960), MINI = Mini-International Neuropsychiatric Interview (Sheehan et al., 1998). NR = not reported

Table 1-2

Risk of bias assessment

Study	SQAC Score (Yes = 2, Partial = 1, No = 0, N/A = -)														Sum	Possible Total	Percentage
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14			
Chen et al., (2023)	2	2	2	2	-	-	-	2	2	2	2	2	2	2	22	22	100.0
Collett et al. (2016)	2	2	0	2	-	-	-	2	1	1	2	0	2	2	16	22	72.7
(Cui et al., 2019)	2	2	2	2	-	-	-	2	2	2	2	2	2	2	22	22	100.0
Fekih-Romdhane et al. (2023)	2	2	2	2	-	-	-	2	0	1	1	2	2	0	16	22	72.7
Fialko et al. (2006)	2	1	2	2	-	-	-	2	2	1	2	0	2	2	18	22	81.8
Fulginiti & Brekke (2015)	2	2	2	2	-	-	-	2	2	2	2	2	2	2	22	22	100.0
Jian et al. (2022)	2	2	2	2	-	-	-	2	2	2	2	2	2	2	22	22	100.0
Johnson et al. (2010b)	2	2	2	2	-	-	-	2	2	2	2	1	2	2	21	22	95.5

Lien et al. (2018)	2	2	2	2	-	-	-	2	2	2	2	2	2	2	22	22	100.0
Peters et al. (2012)	2	2	2	2	-	-	-	2	2	1	2	1	2	2	20	22	90.9
Tarrier et al. (2004)	2	2	2	2	-	2	-	2	1	2	1	1	2	2	21	24	87.5
Tarrier et al. (2006)	2	1	2	0	1	2	0	1	1	1	2	1	2	2	18	28	64.3
Xu et al. (2016)	2	1	2	2	-	-	-	2	2	2	2	2	1	2	20	22	90.9
Yoo et al. (2015)	2	1	2	2	-	-	-	1	2	2	2	2	2	2	20	22	90.9

Note: SQAC = Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (Kmet et al., 2004).

Table 1-3

Summary of associations between self-esteem and suicidality

Study	Analysis	Findings
		Ideation
Collett et al. (2016)	Correlation	Higher self-esteem strongly correlates with lower SI, r = -.77; p < .001
Lien et al. (2018)	Correlation	Higher self-esteem moderately correlates with lower SI, r = -.43, p < .01
Peters et al. (2012)	Correlation	Higher self-esteem moderately correlates with lower SI, rs = .42, p < .01
Xu et al. (2016)	Correlation	Higher self-esteem weakly correlates with lower SI, r = -.31, p < .01
Fulginiti & Brekke (2015)	Multivariate hierarchical logistic regression	Higher self-esteem significantly predicts lower SI, controlling for sociodemographic and clinical factors, β = -0.24, OR 0.97 (95% CI 0.94, 0.99), p < .05
Fialko et al. (2006)	ANOVA	Significant differences in self-esteem scores (reverse scored) between the no SI (*M*: 21.1, *SD*: 5.7), mild SI (*M*: 26.2, *SD*: 5.9), and severe SI (*M*: 29.4, *SD*: 5.8) groups, $F(2) = 34.163$, p < .001. Individuals with less SI demonstrated more positive self-esteem.
Fulginiti & Brekke (2015)	*t*-test	Non-ideators demonstrated significantly higher self-esteem (*M*: 88.39, *SD*: 16.63) than ideators (*M*: 77.17, *SD*: 17.90), t = 3.28, p = .001
Fekih-Romdhane et al. (2023) [a]	Repeated measures ANOVA	Self-esteem at baseline did not significantly predict SI at 6-months (β = 0.06, [95% CI -0.16, 0.03], p = .167, η_p^2 = .078) or at 12-months (β = -0.03 [95% CI -0.11, 0.06], p = .503, η_p^2=.023) Self-esteem at 6-months did not significantly predict SI at 6-months (β = -0.02 [95% CI -0.13, 0.09], p = .679, η_p^2 = .007) or at 12-months (β = 0.02 [95% CI -0.09, 0.13], p = .670, η_p^2 = .009) Self-esteem at 12-months did not significantly predict SI at 12-months (β = -0.01 [95% CI -0.11, 0.10], p = .912, η_p^2 = .001)

		Attempts
Fekih-Romdhane et al. (2023)	*t*-test	Non-attempters demonstrated significantly higher self-esteem (*M*: 24.1, *SD*: 6.2) than attempters (*M*: 19.1, *SD*: 4.7), *t* = -2.3, *p* = .029
Lien et al. (2018)	*t*-test	Non-attempters demonstrated significantly higher self-esteem (*M*: 28.1, *SD*: 5.53) than attempters (*M*: 25.1, *SD*: 4.87), *t* = -3.67, *p* <.01, *d* = 0.54
Yoo et al. (2015)	*t*-test	Non-attempters demonstrated significantly higher self-esteem (*M*: 27.2, *SD*: 5.0) than attempters (*M*: 22.8, *SD*: 4.9), *t* = NR, *p* = .001
	ANCOVA	Individuals with no history of suicide attempts demonstrated significantly higher self-esteem (*M*: 26.7, *SD*: 0.5) than those with a history of suicide attempts (*M*: 24.4, *SD*: 0.9), after controlling for internalised stigma and depressive symptoms, *F* = 4.429, *p* = .039
		Combined
Chen et al. (2023)	Linear regression	Self-esteem did not predict suicidality, β = 0.006 (SE: -0.01), *p* > *.05*.
Jian et al. (2022)	Linear regression	Higher self-esteem significantly predicted reduced suicidality, β = −0.011 (SE: 0.01), *p* < .05
Tarrier et al. (2006) [a]	*t*-tests	At baseline, there was no significant difference in self-esteem between those with low (*M*: 27.2, *SD*: 4.8) and high suicidal behaviour (*M*: 27, *SD*: 5.1), *t*(226) = 0.3, *p* = .792 At 6-weeks, individuals with low suicidal behaviour demonstrated significantly higher self-esteem (*Mdn*: 28, Range: 3-40) than those with high suicidal behaviour (*Mdn*: 21, Range: 10-25), *z* = 4.0, *p* < .001. At 3-months, there was no significant difference in self-esteem between those with low (*Mdn*: 28, Range: 10-40) and high suicidal behaviour (*Mdn*: 21.5, Range: 16-27), *z* = 1.4, *p* = .158 At 18-months, individuals with low suicidal behaviour demonstrated significantly higher self-esteem (*M*: 28.0, *SD*: 4.7) than those with high suicidal behaviour (*M*: 23.3, *SD*: 4.1), *t*(193) = 3.3, *p* = .001.

[a] longitudinal

Table 1-4

Summary of associations between self-appraisals and suicidality

Study	Analysis	Findings
		Ideation
Johnson et al. (2010b)	Correlation	Higher positive self-appraisals moderately correlated with less SI, r = -.47, p < .01
Collett et al. (2016)	Correlation	Social comparison has a strong, negative correlation with SI, with more positive appraisals being associated with less SI r = -.67, p = .002
Fialko et al. (2006)	ANOVA	Significant difference in positive-self schema scores between the no SI (*M*: 11.7, *SD*: 6.3), mild SI (*M*: 8.3, *SD*: 6.3), severe SI (*M*: 6.9, *SD*: 5.6) groups, F = 10.876, p < .001. Individuals with less SI demonstrated more positive self-appraisals.
Cui et al. (2019)	Single logistic regression	Higher positive-self schema significantly predicts lower SI, OR 0.890 (95% CI 0.846, 0.937), p < .001
	Stepwise multiple regression	Higher positive-self schema predicts lower SI when adjusting for trauma, OR 0.897 (95% CI 0.851, 0.946), p < .001
Tarrier et al. (2004)	*t*-test	No significant difference in positive evaluation of personal attributes between those with no SI (*M*: 2.67, *SD*: 0.7) and those with some SI (*M*: 2.4, *SD*: 1.0), t = 1.0, p = .302
	t-test	No significant difference in positive evaluation of role performance between those with no SI (*M*: 2.8, *SD*: 0.5) and those with some SI (*M*: 2.4, *SD*: 0.7), t = 1.7, p = .111
		Attempts
Tarrier et al. (2004)	*t*-test	No significant difference in positive evaluation of personal attributes between non-attempters (*M*: 2.7, *SD*: 0.8) and attempters (*M*: 2.6, *SD*: 0.9), t = 0.4, p = .679
	t-test	No significant difference in positive evaluation of role performance between non-attempters (*M*: 2.8, *SD*: 0.5) and attempters (*M*: 2.7, *SD*: 0.6), t = 0.8, p = .432

Table 1-5

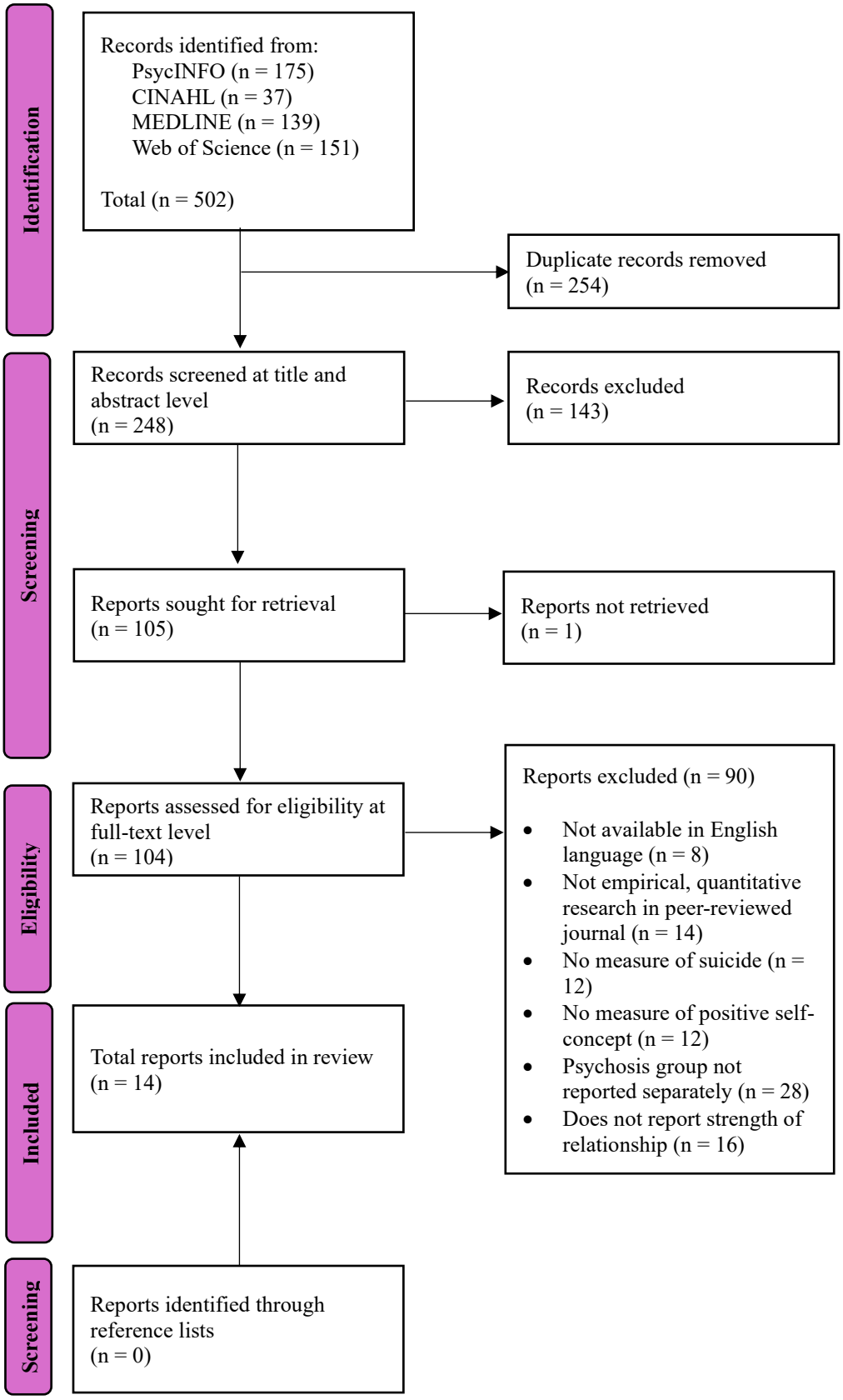
Summary of associations between self-warmth and suicidality

Study	Analysis	Findings
		Ideation
Collett et al. (2016)	Correlation	Higher self-compassion strongly correlated with less SI, r = -.64, p = .002
Tarrier et al. (2004)	*t*-test	Those with no SI scored significantly higher in self-acceptance (*M*: 2.9, *SD*: 0.8 [reverse scored]) than those with some SI (*M*: 3.4, *SD*: 0.9), t = 2.0, p = .05
	Correlation	Self-acceptance had a non-significant correlation with SI, r = .255, p = .054
		Attempts
Tarrier et al. (2004)	*t*-test	No significant difference in self-acceptance between non-attempters (*M*: 2.9, *SD*: 0.9) and attempters (*M*: 3.1, *SD*: 0.8), t = 0.6, p = .535

Figures

Figure 1-1

Overview of the systematic screening process



Appendix 1-A

British Journal of Clinical Psychology

Author Guidelines

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Section Two: Empirical Paper

Schema, Defeat, Entrapment, and Suicidal Thinking and Behaviour in People with Experiences of Psychosis

Wren Little

Doctorate in Clinical Psychology

Division of Health Research, Lancaster University

All correspondence should be sent to:

Wren Little

Doctorate in Clinical Psychology

Health Innovation One

Sir John Fisher Drive

Lancaster University

Lancaster

LA1 4AT

w.little1@lancaster.ac.uk

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Abstract

Objective: To explore the relationship between schema and suicidal ideation (SI) and attempts (SA) in people experiencing psychosis (PEP). Hypotheses were informed by the Schematic Appraisals Model of Suicide and the Integrated Motivational-Volitional Model.

Design: A quantitative, cross-sectional, online survey design was used. Participants were 124 PEP, recruited via social media.

Method: Multiple regression examined whether negative schema explained unique variance in SI severity, controlling for demographic and clinical variables, defeat, and entrapment. Secondary analyses explored whether negative schema mediated the relationship between defeat/entrapment and SI, and whether positive schema moderated the relationship between negative schema and SI. Exploratory analyses examined the relationship between core schema and SA.

Results: Negative schema explained unique variance in SI, and negative-self schema and entrapment were significant single predictors in the model. Negative schema fully mediated the relationships between defeat/entrapment and SI. The moderation analysis was non-significant. Minoritised gender, but not schema, predicted greatly increased odds of previous SA in PEP.

Conclusion: As a potentially modifiable risk factor, negative schema, particularly self-appraisals, may warrant greater attention within suicide risk models and interventions. Gender minority PEP have increased odds of suicide, potentially due to multiple minority stress. Clinical and research implications are discussed.

Key words: suicide; schema; cognitive appraisals; psychosis; defeat; entrapment

Practitioner Points

- The findings provide tentative support for the role of therapeutic approaches and systemic change which specifically aim to reduce negative self-appraisals as a means to reduce suicidality in people experiencing psychosis.
- People with minoritised gender identities who experience psychosis have significantly increased odds of suicide attempts, suggesting the need for improvements to interventions for transgender and/or non-binary individuals experiencing psychosis.

Schema, Defeat, Entrapment, and Suicidal Thinking and Behaviour in People with Experiences of Psychosis

Psychosis and Suicide

Psychosis is an umbrella term referring to a group of symptoms, often categorised within psychiatric nomenclature as either ‘positive’ or ‘negative’. Positive symptoms reflect an excess or distortion of normal function (i.e., ‘reality distortion’ such as hallucinations and delusions and ‘disorganisation’ such as disorganised behaviour or thought disorder) and negative symptoms describe a lessening or absence of behaviours related to motivation and interest (i.e., anhedonia, avolition) or verbal/emotional expression (i.e., alogia, blunted affect) (Jauhar et al., 2022). When experiences of psychosis are distressing and impact on quality of life, they often result in diagnoses of schizophrenia spectrum disorder (SSD; American Psychiatric Association, 2013; World Health Organization, 2004), which affects roughly 0.45% of adults worldwide (World Health Organization, 2022). Experiences of psychosis are common in the general population, however, with an estimated annual prevalence of 7.2% (Linscott & van Os, 2013).

The association between psychosis and the spectrum of suicidality is well-documented, with 35% of people with SSDs experiencing suicidal ideation (SI), 27% making non-fatal suicide attempts (SA), and 5% completing suicide (Bai et al., 2021; Hor & Taylor, 2010; Lu et al., 2019). Beyond diagnosis, increased risk of suicidality is repeatedly documented in those experiencing psychosis, including within the general population and ‘at-risk’ groups (Bromet et al., 2017; Connell et al., 2016; De Loore et al., 2011; Martin et al., 2015; Pelizza et al., 2020; Yates et al., 2018). Gaining a clear understanding of the factors contributing to suicide in people experiencing psychosis

(PEP) irrespective of diagnosis is, therefore, crucial for psychologists working with this population. However, despite extensive research outlining the prevalence of suicidality in PEP, a lack of consensus exists regarding the specific suicide risk factors in this population and a dearth of research exploring psychological processes such as people's schematic beliefs.

Risk Factors and Models

Extant reviews of suicidality in psychosis have focused on sociodemographic and clinical risk factors associated with completed suicides in SSDs. Younger age, male sex, older age at illness onset, and depression have been repeatedly associated with increased risk of suicide death (Cassidy et al., 2018; Dutta et al., 2011; Hawton et al., 2005; Large et al., 2011; Popovic et al., 2014). The impact of sex/gender has been contested, however. In the general population, the completed suicide rate is approximately three- to four-times higher for men than woman (Alothman & Fogarty, 2020). The gender difference appears less marked amongst those diagnosed with SSDs at approximately 1.5 times higher in men (Cassidy et al., 2018; Hawton et al., 2005), with some reviews and meta-analyses finding no association between sex/gender and suicide in people with SSDs (Large et al., 2011). Furthermore, research on sex/gender differences in SI and SA among people with SSDs is limited and mixed (Austad et al., 2013; Cassidy et al., 2018).

Existing research has generally used a dichotomy of biological sex, and suicidality in PEP with minoritised gender identities (i.e., transgender and/or non-binary individuals) is underexplored. Transgender people are 3 to 49.7 times more likely to receive a SSD diagnosis than cisgender persons (Barr et al., 2021) and rates of SA have been reported to be 22 times greater in gender minoritised individuals than population estimates (Adams et al., 2017). Transgender people report higher rates of trauma,

bullying, and discrimination than cisgender people (Barr et al., 2022; Day et al., 2018; James et al., 2016), demonstrating vulnerabilities that may increase the risk of suicide.

The relationship between psychosis symptomology and suicide risk is similarly debated. Some reviews state that higher positive and negative symptoms are associated with increased SI, SA, and completed suicides (Cassidy et al., 2018; Coentre et al., 2017; Dutta et al., 2011); whereas a meta-analysis of longitudinal studies found that positive symptoms predicted SI, SA and completed suicides, yet negative symptoms were not associated with SI and were protective against suicide death (Huang et al., 2018). Notably, reducing psychosis symptoms has not been found to reduce suicidality. A review of psychosocial interventions found significant decreases in psychotic symptoms, however, there were no significant differences between the intervention and treatment-as-usual groups in either SA or completed suicides and less than half (40%) report reductions in SI (Donker et al., 2013). Further research is therefore needed to understand the modifiable risk factors for suicidality in PEP to determine appropriate interventions.

Several transdiagnostic models have been developed to understand the emergence of SI and SA. The Integrated Motivational-Volitional (IMV) model of suicidal behaviour (O'Connor, 2011; O'Connor & Kirtley, 2018) aimed to synthesise the extant evidence and theories into a single tri-partite model. Based on the diathesis-stress model (van Heeringen, 2012), in the first phase (pre-motivational), individual vulnerabilities and stressors such as childhood adversity confer an elevated risk of developing SI. The 'motivational' phase builds upon the Cry of Pain (Williams, 2001) and Escape from Self (Baumeister, 1990) models, which suggest that SI is triggered as a behavioural escape strategy to manage perceived defeat and entrapment. Defeat refers to feeling knocked down by life's difficulties and entrapment refers to feeling unable to escape an unbearable situation (Gilbert & Allan, 1998). The IMV model posits that defeat leads to

entrapment, and entrapment to SI, and the transitions are determined by stage-specific mediators and moderators.

The final ('volitional') phase determines the transition from SI to SA, and is based on theories utilising the 'ideation-to-action framework'. The Interpersonal Theory of Suicide (Joiner, 2005; van Orden et al., 2010) and 'Three-Step Theory' (Klonsky & May, 2015) assert that the factors that lead to the development of SI are distinct from and therefore poor predictors of SA (Klonsky & May, 2014; Klonsky et al., 2017). For example, SA requires the 'capability to act' upon SI, which emerges through factors such as exposure to suicidal behaviour (Joiner, 2005). Therefore, according to the IMV, the combination of personal vulnerabilities and/or acute or chronic life stressors (e.g., early life adversity), perceptions of defeat and entrapment, and acquired capability to act on thoughts of suicide increases the likelihood of suicide.

The IMV model has been supported by multiple reviews and one meta-analysis (O'Connor & Portzky, 2018; Siddaway et al., 2015; Souza et al., 2024; Taylor et al., 2011a). Indeed, a recent review of 100 studies found overall support for the main principles of the IMV (Souza et al., 2024). However, only 21 studies included clinical samples with most (14/21, 66.6%) of these exploring the pre-motivational or volitional stages. Few studies (e.g., Lucht et al., 2020; Owen et al., 2017; Panagioti et al., 2012) have investigated the motivational phase in a clinical population, and fewer still with PEP. O'Neill et al. (2021) demonstrated that a model of depression, hopelessness, entrapment, and self-attacking predicted 53% of the variance in suicide probability, in a sample in which one-quarter (25/101, 24.7%) of the participants reported to have psychosis. To the author's knowledge, only one study has tested the main predictions of the IMV model with a strictly psychosis sample (Taylor et al., 2010), and found that defeat and entrapment (conceptualised as a single variable) accounted for 31% of the

variance in SI/SA. Defeat/entrapment further mediated the relationship between positive symptom severity and SI whilst controlling for hopelessness and depression; suggesting that the IMV model may have applicability to this population. As such, further research is needed which explores the relationship between defeat, entrapment, and SI, alongside other potential risk factors in PEP.

Schema and Suicide

One aspect which has received less attention in the IMV model and may contribute to suicidality within PEP is individuals' cognitive appraisals of themselves/others. The Schematic Appraisals Model of Suicide (SAMS) was developed to understand suicide in PEP and posits that negative self-perception and expectations of interactions with others are fundamental risk factors, while positive appraisals may buffer the likelihood of suicide (Johnson et al., 2008; Johnson et al., 2010a). Core schemas (i.e., individuals' deep-rooted and stable appraisals about themselves and others) have been linked to distress and poor functioning in a psychosis population (Taylor & Harper, 2017).

Several studies have demonstrated associations between greater negative and lower positive schema about oneself/others and SI in PEP (e.g., Azadi et al, 2019; Collett et al., 2016; Cui et al., 2019; 2020; Fialko, 2006; Johnson et al., 2010b). Additionally, negative schema has been shown to mediate the relationship between childhood trauma and SI (Cui et al., 2019; 2020), and positive schema buffers the relationship between hopelessness and suicidality (Johnson et al., 2010b) in PEP. However, no previous studies have explored negative schema, defeat, entrapment, and SI together in PEP. Furthermore, to the author's knowledge, no study has explored the relationship between negative schema and SA in PEP.

The current study aimed to explore whether negative schema accounts for unique variance in SI severity in PEP after controlling for demographic and clinical variables, defeat, and entrapment. The study additionally aimed to demonstrate the mediating role of negative schema, whereby defeat and entrapment lead to SI through their impact on individuals' beliefs about themselves/others. Furthermore, the study sought to explore whether positive-self schema moderates the relationship between negative-self schema and SI, whereby positive self-beliefs buffer PEP against the impact of negative self-beliefs on SI. Finally, as the predictors of SI do not necessarily generalise to SA (Klonsky & May, 2014; Klonsky et al., 2017), the current study aimed to explore the relationship between negative schema and SA. Consequently, the following hypotheses were identified:

1. Higher negative schema would be significantly associated with greater defeat and entrapment
2. Higher negative schema would be significantly associated with greater SI severity and SA in people with psychosis
3. Negative schema would explain additional variance in SI severity after controlling for age, age of onset, gender, depression, defeat, and entrapment
4. Negative schema would mediate the relationship between defeat/entrapment and SI severity
5. Positive schema would moderate the relationship between negative schema and SI severity

Method

Design

The study used a cross-sectional survey design to explore the relationship between core schema, defeat, entrapment, and current SI and previous SA in PEP.

Participants

Eligibility criteria required participants to: (1) be adults (age 18 and above), (2) self-report a diagnosis of psychosis (i.e., schizophrenia spectrum disorder) and/or recent psychosis symptoms (e.g., hallucinations, delusions)[1], (3) report suicidal thinking in the past six months, and (4) have sufficient English language proficiency to complete self-report questionnaires and capacity to give informed consent. There were no restrictions on country of participation, however, the survey was only available in English language.

Predictive power for a linear multiple regression with eight predictors (age, gender, age of psychosis onset, depression, defeat, entrapment, and the two negative schema subscales of the brief core schema scale) was calculated using the G*Power statistical program. Studies with a similar model of defeat, entrapment, and depression (e.g., O'Neill, 2021) leave approximately 50% of variance unexplained, resulting in an estimated effect size (Cohen's f^2) of 0.1. To explore whether negative schema explains unique variance over and above an established model (R^2 increase), 100 participants were required.

Regarding the secondary analyses, studies in a psychosis population have identified a large effect size of combined defeat/entrapment on negative schema

[1] The original protocol required participants to self-report a SSD diagnosis. However, an amendment was made to include people with psychosis symptoms without a formal diagnosis.

(Stowkowy & Addington, 2012) and a medium effect of negative schema on suicidal thinking (Cui et al., 2020). Therefore, empirical estimates of sample sizes for mediation analyses suggested a required sample of 59 (Fritz & MacKinnon, 2007). G*Power calculation estimated a required sample size of 55 to power a moderation analysis capable of detecting a medium effect size.

Ethics

Ethical approval was obtained via the Lancaster University Faculty of Health and Medicine Research Ethics Committee (reference FHM-2024-3345-SA-2). All data was stored securely and used only for the advertised purpose. The measures asked participants about numerous sensitive topics, with the main potential for risk being the measures of suicidality. Participants were provided with detailed information regarding the topics in the questionnaire to ensure informed consent and it was clearly stated that participants could opt-out at any point during the survey (see Appendix 2-A). Each page of the survey contained contact information for a list of international services which could provide additional support if required (see Appendix 2-B).

Procedure

Information relating to the study was advertised through social media websites, primarily Facebook groups and Reddit forums, which were associated with psychosis, suicide, and general mental health. Recruitment was completed jointly with another researcher (MS), completing a study of suicidality in voice-hearers. As the studies had considerable overlap in measures used, this aimed to minimise negative impact for participants (i.e., avoid the need to replicate answers) and maximise recruitment for both studies (see Appendix 2-C: data collection flowchart). Participants accessed the anonymous survey via a web-based platform, Qualtrics. The URL was provided on all

advertisement materials. Participants were asked to read the information sheet and complete the consent form before beginning the survey..

Materials

All data were collected online using Qualtrics. Participants completed demographic characteristics (age, gender, ethnicity, marital status), clinical information (diagnosis, age of onset, voice-hearing status), and six validated questionnaires plus one additional item pertaining to previous SA. The survey consisted of 88 items[2].

Psychosis Experience Screening

The revised Community Assessment of Psychic Experiences-Positive Scale (CAPE-P15; Capra et al., 2017) assesses recent psychosis-like experiences including persecutory ideation, bizarre experiences, and perceptual abnormalities. It contains 15 items, each scored on a 4-point scale for a total score of 15-60. The CAPE-P15 was used as a screening tool for inclusion/exclusion, wherein participants who did not self-report to have a diagnosis and did not report any psychosis experiences on the CAPE-P15, were excluded from the study[3].

Predictor Variable Measures

Depression. The Center for Epidemiologic Studies Depression Scale 10-item version (CESD-10; Andresen et al., 1994) measures depression symptoms during the previous week using a 0-3 Likert scale. The total score is calculated by totalling all items after reversing the two positive mood items. Possible scores range from 0-30 with higher scores representing greater degree of depressed mood. The CESD-10 was chosen as it

[2] Where participants answered "yes" to hearing voices, they were asked to complete four further questionnaires for the fulfillment of a second, separate research study for a total of 114 items.
[3] Note: this measure was included following the change in protocol to include participants without a SSD diagnosis. As such, 24 participants did not complete this measure.

had fewer items relative to other measures, to reduce burden on participants, and has good psychometric properties, including within psychiatric samples (Björgvinsson et al., 2013).

Defeat and Entrapment. The Defeat Scale (Gilbert & Allen, 1998) assesses perceptions of defeat, including those of failed struggle and low social rank. The entrapment scale (Gilbert & Allen, 1998) assesses feelings of being trapped by internal/external events. Each scale contains 16-items, scored using a Likert scale of 0-4, resulting in a total score of 0-64 per measure with higher scores indicating greater defeat/entrapment. In a meta-analysis of research investigating the relationship between defeat and entrapment and four mental health problems (depression, anxiety, PTSD, and suicidality), 75% of studies included in the analysis used the Defeat and Entrapment Scales (Siddaway et al., 2015). Previous studies report the internal consistency for this measure in a psychosis population as 0.86 and 0.95 respectively (Taylor et al., 2010).

Schema. The Brief Core Schema Scale (Fowler et al, 2006) is a 24-item questionnaire which consists of four subscales (negative-self, negative-other, positive-self, and positive-other). Correlations with other measures suggest that the BCSS assesses a distinct construct, demonstrating discriminant validity between negative schema and depression or self-esteem (Fowler et al., 2006). The BCSS has shown good internal consistency in previous studies relating to suicidality in psychosis (Fialko et al., 2006).

Outcome Variables

Suicidal Ideation Severity. The Columbia Suicide Severity Rating Scale Suicidal Ideation Severity Subscale (CSSRS-SISS; Posner et al., 2011) is a 5-item subscale of the full scale CSSRS. Participants score the absence/presence of five types of ideation of increasing severity, and the most severe ideation endorsed (1-5) becomes the

score for this section (C-SSRS Scoring for Clinicians, 2016). The CSSRS-SISS has been validated as a continuous measure of ideation severity in multiple linear regression (Zakhour et al., 2021).

Suicide Attempts. Suicide attempts were measured using one item from the Adult Psychiatric Morbidity Survey (APMS; McManus et al., 2016), which asks "Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?" Single-item measures of suicidality have been used in numerous studies including psychosis samples (e.g., Fialko et al., 2006; Fulginiti & Brekke, 2015). While critiques of single-item suicide measures exist (e.g., Millner et al., 2015), single-item assessments of lifetime SA show good response consistency (Ammerman et al., 2021).

Statistical Analyses

Statistical analyses were completed using Statistical Package for Social Science (IBM SPSS) version 29. The categorical gender variable was recoded into a binary variable of non-minoritised versus minoritised gender (i.e., transgender man, transgender woman, and non-binary). Descriptive statistics were computed and examined to understand sample characteristics. Normality of distributions were visually assessed using histograms and Q-Q plots and checked with Kolmogorov-Smirnov test of normality. Only the defeat scale, entrapment scale, and negative-self subscale of the BCSS were normally distributed, while all other variables were not. Therefore, non-parametric tests were used. Mann Whitney U tests assessed differences between the demographic characteristics of complete and partial responses and to compare the scores on outcome measures between those with and without a formal diagnosis. Correlational analysis used Spearman's rank to measure the strength of the relationship between variables.

The predictor variables were entered into a forced entry multiple linear regression model, with the CSSRS-SISS subscale as the dependent variable. Two models were compared: (1) age, age of onset, gender, depression, defeat and entrapment. (2) Age, age of onset, gender, depression, defeat and entrapment, negative-self, and negative-other. Bivariate regressions were checked against the adjusted beta values in the adjusted model.

For the secondary hypotheses, mediation analyses investigated whether negative schema mediates the relationship between a) defeat and SI and b) entrapment and SI. A moderation analysis explored whether the relationship between negative-self schema and SI is moderated by positive-self schema. An exploratory analysis was also completed with SA (measured using the APMS) as the outcome variable. Age, age of onset, gender, depression, defeat, entrapment, negative-self, and negative-other schema were entered simultaneously in a forced entry binary logistic regression model.

Results

Participant Characteristics

Of the 298 people who accessed the survey, 58 did not complete any questions, 20 were screened out as they were not 18 years of age and 17 were screened out for not having experienced suicidal ideation in the previous six months. Of the 203 people who completed the screening, 54 did not complete the demographic questions (age, gender, ethnicity, marital status; $n = 44$) and clinical questions (age of onset and voice-hearing if applicable; $n = 10$), and a further 14 did not complete all measures. Eleven participants who completed the survey had missing or disqualifying data for age, gender, or age of onset (e.g., typing "never have" for age of onset). These participants were removed prior to data analysis, leaving 124 participants.

Most participants reported a SSD diagnosis (70.2%). The most commonly reported diagnoses were schizoaffective disorder (31.5%) and schizophrenia (21%). The median age of onset was 19 years (ranging from 2-48 years), and 66.2% of respondents were voice-hearers. In terms of demographics, the majority of the participants reported their ethnicity as White (71.8%), and the median age was 29.5 (ranging between 18-65 years). The most frequently reported gender was woman (42.7%), followed by man (37.1%), and 20.2% of participants identified as transgender man/woman or non-binary. Most participants reported their marital status as 'never married' (54.8%), cohabiting/married participants made up 40.4% of the sample, with a further 4.8% reporting to be divorced/separated. Sample characteristics can be found in Table 2-1.

[Insert Table 2-1]

Mann-Whitney U and Chi-squared tests compared differences between participants with and without a formal diagnosis (see Appendix 2-D). Those with a

diagnosis were older (*Mdn* = 30 years) than those without a diagnosis (*Mdn* = 26 years), $U = 1208.5$, $p = .028$, and were more likely to hear voices (79.3%) than those without a diagnosis (35.1%), $\chi(1) = 22.62$, $p < .001$. There were no other significant differences. Furthermore, there was no significant differences between completers and non-completers for any of the predictor or outcome variables (see Appendix 2-E). Completers were, however, more likely to have a diagnosis than non-completers, $\chi(1) = 19.969$, $p < .001$, with 70.2% of completers having a diagnosis compared to 37.5% of non-completers. Completers were also more likely to hear voices, 66.1% compared to 46.8% of non-completers, $\chi(1) = 7.405$, $p = .007$.

Internal Consistency of Measures

Due to an error in the survey, two of the six items on the BCSS positive-self subscale were missing. However, the four remaining items showed acceptable internal consistency (Cronbach's alpha = 0.79). The Cronbach's alpha coefficients for the other measures of predictor variables also indicated acceptable internal consistency, ranging from 0.79 to 0.93. The items of the CSSRS-SISS are hierarchically organised to approximate the construct of SI severity and as such were not subject to internal consistency analysis. The Cronbach's alpha value and descriptive statistics for the measures are presented in Table 2-2.

[Insert Table 2-2]

Correlational Analyses

All predictor variables had significant correlations with at least one outcome or predictor variable. However, the strength of the relationships were weak to moderate. Therefore, there were no initial concerns regarding multicollinearity for the regression model. Spearman's r_s correlations are provided in Table 2-3.

Negative-self schema was correlated moderately with defeat (r_s = 0.68, p < .001) and entrapment (r_s = 0.58, p < .001). Negative-other schema correlated weakly with defeat (r_s = 0.25, p = .005) and entrapment (r_s = 0.39, p < .001). Hypothesis one, that both negative-self and negative-other schema would positively correlate with defeat and entrapment, was fully supported: individuals with more negative beliefs about themselves and others felt more defeated and entrapped.

[Insert Table 2-3]

Suicidal ideation was weakly correlated with defeat (r_s = 0.28, p = .003), negative-other schema (r_s = 0.28, p = .001), positive-other schema (r_s = -0.28, p = .002), entrapment (r_s = 0.38, p < .001), negative-self schema (r_s = 0.38, p <.001), and positive-self schema (r_s = -0.32, p <.001). Suicidal behaviour was weakly correlated with gender (r_b = 0.27, p = .003), entrapment (r_b = 0.29, p = .001), negative-self schema (r_b = 0.26, p = .003), positive-self schema (r_b = -0.19, p = .039), and suicidal ideation (r_b = 0.30, p <.001).

Negative-self schema positively correlated with both suicidal ideation and attempts, whereby individuals with more negative beliefs about themselves expressed more severe SI and more SA. Negative-other schema positively correlated with SI, however, there was no relationship between negative-other schema and SA. Hypothesis two was, therefore, partially supported.

Multiple Linear Regression

The data were checked to ensure that the assumptions of a multiple linear regression model were met (Field, 2017). The CSSRS-SISS was linearly related to all predictors (assessed using scatterplots). No multicollinearity was present (indicated by variance inflation factors ranging from 1.09 to 3.06, and tolerance statistics ranging

between 0.33 and 0.92). Data were checked for outliers and influential cases. Less than 5% of cases (4/124, 4.03%) had standardised residuals outside of ±2, and none were outside ±3 and no influential cases were identified as indicated by Cook's distance. The residuals did not meet the assumption of homoscedasticity and were not normally distributed (indicated by histogram and P-P Plots). Therefore, a bootstrapped (Bias Corrected accelerated) multiple regression was conducted, as recommended by Field (2017).

The results of the bootstrapped multiple linear regression model are provided in Table 2-4. Model 1 (age, age of onset, gender, depression, defeat, and entrapment) was significant (R^2 = 0.163, F[6, 117] = 3.79, p = .002), accounting for 16.3% of the variance in SI. Once the negative BCSS subscales were included, model 2 significantly improved the ability to predict SI (R^2 = 0..229, F[2, 115] = 4.91, p = .009). Model 2 accounted for 22.9% of the variance in suicidal ideation at high levels of statistical significance (R^2 = 0.229, F[8, 115] = 4.26, p < .001), with negative schema explaining an additional 6.6% of the variance in SI. Using the more conservative adjusted R^2, negative schema accounts for an additional 5.5% of the variance. Hypothesis three, that negative schema would predict additional variance in SI after controlling for age, age of onset, gender, depression, defeat and entrapment, was therefore supported.

[Insert Table 2-4]

Bootstrapped (BCa) bivariate regressions were computed and compared to the adjusted associations in model 1 and 2 (Table 2-4). In bivariate regressions, depression (b = 0.066 [0.018, 0.116], p = .006), defeat (b = 0.036 [0.014, 0.055], p = .003), entrapment (b = 0.038 [0.017, 0.059], p <.001), negative-self (b = 0.094 [0.063, 0.127], p <.001) and negative-other schema (b = 0.062 [0.029, 0.093], p = .002) were all significant predictors

of SI. When controlling for other clinical and demographic variables in model 1, depression and defeat became non-significant and only entrapment was significant (b = 0.037 [0.014, 0.062], p = .006). In the final model, the variables that were found to be significant predictors of SI severity were entrapment (b = 0.030 [0.007, 0.059], p = 0.022) and negative-self schema (b = 0.072 [0.018, 0.130], p = 0.017). Negative-other schema was no longer significant in model 2.

Sensitivity analyses were performed to explore whether the inclusion of diagnosis and voice-hearing affected the model. A bootstrapped, forced entry linear regression model was conducted with the predictors of model 2 entered in step one. Diagnosis (coded as a binary categorical variable, 1 = diagnosis, 2 = no diagnosis) was entered in step two. Voice-hearing (coded as 1 = yes, 2 = no) was entered in step 3. The model did not meaningfully change at either step and is, therefore, robust (Appendix 2-F).

Mediation and Moderation Analyses

Mediation and moderation analyses were conducted using Hayes' PROCESS Macro (version 4.2) (Hayes, 2022). The first multiple mediation analysis investigated whether negative schema mediated the relationship between defeat and SI (see Figure 2-1). Higher defeat scores were associated with more negative-self (b = 0.3313, p < .001) and other (b = 0.1373, p = .007) schema (path a). In path b, more negative-self schema was associated with increased SI severity (b = 0.0653, p = .014). However, negative-other schema had a non-significant impact on SI severity (b = 0.0323, p = .116). When controlling for negative schema, the direct effect of defeat on SI (path c') was non-significant (b = 0.0103, p = .454). The relationship between defeat and SI was, therefore, fully mediated by negative schema.

[Insert Figure 2-1]

A second multiple mediation analysis investigated whether negative schema mediates the relationship between entrapment and SI (see Figure 2-2). Higher entrapment scores were associated with more negative-self (b = 0.239, p < .001) and other (b = 0.173, p < .001) schema (path a). In path b, negative-self schema was associated with increased SI severity (b = 0.0535, p = .023). Again, negative-other schema had a non-significant impact on SI (b = 0.0241, p = .261). When controlling for negative schema, the direct effect of entrapment on SI (path c') is non-significant (b = 0.0213, p = .057). The relationship between entrapment and SI is, therefore, also fully mediated by negative schema. Thus, hypothesis four is supported.

[Insert Figure 2-2]

In the moderation analysis, there was no significant interaction effect, b = 0.010, 95% CI [-0.0016, 0.0206], t = 1.692, p = .0932, indicating that the relationship between negative-self schema and SI is not moderated by positive-self schema and hypothesis five is therefore not supported.

Logistic Regression

An exploratory binary logistic regression analysis was conducted to explore the effects of age, age of onset, gender, depression, defeat, entrapment, negative-self, and negative-other on the likelihood of having attempted suicide. As such, a-priori power was not calculated, and the following results should be interpreted cautiously. One participant did not provide data for previous SA (n = 123). The data were checked on SPSS to ensure that the assumptions of a binary logistic regression model were met as recommended in Field (2017). Linearity of the logit was met, determined by non-significant interactions between each predictor and the log of itself (Hosmer & Lemeshow, 1989). No multicollinearity was present (indicated by variance inflation factors ranging from 1.148

to 3.100, and tolerance statistics ranging between 0.323 and 0.871). Data were checked for outliers and influential cases. Less than 5% of cases (2/123, 1.6%) had standardised residuals outside of ±1.96, and less than 1% (1/123, 0.8%) were outside ±3. No influential cases were identified as indicated by Cook's distance.

Results of the logistic regression are provided in Table 2-5. The Hosmer and Lemeshow test suggested a good fit to the data, (χ^2 (8) = 6.74, p =.565). The model was statistically significant (χ^2 (8) = 26.33, p <.001), with a pseudo R^2 explaining between 19.3% (Cox & Snell) and 26.3% (Nagelkerke) of the variance in suicide attempts and correctly classifying 72.4% of cases. The model correctly classifies 84.4% of attempters but only 52.2% of non-attempters. In the model, minority gender was significant (*B* = 1.60, *Wald* = 5.00, *p* = .025, *OR* = 4.96, 95% CI [1.22, 20.14]), indicating a trend where minoritised gender is associated with higher odds of previous suicide attempt. Entrapment was found to be significant (*B* = .063, *Wald* = 6.98, *p* = .008, *OR* = 1.07, 95% CI [1.02, 1.12]), indicating that increased entrapment is associated with higher odds of previous suicide attempt. Depression was also significant (*B* = -.10, *Wald* = 3.98, *p* = .046, *OR* = 0.91, 95% CI [0.82, 1.00]), indicating that increasing depression is associated with reduced odds of previous suicide attempt. Negative-self schema was approaching significance (*B* = .094, *Wald* = 3.72, *p* = .054, *OR* = 1.10, 95% CI [1.00, 1.21]). These findings indicate that minoritised gender, increased entrapment, and lower depression scores are potentially important factors in determining the likelihood of previous SA.

[Insert Table 2-7]

Discussion

This cross-sectional study examined the relationships between negative and positive schema and suicidality in PEP. Hypotheses were informed by the IMV model (O'Connor & Kirtley, 2018) of suicidality and the SAMS (Johnson et al., 2008). In support of hypothesis one, both negative-self and negative-other schema were positively correlated with defeat and entrapment. Hypothesis two was partially supported as higher negative-self schema correlated with greater severity of SI and previous SA, but higher negative-other schema correlated only with greater severity of SI. Hypothesis three was supported, as negative schema explained an additional 6.6% of the variance in SI, after controlling for age, age of onset, gender, depression, defeat, and entrapment. Negative schema fully mediated the relationship between both defeat and entrapment and SI severity, supporting hypothesis four. Contrary to hypothesis five, positive-self schema did not significantly moderate the relationship between negative-self schema and SI severity.

Schema and Defeat/Entrapment

Those with greater perceptions of defeat and entrapment endorsed more negative and less positive schema about themselves/others. These findings extend previous research in the general population (Sturman & Mongrain, 2008) and those at clinical high risk of psychosis (Stowkowy & Addington, 2011), demonstrating a relationship between appraisals of the self/others and defeat/entrapment in an adult psychosis sample.

Due to the cross-sectional design, it is unclear whether experiences of defeat/entrapment lead to more negative and less positive views of themselves/others, or if negative appraisals lead individuals to feel a general sense of defeat/entrapment. Sturman and Mongrain (2008) previously demonstrated that higher self-criticism and lower self-efficacy at baseline predicted heightened perceptions of defeat following a loss

in an athletic competition. This would suggest a role for interventions targeting self/other appraisals to buffer the development of subsequent defeat/entrapment. However, experimental and prospective designs have not been utilised to test this in PEP.

Suicidal Ideation

Correlational analyses found that greater SI severity was associated with higher negative-self and negative-other schema, lower positive-self and positive-other schema; consistent with previous research finding associations between core schema and SI in PEP (e.g., Collett et al., 2016; Cui et al., 2019; Fialko et al., 2006). Greater SI severity was also associated with higher levels of defeat and entrapment. This replicates previous research supporting the IMV model which found that defeat/entrapment are associated with SI (see O'Connor & Portzky, 2018) including within a psychosis population (Taylor et al. 2010). Interestingly, despite defeat and entrapment being core features of the motivational phase of the IMV model, negative-other, positive-other, and positive-self schema were as or more highly correlated with SI than defeat, and negative-self was more highly correlated with SI than both defeat and entrapment.

Negative schema accounted for a significant proportion of variance in the model of SI severity in PEP, over and above that which was explained by demographic and clinical variables, defeat, and entrapment. These findings extend previous correlational analyses and group comparisons by establishing a robust relationship between negative schema and SI. It is worth noting that the total model accounted for 22.9% of the variance in SI, which is lower than previous studies which explained roughly 50% (O'Neill et al., 2021). This may be due to differences in the suicidality measures. O'Neill et al. measure suicidality using the Suicide Probability Scale (Cull & Gill, 1982), which is comprised of four subscales (hopelessness, negative self-evaluation, hostility, and SI). As such, there

are conceptual similarities between two of the predictors in their model (hopelessness and self-hatred/inadequacy) and the outcome variable which may have inflated the amount of variance explained. While the total amount of variance explained in the current model is small, this may be expected given the complexity of the IMV model and the number of variables not included (e.g., pre-motivational factors).

Negative schema alone accounted for more than one quarter (6.6/22.9%, 28.8%) of the variance explained within the model, demonstrating its relative importance in predicting SI severity. Negative-other schema was not a direct predictor in the model, however. Negative-self schema and entrapment were the only significant independent predictors of SI in the current study. This suggests that negative appraisals of the self, specifically, are important determinants of SI, rather than overall negative cognitions. Efforts to reduce negative-self schema may therefore reduce SI severity in PEP.

Entrapment has repeatedly been found to predict SI (see Souza et al., 2024 review), including one study in PEP (Taylor et al., 2010), which was repeated in this sample. However, defeat was not a significant independent predictor of SI in the final model. Again, this appears to be consistent with the IMV model, which suggests that defeat indirectly influences SI via entrapment (e.g., Lucht et al., 2020; Scowcroft et al., 2019). An important finding was that the relationship between both defeat and SI, and entrapment and SI; was fully mediated by negative schema, with negative-self schema playing a particularly strong role. Negative-self schema appears to be an important explanatory factor underlying the relationship between defeat/entrapment and SI in PEP that has, thus far, been relatively underexplored and not fully recognised in theoretical models of suicidality.

Although the SAMS model (Johnson et al., 2010a) is referenced by the IMV, this is in relation to the buffering role of positive appraisals. Positive appraisals are suggested to be motivational moderators in the IMV model, wherein they buffer the transition between entrapment and SI. Previous research has found that positive self-appraisals moderate the relationship between stressful life events and SI in students (Johnson et al., 2010a), and hopelessness and SI in PEP (Johnson et al., 2010b). Positive-self schema, specifically, partially mediated the association between trauma and SI (Cui et al., 2019). However, in this study, positive-self schema did not significantly moderate the relationship between negative-self schema and SI. One reason why the expected moderation effects may not have been produced is that the analysis was adequately powered to detect a medium effect. The model reported an effect size of 0.02, indicative of a small effect in moderation analyses, and post-hoc analysis indicated that a sample of 395 would have been required to reliably detect this effect. Therefore, further research with larger samples may be warranted.

Suicidal Attempts

As far as the author is aware, this is the first study to demonstrate a significant association between negative-self schema and SA. In the correlational analyses, previous SA was significantly correlated with gender, entrapment , negative-self schema, positive-self schema, and suicidal ideation. Interestingly, negative-other schema was not significantly associated with SA. The findings support the IMV model and the ideation-to-action framework, demonstrating that SI and SA are related yet distinct concepts with different correlates and predictors (Klonsky & May, 2015). It may be that negative self-appraisals, but not negative appraisals of others, are related to the capability for suicide through their interactions with volitional moderators. However, due to the cross-sectional design, it is not possible to infer causality. It is equally plausible that previous SA may

result in greater negative-self schema. Further research utilising prospective designs is, therefore, warranted.

In the logistic regression model, minoritised gender, greater perceptions of defeat, and lower levels of depression predicted SA. It is important to note that the following results are exploratory and should be treated with greater caution. Gender was a particularly strong predictor, with people whose gender is minoritised being five times more likely to report previous SA. Previous studies have demonstrated that, within the general population, the lifetime suicide attempt rate among transgender persons ranges from 29 to 50% (Adams et al., 2017; Perez-Brumer et al., 2015; Virupaksha et al., 2016). However, within this sample, 88% of individuals with a minoritised gender reported previous SA.

Increased risk of suicidality in transgender people has largely been attributed to gender minority stress, whereby transgender people experience high levels of social (e.g., stigma, discrimination, violence) and internalised stressors (e.g., dysphoria, concealment) as a result of marginalising systems (Hendricks & Testa, 2012); consistent with the pre-motivational phase of the IMV model. The higher rates of SA in this study may suggest that people who experience stigmatisation and discrimination due to their gender identity *and* experience psychosis symptoms are more likely to feel defeated and entrapped, and to hold more negative views of themselves. Interestingly, however, minoritised gender predicted increased odds of SA but not SI in PEP. This could suggest that cisgender and transgender PEP felt equally defeated/entrapped, yet demonstrate a potential role of volitional moderators associated with minoritised gender in PEP. For example, the overall increased prevalence of suicide in the transgender population may result in greater exposure to suicide/suicidal behaviour in gender minority PEP. Further research is needed to investigate these relationships.

Greater levels of entrapment was an independent predictor of SA in PEP, conferring slightly increased odds of previous SA. This finding supports previous research in non-psychosis samples (O'Connor et al., 2013). Lower rates of depression conferred slightly increased odds of previous SA, conflicting previous reviews (e.g., Coentre et al., 2017). One reason for this finding may have been an overlap between measures of depression and negative symptoms of psychosis. For example, items such as 'I could not "get going"' could signify the presence of avolition/anhedonia. As discussed, negative symptoms have been shown to be significant protective factors for suicide behaviour in PEP (Huang et al., 2017). Finally, negative-schema did not predict SA in this study, however, negative-self schema was approaching significance in the model. As this was an exploratory analysis and A-Priori power was not calculated, there is a possibility of Type II error. Furthermore, owing to the dearth of research exploring the relationship between schema and SA in PEP, further research is needed to draw firm conclusions.

Strengths and Limitations

To the author's knowledge, this is the first study to test whether (1) negative schema predicted variance in SI in PEP, controlling for demographic and clinical variables, defeat, and entrapment; (2) negative schema mediated the relationship between defeat/entrapment and SI; and (3) there was an association between schema and SA. Although this study makes a unique contribution to the evidence base regarding factors which influence suicidality in PEP, it is not without limitations. Due to the cross-sectional nature of the study, it is not possible to draw conclusions about causality. It is plausible that the experience of SI may lead to greater negative-self appraisals. Furthermore, many potential risk factors were not included within the model (e.g., psychosis symptoms, medication, employment, socioeconomic status) which may be associated with negative schema, defeat/entrapment, and/or SI. While including these variables may have

strengthened the research method and analysis, the decision was weighed practically against the risk of burdening participants with increased items and the sample required to power an analysis with more predictors.

Online recruitment allowed for a global sample to be recruited which eliminated a geographical bias and made it more accessible in terms of time and financial cost to participants. Online methodology in psychological research has been recognised as beneficial as it offers an effective means of expanding the scale and scope of research (Kraut et al., 2004). However, a self-selecting sample could have introduced selection bias. For example, whilst there was a varied age range (18-65), the median age of participants was 29.5 years and was not normally distributed (with a greater number of younger participants) and the survey required a level of computer literacy. Therefore, the results may not be representative of the entire PEP population. A further important consideration in online psychosis research is that participants have self-selected for the study, demonstrating a level of insight into their psychosis. The association between increased insight and suicidality in PEP is debated, with a systematic review finding one third of studies report significant findings (López-Moríñigo et al., 2012). However, participants were recruited from online forums/groups related to psychosis and may, therefore, be further since diagnosis and have some degree of acceptance, and potentially hold more positive or less negative views of others than those not seeking social support.

Clinical Implications

The finding that greater negative-self schema has a robust relationship with increased SI severity in PEP has important implications for future clinical practice. Effective, evidence-based suicide interventions in this population are limited (Bornheimer et al., 2020). However, as a modifiable risk factor, efforts to reduce

individuals' negative self-appraisals may provide a promising target for therapeutic interventions to reduce suicide risk in PEP. A systematic review (Taylor et al., 2017) has suggested that schema therapy results in reduced maladaptive schemas as improved symptoms for those diagnosed with personality disorders. The evidence for other psychiatric diagnoses, including SSDs, is sparse. However, the findings of this study provide a rationale for schema therapy as a targeted intervention to reduce suicide risk in PEP. Furthermore, many established therapeutic models (e.g., Cognitive Behavioural Therapy, Compassion Focused Therapy, Cognitive Analytic Therapy) can help people relate to themselves more positively and may be potential interventions for PEP experiencing SI.

However, while negative schema predicted a significant portion of the explained variance in SI in PEP, recommendations at the individual psychological level alone are unlikely to solve the problem of suicide prevalence in PEP. It is important to also consider the influence of the wider sociocultural context in which PEP are situated and the causal mechanisms of negative self-appraisals and entrapment. One such mechanism is proposed to be the impact of stigma and discrimination. High rates of stigma and discrimination have been reported in quantitative and qualitative studies of people with psychosis (Hampson et al., 2020; Kinson et al., 2018), and public stigma has been associated with increased self-stigma and negative self-concept in PEP (Pyle & Morrion, 2013; Vass et al., 2017); wherein PEP become aware of stereotypes held by the general population and internalise such negative appraisals. Public and internalised stigma can affect many aspects of the lives of PEP including employment and social relationships (Hampson et al., 2016; Harris et al., 2021; Lasalvia et al., 2014), which may result in increased entrapment and negative self-appraisals. Individualised interventions should, therefore, be an adjunct to public information campaigns to reduce discriminatory

attitudes and behaviours towards PEP in order to improve self-appraisals and reduce perceptions of defeat/entrapment systemically.

Furthermore, the finding that the dual stigma of minoritised gender and psychosis confers significantly increased odds of previous SA suggests the need for improvements to interventions for transgender and/or non-binary PEP. Unfortunately, limited research exists regarding mental health interventions for transgender/non-binary PEP (Barr et al., 2021), particularly with regards to suicide. In their review, Barr et al. highlight the importance of clinicians endorsing gender-affirming care, increasing personal understanding of minoritised gender identities, and improving access to services for transgender PEP.

Future Research

Although this study contributes to the evidence base, there remains a lack of research testing the theoretical mechanisms underpinning the IMV model in PEP. Particularly, the use of longitudinal designs to establish causal relationships between core schema, defeat/entrapment, and SI would make a significant contribution to the evidence base. Furthermore, experimental designs aiming to reduce negative-self and increase positive-self appraisals could evidence the impact of core schema as a targeted intervention for SI in PEP. As highlighted previously, the sociocultural context is also highly relevant to PEP. As such, future studies may benefit from considering factors such as income, public and internalised stigma, and discrimination alongside schema and SI. In addition to developing a firmer understanding of the risk factors for suicidality in PEP, this could help evidence the need for systemic change to support PEP. It is noted that no other studies have explored the relationship between core schema and SA in a psychosis population, and the evidence base would benefit from further studies to replicate and

extend upon the exploratory findings demonstrated within this study. Finally, it would be interesting for future research to explore whether these findings are replicated in non-psychosis samples or whether there exists a unique relationship between negative-self schema and SI in PEP.

Conclusion

This study demonstrated that negative schema (particularly negative-self schema) is an important predictor of SI in PEP after controlling for demographic and clinical variables, defeat, and entrapment, and mediate the relationship between defeat/entrapment and SI. Positive-self schema did not moderate the relationship between negative-self schema and SI and negative schema did not predict odds of previous SA in PEP, however, further research is needed to draw firm conclusions. Minoritised gender appears to be a strong predictor of SA in PEP, potentially owing to the impact of multiple minority stress. It may be beneficial for interventions for PEP to consider individual and systemic factors, although further research would be needed to make strong clinical recommendations.

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Tables

Table 2-1

Sample Characteristics

Demographic / Clinical Characteristic	N	%	Median (Range)
Age			29.5 (18-65)
Gender (Minority Gender)	25	20.2%	
Man	46	37.1%	
Woman	53	42.7%	
Trans Man	11	8.9%	
Trans Woman	5	4.0%	
Non-Binary	9	7.3%	
Ethnicity[a]			
White	89	71.8%	
Black/African/Caribbean	8	6.5%	
Asian (Indian, Pakistani, Bangladeshi, Chinese, any other Asian background)	8	6.5%	
Mixed two or more ethnic groups	12	9.7%	
Other (Arab or any others)	7	5.6%	
Prefer not to say	2	1.6%	
Marital Status			
Married	25	20.2%	
Living With a Partner	25	20.2%	
Widowed	0	0%	
Divorced/Separated	6	4.8%	
Never Married	68	54.8%	
Diagnosis[a]	87	70.2%	
Schizophrenia	26	21.0%	
Schizoaffective Disorder	39	31.5%	
Schizotypal Disorder	4	3.2%	
Acute and Transient Psychotic Disorder	8	6.5%	
Delusional Disorder	3	2.4%	
Other Specified Schizophrenia or Primary Psychotic Disorder	10	8.1%	
No Formal Diagnosis	37	29.8%	
Age of Onset			19 (2-48)
Voice Hearing (Yes)	82	66.1%	

[a]N > 124 as multiple options selected

Table 2-2

Internal Consistency Values and Descriptive Statistics of Measures

Measure	Cronbach's alpha (α)	Mean (SD)	Median (range)	Frequency (%)
CESD	.79	19.7 (5.7)	20 (3-30)	
Defeat Scale	.93	43.1 (12.4)	45 (10-64)	
Entrapment Scale	.93	40.0 (14.9)	42 (2-64)	
BCSS Negative-self	.84	12.3 (6.2)	12.5 (1-24)	
BCSS Negative-other	.93	11.2 (6.8)	12 (0-24)	
BCSS Positive-self	.79	5.2 (3.7)	5 (0-16)	
BCSS Positive-other	.87	7.6 (4.7)	7 (0-24)	
CSSRS SI Severity Scale		3.5 (1.5)	4 (0-5)	
AMPS SA item (yes)				77/123 (62.6%)

Table 2-3

Spearman's Rho Correlation Matrix Between Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. Age of onset	.39**	-									
3. Gender (r_{rb})	-.18*	-.20*	-								
4. Depression	-.07	-.18*	.12	-							
5. Defeat	-.10	-.11	.15	.55**	-						
6. Entrapment	-.17	-.21*	.16	.59**	.69**	-					
7. Negative-self	-.19*	-.19*	.23**	.46**	.68**	.58**	-				
8. Negative-other	-.10	-.23**	-.09	.24**	.25**	.39**	.43**	-			
9. Positive-self	.14	.11	-.21*	-.34**	-.58**	-.41**	-.66**	-.22*	-		
10. Positive-other	-.00	.20*	.01	-.31**	-.31**	-.31**	-.35**	-.48**	.37**	-	
11. Suicidal Ideation	-.04	-.08	.03	.16	.27**	.38**	.38**	.28**	-.32**	-.28**	-
12. Suicide Attempt (r_{rb})	-.07	-.11	.27**	.03	.19	.29**	.26**	.15	-.19*	-.15	.30**

Note. r_{rb} = rank biserial.
*p<.05, **p<.01 (two-tailed)

Table 2-4

Bootstrapped Multiple Linear Regression Model with CSSRS-SISS as Outcome, Comparing Bivariate Regression with Multiple Regression

Predictor	Bivariate		Adjusted			
			Model 1		Model 2	
	Unstandardised B (95% CI)	*p*	Unstandardised B (95% CI)	*p*	Unstandardised B (95% CI)	*P*
Age	0.005 (-0.024, 0.028)	.712	0.016 (- 0.018, 0.039)	.260	0.019 (-0.012, 0.041)	.196
Age of Onset	-0.014 (-0.060, 0.026)	.327	-0.007 (-0.038, 0.034)	.702	0.001 (-0.031, 0.039)	.975
Gender	0.055 (- 0.487, 0.580)	.873	-0.129 (-0.815, 0.520)	.699	-0.179 (-0.842, 0.481)	.592
Depression	0.066 (0.018, 0.116)	.006	0.003 (-0.057, 0.060)	.938	-0.008 (-0.062, 0.054)	.795
Defeat	0.036 (0.014, 0.055)	.003	0.004 (-0.024, 0.031)	.766	-0.013 (-0.045, 0.021)	.433
Entrapment	0.038 (0.017, 0.059)	<.001	0.037 (0.014, 0.062)	.006	0.030 (0.007, 0.059)	.022
Negative-self	0.094 (0.063, 0.127)	<.001	-	-	0.072 (0.018, 0.130)	.017
Negative-other	0.062 (0.029, 0.093)	.002	-	-	0.018 (-0.023, 0.056)	.420
Model fit indices						
R^2 (Adj. R^2)			.163 (.120)		.229 (.175)	
Std. Error			1.372		1.328	
F			3.792	.002	4.261	<.001
F Change					4.908	.009

Table 2-5

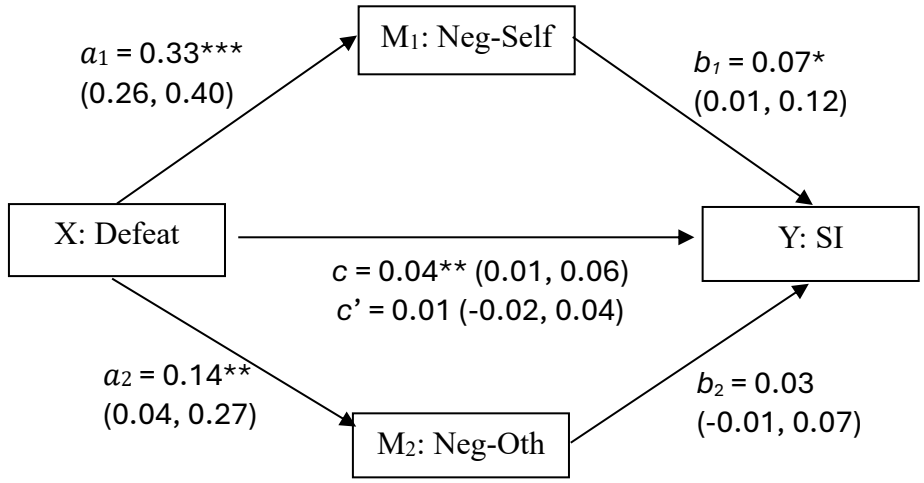
Results of Binary Logistic Regression Analysis with APMS as Outcome

Variable	OR (95% CI)	*b*	*p*			
Age	1.013 (0.967, 1.060)	0.012	.595			
Age of onset	0.989 (0.936, 1.045)	-0.011	.701			
Gender	4.955 (1.219, 20.144)	1.600	.025			
Depression	0.905 (0.820, 0.998)	-0.100	.046			
Defeat	0.962 (0.909. 1.018)	-0.039	.176			
Entrapment	1.065 (1.016, 1.116)	0.063	.008			
Negative-self	1.099 (0.998, 1.210)	0.094	.054			
Negative-other	1.005 (0.933, 1.082)	0.005	.896			
Model fit indices				*-2LL*	$\chi 2$	P
				136.28	26.33	<.001

Figures

Figure 2-1

Multiple Mediation: Relationship Between Defeat and SI, Mediated by Negative Schema

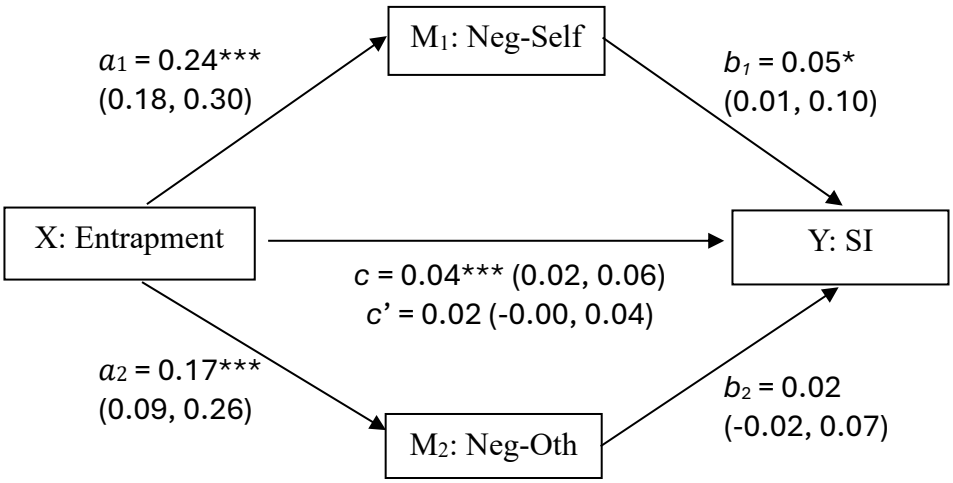


Note. Paths are unstandardised coefficients with 95% CI in parentheses.

* $p < .05$ ** $p < .01$, *** $p < .001$

Figure 2-2

Multiple Mediation: Relationship Between Entrapment and SI, Mediated by Negative Schema



Note. Paths are unstandardised coefficients with 95% CI in parentheses.

* $p < .05$ ** $p < .01$, *** $p < .001$

Appendix 2-A: Participant Information Sheet and Consent Form (Qualtrics)

Lancaster University

Participant information sheet

Risk Factors for Suicide in People with Experiences of Psychosis

Participant Information

Before you decide to take part in this research, it is important for you to understand why the research is being done and what it will involve. Please read the following information carefully and discuss it with others if you wish. A member of the team can be contacted if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of this research?

Suicide is a major public health problem. We would like to understand more about the relationship between suicidal thinking and behaviour and experiences of psychosis, including those who do and do not hear voices. The data collected in this research will be used in two studies.

Study title 1) Positive and Negative Schema, Defeat, Entrapment and Suicidal Thinking in People with Experiences of Psychosis.

Study title 2) Self-Attacking Thoughts, Critical Voices and Suicidal Thinking in People who Hear Voices.

Do I have to take part?

You do not have to take part in this research. If you do choose to take part in this research, you can still withdraw at any point by exiting the website link. Deciding to not take part in this research or withdrawal at any point will involve no penalty or loss to you, now or in the future. Once you have completed and submitted the questionnaire, it will not be possible for the researchers to withdraw your answers as these are anonymous.

What will happen if I take part?

If you decide to take part in this research, you will be asked a series of questionnaires which will take approximately 15 minutes to complete. To answer the questions, you will be asked to select the answer that best describes your experiences. All of your responses to the questions are collected anonymously.

Are there possible disadvantages and/or risks in taking part?

The questions in the survey will ask about several sensitive topics. Some of the questions ask about recent experiences of suicidal thinking and/or behaviour. This has the potential to increase attention to suicidal thoughts and/or induce negative emotions.

Other questions relate to topics that may have the potential to bring about feelings of discomfort through increased attention toward these experiences. These include questions relating to depression symptoms, feeling defeated or entrapped, and how you relate to yourself, to others, and to your voices (if applicable).

What are the possible benefits of taking part?

While there is likely to be no immediate direct benefit to you, taking part in this research may indirectly benefit you and the population of people who have experiences of psychosis and suicidal thinking and behaviour. Contributing to the scientific evidence base may inform available treatments and/or improve understanding of risk factors for suicide.

Will my taking part in this project be kept confidential?

All information collected will be kept strictly confidential. All data will be identified only by a code and the files on the computer will be encrypted, so no-one other than the researchers will be able to access them. The computer itself is also password protected.

What will happen to the results of the research project?

The results will be written up into a research report. It may also be submitted for publication in an academic journal. You and your information will not be identifiable in any published material.

If you would like to receive a summary of the research findings, you can opt to provide your email address at the end of the questionnaire. If you choose to receive this summary, your email address is recorded separately from your responses to the questionnaires, thereby maintaining the anonymity of the data you provide. Participant email addresses will be stored in a password protected file and retained until this summary has been sent out. Once the study is completed, contact details will be deleted and this will be confirmed in writing (by email) that this action has been completed. Your email address will not be used for any other purpose. If you provide an email address to receive a summary of the study and later change your mind, you may contact us to delete this information.

Ethical review of the study

The project has been reviewed by Lancaster University Research Ethics Committee.

Research team

The research team has three members:

Wren Little (Trainee Clinical Psychologist, Lancaster University): w.little1@lancaster.ac.uk

Myles Sammon (Trainee Clinical Psychologist, Lancaster University): m.sammon@lancaster.ac.uk

Dr James Kelly (Clinical Psychologist, Researcher, Lancaster University): j.kelly@lancaster@ac.uk

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Dr Ian Smith (Consultant Clinical Psychologist): i.smith@lancaster.ac.uk

Tel: 01524 592282

If you wish to speak to someone outside of the Clinical Psychology Doctorate, you may also contact:

Dr Laura Machin (Chair of FHM REC, Lancaster University): l.machin@lancaster.ac.uk

Tel: 01524 594973

GDPR

"Lancaster University will be the data controller for any personal information collected as part of this study. Under the GDPR you have certain rights when personal data is collected about you. You have the right to access any personal data held about you, to object to the processing of your personal information, to rectify personal data if It's inaccurate, the right to have data about you erased and, depending on the circumstances, the right to data portability. Please be aware that many of these rights are not absolute and only apply in certain circumstances. If you would like to know more about your rights in relation to your personal data, please speak to the researcher on your particular study.

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage: www.lancaster.ac.uk/research/data-protection"

Lancaster University is the sponsor for the study based in England. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. Lancaster University will keep identifiable information about you for 10 years after the study has finished/is published.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

Myles Sammon and Wren Little will collect information from you for this research study in accordance with our instructions.

Wren Little and Myles Sammon will use your name and contact details to contact you about the research study, to oversee the quality of the study. Individuals from Lancaster University and regulatory organisations may look at your

research records to check the accuracy of the research study. The only people in Lancaster University who will have access to information that identifies you will be people who need to contact you to audit the data collection process.

Thank you for taking the time to read this information sheet.

Consent Form

Consent Form

We are asking if you would like to take part in a research project investigating suicidal thinking and behaviour in people who have experiences of psychosis, including those who do and do not hear voices. Before you consent to participating in the study, we ask that you read the participant information sheet on the previous page. If you have any questions or queries before signing the consent form, please speak to the principal investigators, Wren Little and Myles Sammon.

By proceeding to the survey, you confirm that:

- You have read the participant information sheet and understand what is expected of you within this study
- You understand that any responses/information you give will remain confidential and your data will be stored securely
- Your participation is voluntary
- You consent for the information you provide to be discussed with the research supervisor (Dr James Kelly) at Lancaster University
- You consent that the data will be pooled with other participants' data and published
- You consent to Lancaster University keeping the anonymised data for a period of 10 years after the study has finished
- By clicking on the arrow below, **you consent to taking part in the current study.**

Inclusion criteria questions

Are you aged 18 years or over?

No

Yes

Have you experienced suicidal thinking or behaviour in the past 6 months?

Appendix 2-B: Online Questionnaire

Inclusion criteria questions

Are you aged 18 years or over?

No

Yes

Have you experienced suicidal thinking or behaviour in the past 6 months?

No

Yes

Hearing voices question

Do you hear voices that other people don't? (Auditory Verbal Hallucinations)

No

Yes

Psychosis Question

Please select the diagnosis/diagnoses you have received from the list below (if applicable)

Schizophrenia

Schizoaffective Disorder

Schizotypal Disorder

Acute and Transient Psychotic Disorder

Delusional Disorder

Other Specified Schizophrenia or Primary Psychotic Disorder

No Formal Diagnosis Given of Psychosis

CAPE-P15

In the past 3 months have you. . .

	Never	Sometimes	Often	Nearly always
felt as if people seem to drop hints about you or say things with a double meaning?	○	○	○	○
felt as if some people are not what they seem to be?	○	○	○	○
felt that you are being persecuted in anyway?	○	○	○	○
felt as if there is a conspiracy against you?	○	○	○	○

	Never	Sometimes	Often	Nearly always
felt that people look at you oddly because of your appearance?	○	○	○	○
felt as if electrical devices such as computers can influence the way you think?	○	○	○	○
felt as if the thoughts in your head are being taken away from you?	○	○	○	○
felt as if the thoughts in your head are not your own?	○	○	○	○
[thoughts] ever been so vivid that you were worried other people would hear them?	○	○	○	○
heard your thoughts being echoed back at you?	○	○	○	○
felt as if you are under the control of some force or power other than yourself?	○	○	○	○
felt as if a double has taken the place of a family member, friend or acquaintance?	○	○	○	○
heard voices when you are alone?	○	○	○	○
heard voices talking to each other when you are alone?	○	○	○	○
seen objects, people or animals that other people can't see?	○	○	○	○

The Community Assessment of Psychic Experiences - Positive Scale (CAPE-P15; Capra et al., 2014)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Demographic Information

What is your age (in years)?

What best describes your ethnic origin?

White
Black/African/Caribbean
Asian (Indian, Pakistani, Bangladeshi, Chinese, any other Asian background)
Mixed two or more ethnic groups
Other (Arab or any others)
Prefer not to say

What best describes your gender?

Man
Woman
Trans Man
Trans Woman
Non-binary / other

What is your current marital status?

Married
Living with a partner
Widowed
Divorced/Separated
Never been married

How old were you when you first experienced psychosis? (If unsure, please give your closest guess)

Voice characteristics

How old were you when you first heard a voice that others don't? (If unsure, please give your closest guess)

The following questions ask about the frequency, volume and clarity of your voices

	Very frequent (every hour)	Fairly frequent (several times a day but not every hour)	Average (once a day)	Fairly infrequent (several times this week but not every day)	Absent (not at all lately)
Over the last few days my voices have been	○	○	○	○	○

	Very loud	Fairly loud	Average	Fairly quiet	Very quiet
Over the last few days my voices have been	○	○	○	○	○

	Very clear	Fairly clear	Average	Fairly mumbled	Very mumbled
Over the last few days my voices have been	○	○	○	○	○

BAVQ-R

There are many people who hear voices. It would help us to find out how you are feeling about your voices by completing this questionnaire. Please read each statement and select the option which best describes the way you have been feeling in the past week.

If you hear more than one voice, please complete the form for the voice which is dominant.

	Disagree	Unsure	Slightly agree	Strongly agree
My voice is punishing me for something I have done.	○	○	○	○
My voice is persecuting me for no good reason.	○	○	○	○
My voice is evil.	○	○	○	○

	Disagree	Unsure	Slightly agree	Strongly agree
My voice wants to harm me.	○	○	○	○
My voice wants me to do bad things.	○	○	○	○
My voice is trying to corrupt or destroy me.	○	○	○	○

Questions from the Revised Beliefs about Voices Questionnaire (BAVQ-R) (Chadwick et al., 2000)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

FSCRS

When things go wrong in our lives or don't work out as we hoped, and we feel we could have done better, we sometimes have negative and self-critical thoughts and feelings. These may take the form of feeling worthless, useless or inferior etc. However, people can also try to be supportive of themselves. Below are a series of thoughts and feelings that people sometimes have. Read each statement carefully and select the option which best describes how much each statement is true for you. Please use the scale below.

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
I have become so angry with myself that I want to hurt or injure myself.	○	○	○	○	○
I have a sense of disgust with myself.	○	○	○	○	○
I stop caring about myself	○	○	○	○	○

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
I call myself names.	○	○	○	○	○
I do not like being me.	○	○	○	○	○

Questions from the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS) (Gilbert, 2004)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

FVSCRS

When voice hearers experience things going wrong or not working out, their voices can become negative and critical. At times, these negative voices can make people feel worthless, useless or inferior. However, we know that voices can also be supportive. Below are a series of thoughts and feelings that voices hearers sometimes have about their voices. Please read each statement carefully, and circle the number that best describes how much each statement is true of your voice.

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
My voice becomes so angry with me that it wants to hurt me or injure me.	○	○	○	○	○

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
My voice feels disgusted with me.	○	○	○	○	○
My voice can stop caring about me.	○	○	○	○	○

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
My voice calls me names.	○	○	○	○	○
My voice does not like me.	○	○	○	○	○

Questions from the forms of Voice-Criticising/Attacking and Voice Reassuring Scale (FVCRS)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

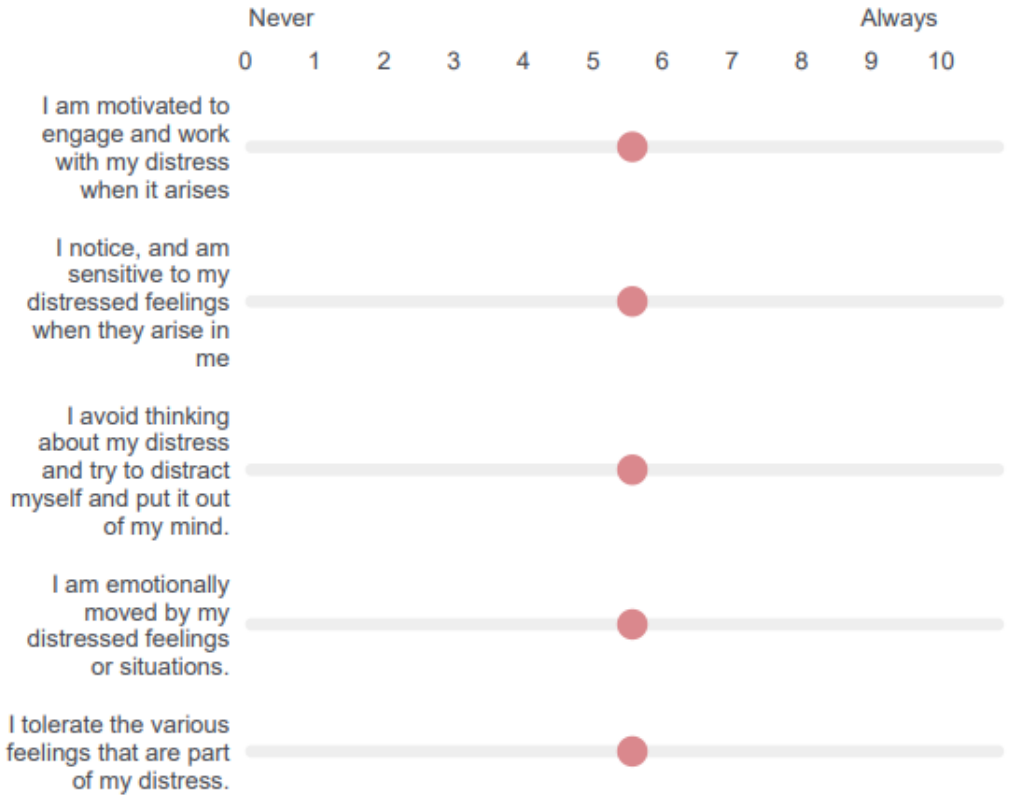
Self-compassion subscale of CEAS

When things go wrong for us and we become distressed by setbacks or disappointments, we may cope with these in different ways. We are interested in the degree to which people can be compassionate with themselves when they become distressed.

Please rate the items using the following rating scale:
Never Always
1 2 3 4 5 6 7 8 9 10
Please make sure that you click a response for each question

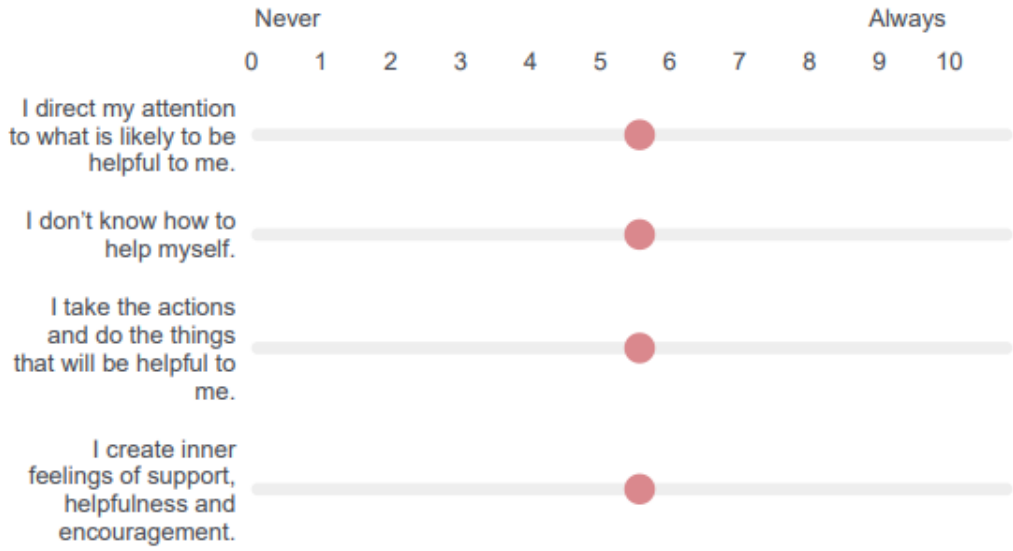
Section 1 – These are questions that ask you about how motivated you are, and able to engage with distress when you experience it.

So: When I'm distressed or upset by things…



Section 2 – These questions relate to how you actively cope in compassionate ways with emotions, thoughts and situations that distress you.

So: When I'm distressed or upset by things…



Compassionate Engagement and Action Scales (CEAS) (Gilbert et al., 2017).

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Entrapment Scale

For each of the following attitude statements indicate the extent to which you think it represents your own view of yourself, using the scale below. Read each item carefully. Please do not omit any item.

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
I am in a situation I feel trapped in	○	○	○	○	○
I have a strong desire to escape from things in my life	○	○	○	○	○
I am in a relationship I can't get out of	○	○	○	○	○

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
I often have the feeling that I would just like to run away	○	○	○	○	○
I feel powerless to change things	○	○	○	○	○
I feel trapped by my obligations	○	○	○	○	○

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
I can see no way out of my current situation	○	○	○	○	○
I would like to get away from other more powerful people in my life	○	○	○	○	○
I have a strong desire to get away and stay away from where I am now	○	○	○	○	○
I feel trapped by other people	○	○	○	○	○
I want to get away from myself	○	○	○	○	○
I feel powerless to change myself	○	○	○	○	○

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me

I would like to escape from my thoughts and feeling	○	○	○	○	○
I feel trapped inside myself	○	○	○	○	○
I would like to get away from who I am and start again	○	○	○	○	○
I feel I'm in a deep hole I can't get out of	○	○	○	○	○

Entrapment Scale (Gilbert & Allan, 1998)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide

additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Defeat Scale

Below is a series of statements, which describe how people can feel about themselves. Read each item carefully and select the statement that best describes how you have felt in the last 7 days. Please do not omit any item.

	Never	Rarely	Sometimes	Mostly (a lot)	Always
I feel that I have not made it in life	○	○	○	○	○
I feel that I am a successful person	○	○	○	○	○
I feel defeated by life	○	○	○	○	○
I feel that I am basically a winner	○	○	○	○	○
I feel that I have lost my standing in the world	○	○	○	○	○
I feel that life has treated me like a punch bag	○	○	○	○	○
	Never	Rarely	Sometimes	Mostly (a lot)	Always
I feel powerless	○	○	○	○	○

I feel that my confidence has been knocked out of me	○	○	○	○	○
I feel able to deal with whatever life throws at me	○	○	○	○	○
I feel that I have sunk to the bottom of the ladder	○	○	○	○	○
I feel completely knocked out of action	○	○	○	○	○
I feel that I am one of life's losers	○	○	○	○	○
	Never	Rarely	Sometimes	Mostly (a lot)	Always
I feel that I have given up	○	○	○	○	○

	Never	Rarely	Sometimes	Mostly (a lot)	Always
I feel down and out	○	○	○	○	○
I feel that I have lost important battles in life	○	○	○	○	○
I feel that there is no fight left in me	○	○	○	○	○

Defeat Scale (Gilbert & Allan, 1998)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Schema: Brief Core Schema Scales

Schema: Brief Core Schema Scales

This questionnaire lists beliefs that people can hold about themselves and other people. Please indicate how strongly you hold the belief, if at all, using the options below. Try to judge the beliefs on how you have generally, over time, viewed yourself and others. Do not spend too long on each belief. There are no right or wrong answers and the first response to each belief is often the most accurate.

	I don't hold this belief	Believe it slightly	Believe it moderately	Believe it very much	Believe it totally
I am unloved	○	○	○	○	○
I am worthless	○	○	○	○	○
I am weak	○	○	○	○	○
I am vulnerable	○	○	○	○	○
I am bad	○	○	○	○	○
I am a failure	○	○	○	○	○
	I don't hold this belief	Believe it slightly	Believe it moderately	Believe it very much	Believe it totally
I am talented	○	○	○	○	○
I am successful	○	○	○	○	○

	I don't hold this belief	Believe it slightly	Believe it moderately	Believe it very much	Believe it totally
I am good	○	○	○	○	○
I am interesting	○	○	○	○	○
Other people are hostile	○	○	○	○	○
Other people are harsh	○	○	○	○	○
	I don't hold this belief	Believe it slightly	Believe it moderately	Believe it very much	Believe it totally
Other people are unforgiving	○	○	○	○	○
Other people are bad	○	○	○	○	○
Other people are devious	○	○	○	○	○
Other people are nasty	○	○	○	○	○
Other people are fair	○	○	○	○	○
Other people are good	○	○	○	○	○

	I don't hold this belief	Believe it slightly	Believe it moderately	Believe it very much	Believe it totally
Other people are trustworthy	○	○	○	○	○
Other people are accepting	○	○	○	○	○
Other people are supportive	○	○	○	○	○
Other people are truthful	○	○	○	○	○

Brief Core Schema Scales (Fowler et al., 2006)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10)

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by selecting the appropriate option for each question.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
I was bothered by things that usually don't bother me	○	○	○	○
I had trouble keeping my mind on what I was doing.	○	○	○	○
I felt depressed	○	○	○	○
I felt that everything I did was an effort	○	○	○	○
I felt hopeful about the future	○	○	○	○

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
I felt fearful	○	○	○	○
My sleep was restless	○	○	○	○
I was happy	○	○	○	○
I felt lonely	○	○	○	○
I could not "get going"	○	○	○	○

Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10) (Radloff, 1997)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

CSSRS + APMS(1 item)

The following questions will ask about the severity, intensity, frequency and duration of suicidal thinking and behaviour

Have you wished you were dead or wished you could go to sleep and not wake up?

Have you actually had any thoughts of killing yourself?

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Have you been thinking about how you might do this?
E.g. "I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it….and I would never go through with it."

Have you had these thoughts and had some intention of acting on them?
As opposed to "I have the thoughts but I definitely will not do anything about them."

Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?

Have you ever done anything, started to do anything, or prepared to do anything to end your life?
Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc.

Columbia–Suicide Severity Rating Scale (C-SSRS) (Posner et al., 2011)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

If YES: Was this within the past three months?

Columbia–Suicide Severity Rating Scale (C-SSRS) (Posner et al., 2011)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?

Adult Psychiatric Morbidity Survey Q – DSH4 (McManus et al., 2007)

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

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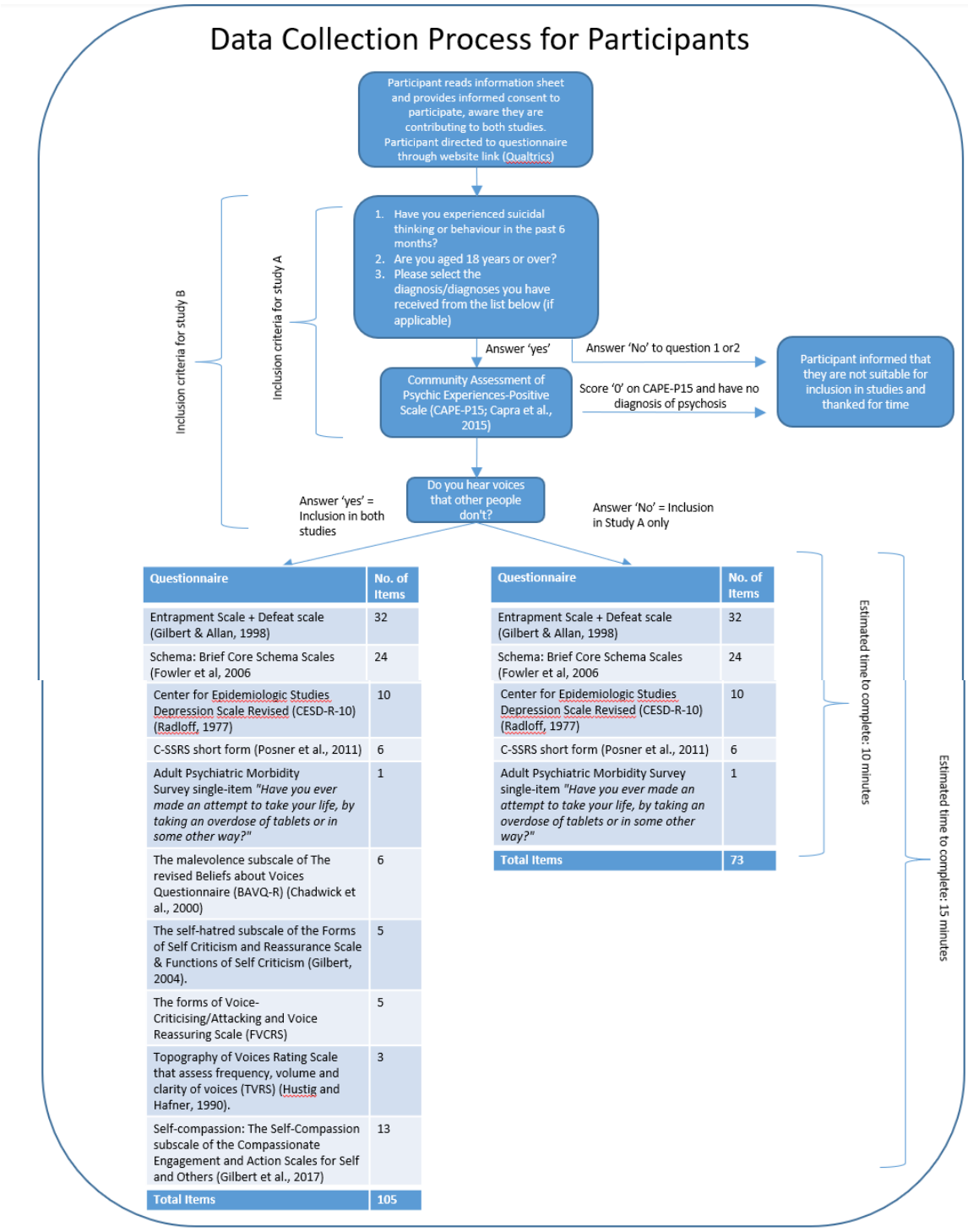
Appendix 2-C: Joint Data Collection Flowchart



Questionnaire	No. of Items
Entrapment Scale + Defeat scale (Gilbert & Allan, 1998)	32
Schema: Brief Core Schema Scales (Fowler et al, 2006	24
Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10) (Radloff, 1977)	10
C-SSRS short form (Posner et al., 2011)	6
Adult Psychiatric Morbidity Survey single-item *"Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?"*	1
The malevolence subscale of The revised Beliefs about Voices Questionnaire (BAVQ-R) (Chadwick et al., 2000)	6
The self-hatred subscale of the Forms of Self Criticism and Reassurance Scale & Functions of Self Criticism (Gilbert, 2004).	5
The forms of Voice-Criticising/Attacking and Voice Reassuring Scale (FVCRS)	5
Topography of Voices Rating Scale that assess frequency, volume and clarity of voices (TVRS) (Hustig and Hafner, 1990).	3
Self-compassion: The Self-Compassion subscale of the Compassionate Engagement and Action Scales for Self and Others (Gilbert et al., 2017)	13
Total Items	**105**

Questionnaire	No. of Items
Entrapment Scale + Defeat scale (Gilbert & Allan, 1998)	32
Schema: Brief Core Schema Scales (Fowler et al, 2006	24
Center for Epidemiologic Studies Depression Scale Revised (CESD-R-10) (Radloff, 1977)	10
C-SSRS short form (Posner et al., 2011)	6
Adult Psychiatric Morbidity Survey single-item *"Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?"*	1
Total Items	**73**

Study A: "Positive and Negative Schema, Defeat, Entrapment and Suicidal Thinking in People with Experiences of Psychosis"
Study B: "Self-Attacking Thoughts, Critical Voices and Suicidal Thinking in People who Hear Voices"

Appendix 2-D: Diagnosis and Non-Diagnosis Comparisons

Table A1

Comparisons of Participants With and Without SSD Diagnosis

Variable	Median (range)		Mann Whitney U	*p*
	Diagnosis	Non-diagnosis		
Age	30 (18-59)	26 (18-65)	1208.5	.028
Age of Onset	19 (2-48)	17 (5-37)	1436.5	.344
Positive Symptoms [ab]	34 (15-54)	30 (18-51)	980.5	.186
Depression	20 (3-30)	20 (6-30)	1471	.449
Defeat	44 (10-64)	47 (26-64)	1328	.118
Entrapment	42 (2-64)	43 (14-64)	1378	.206
Negative-self Schema	12 (1-24)	13 (3-23)	1333	.131
Positive-self Schema	5 (0-16)	5 (0-14)	1464	.425
Negative-other Schema	11 (0-24)	12 (0-24)	1581	.876
Positive-other Schema	7 (0-24)	7 (0-17)	1599	.954
SI	4 (0-5)	4 (0-5)	1477	.456
	N (%)			
	Diagnosis	Non-diagnosis	Chi-Square	
Gender (minority)	19/87 (21.8%)	6/37 (16.2%)	0.510	.475
Voice-hearing (yes)	69/87 (79.3%)	13/37 (35.1%)	22.617	<.001
SA (yes)	58/86 (67.4%)	19/37 (51.4%)	2.861	.065

[a] Total CAPE-P15 score [b] N = 100 due to 24 participants completing the study prior to the amendment and inclusion of the CAPE-P15.

Appendix 2-E: Completer and Non-Completer Comparisons

Table B1

Comparisons of Completers Versus Non-Completers

Variable	Non-completers		Completers[a]			
	N	Median (range)	Median (range)		Mann Whitney U	*p*
Age	35	27 (18-59)	29.5 (18-65)		1708	.055
Age of Onset	25	16 (1-32)	19 (2-48)		1208	.082
Defeat	17	43 (30-64)	45 (10-64)		1003.5	.749
Entrapment	17	38 (12-60)	42 (2-64)		1042	.939
Negative-self	14	13.5 (4-24)	12.5 (1-24)		774.5	.509
Positive-self	15	3 (0-10)	5 (0-16)		745.5	.208
Negative-other	15	13 (7-21)	12 (0-24)		714.5	.143
Positive-other	15	6 (1-12)	7 (0-24)		771	.279
Depression	11	19 (12-24)	20 (3-30)		525	.206
SI	11	4 (0-5)	4 (0-5)		680.5	.990
	N	%	N	%	Chi-Square	
Gender (minority)	4/32	12.5%	25/124	20.2%	0.987	.321
Diagnosis (yes)	27/72	37.5%	87/124	70.2%	19.969	<.001
Voice-hearing (yes)	37/79	46.8%	82/124	66.1%	7.405	.007
SA (yes)	4/10	40%	77/123[b]	62.6%	1.984	.159

[a] N = 124, [b] N = 123

Appendix 2-F: Linear Regression Sensitivity Analysis

Table C1

Sensitivity Analysis of Linear Regression, including Diagnosis and Voice-Hearing

Model statistics	Step 1: Original Model		Step 2: Diagnosis (Y/N)		Step 3: Voice-hearing	
R^2 (Adj. R^2)	.229 (.175)		.229 (.168)		.233 (.165)	
F change	4.261		0.004		0.680	
p	<.001		.949		.411	
Predictor	Unstandardised B (95% CI)	*p*	Unstandardised B (95% CI)	*p*	Unstandardised B (95% CI)	*p*
Age	0.019 (-0.015, 0.045)	.177	0.019 (-0.015, 0.046)	.178	0.020 (-0.013, 0.047)	.164
Age of Onset	0.001 (-0.028, 0.038)	.964	0.001 (-0.028, 0.038)	.964	0.000 (-0.029, 0.038)	.983
Gender	-0.179 (-0.890, 0.509)	.583	-0.176 (-0.930, 0.543)	.608	-0.129 (-0.842, 0.562)	.712
Depression	-0.008 (-0.064, 0.051)	.780	-0.008 (-0.064, 0.053)	.785	-0.008 (-0.065, 0.054)	.764
Defeat	-0.013 (-0.044, 0.015)	.451	-0.013 (-0.044, 0.017)	.464	-0.013 (-0.045, 0.018)	.422
Entrapment	0.030 (0.007, 0.057)	.016	0.030 (0.008, 0.057)	.017	0.032 (0.008, 0.058)	.015
Negative-self	0.072 (0.013, 0.132)	.012	0.072 (0.011, 0.133)	.014	0.066 (0.006, 0.128)	.023
Negative-other	0.018 (-0.030, 0.063)	.415	0.019 (-0.029, 0.064)	.408	0.023 (-0.025, 0.069)	.329
Diagnosis	-	-	0.017 (-0.519, 0.565)	.960	-0.081 (-0.650, 0.540)	.790
Voice-hearing	-	-	-	-	0.248 (-0.292, 0.787)	.422

Section Three: Critical Appraisal

Wren Little

Doctorate in Clinical Psychology

Division of Health Research, Lancaster University

All correspondence should be sent to:

Wren Little

Doctorate in Clinical Psychology

Health Innovation One

Sir John Fisher Drive

Lancaster University

Lancaster

LA1 4AT

w.little1@lancaster.ac.uk

Critical Appraisal

People with experiences of psychosis (PEP) experience highly elevated rates of suicide compared to the general population and individuals diagnosed with other psychiatric conditions (Hor & Taylor, 2010; Song et al., 2020). Suicidality research in PEP has largely focused on demographic and clinical factors (e.g., Cassidy et al., 2018). There is a relative dearth of research exploring psychological processes which are potentially modifiable and could inform interventions for PEP who experience suicidality. The purpose of this thesis was to explore the relationship between positive and negative concepts of self/others and suicidality in people with experiences of psychosis. The systematic literature review (SLR) and empirical paper were underpinned by the Integrated Motivational-Volitional (IMV) of suicide (O'Connor, 2011), which summarises transdiagnostic factors relating to suicidality.

This paper aims to provide a critical reflection on the research process. It will outline the main findings of the SLR and empirical paper. The rationale for some key decisions made during the research process will be considered, along with personal reflections on the process, and implications for clinical practice.

Main Findings

The SLR aimed to explore the relationship between positive self-concepts (PSCs) and suicidality in PEP, as well as how PSCs have been examined in this population. A systematic search of four databases was conducted, resulting in 14 included papers exploring the relationship between self-esteem, positive self-appraisals, and self-warmth and suicidality, and the findings were narratively synthesised. Most papers reported on the relationship between self-esteem and suicidality in PEP. The SLR found support for a cross-sectional relationship between self-esteem and suicidality in PEP, whereby higher self-esteem was related to less suicidal ideation (SI) and attempts (SA). Far fewer studies explored the association between positive self-appraisals and self-warmth and suicidality. A relationship

was found between increased positive self-appraisals and SI, but not SA. Despite a systematic review finding a consistent relationship between self-warmth concepts and suicidality within the general population (Cleare et al., 2019), it was difficult to draw confident conclusions about the nature of the relationship in PEP due to the small number of studies. Viewed within the context of the IMV model, the findings tentatively suggested that PSCs may protect against the development of SI and have clinical implications regarding the assessment and treatment of suicidality in PEP.

The SLR further highlighted that the relationship between PSCs and suicide is relatively underexplored in PEP. PSCs were often not the authors' primary focus. Instead, findings tended to be incidental and mostly consisted of correlational analyses or group comparisons. Furthermore, only two longitudinal studies were identified within the review, both with methodological limitations, which prevented them from establishing a temporal effect. There were major differences in how suicide concepts were defined within research in this population (i.e., using combined measures of SI/SA and differences in what authors classified as 'high' or 'low' suicidality). Future research studies would benefit from including longitudinal or experimental designs, controlling for confounding variables, and integrating theoretical models (such as the IMV) into research design and analysis.

It was startling that the relationship between negative beliefs about the self and others and suicidality had not previously been explored in detail in this population, given that suicide has been viewed as an 'escape from self' in transdiagnostic research (Baumeister, 1990). The research study therefore aimed to investigate whether negative schema (appraisals of the self/others) explained unique variance in SI in PEP above that which was explained by demographic and clinical factors, defeat, and entrapment. Further, it aimed to investigate whether negative schema mediated the relationship between defeat/entrapment and SI in PEP, and whether positive-self schema moderated the relationship between negative-self schema

and SI. An additional exploratory analysis explored whether negative schema predicted previous SA in PEP.

Participants were recruited via social media to take part in an online survey. In total, 124 participants with recent 'positive' psychosis symptoms (e.g., hallucinations and delusions) were included in the study. The results identified that negative schema accounted for an additional 6.6% of variance in SI, explaining roughly one-quarter of the total variance. Negative-self schema and entrapment were significant predictors of SI within the regression model. However, negative-other schema had a non-significant relationship with SI when controlling for other variables. Negative schema fully mediated the relationships between defeat/entrapment and SI. Positive-self schema did not moderate the relationship between negative-self schema and SI. However, the analysis was underpowered to detect the small effect size identified in the moderation model. Negative schema did not predict odds of previous SA. Minoritised gender, lower depression, and greater entrapment predicted SA, with minoritised gender demonstrating the largest effect.

The research findings align with the main principles of the IMV model, wherein greater perceptions of defeat and entrapment predicted SI. Furthermore, different predictors of SI as compared to SA were identified, which is in-line with the IMV model and the Three-Step Theory (Klonsky & May, 2015). As the IMV model has been largely untested in samples of PEP, the study adds to the existing literature. The finding that negative schema fully mediates the relationship between defeat/entrapment and SI is novel and adds to the evidence base. Negative schema, particularly negative self-appraisals, appears to be an important factor underlying the relationship between defeat/entrapment and SI which has been relatively underexplored and not fully recognised within the IMV model. However, as with the studies included in the review, the empirical study is unable to establish cause and effect due to the

cross-sectional design. Further research which includes longitudinal or experimental designs would strengthen the evidence base.

Amendment to Inclusion Criteria

Initially, the inclusion criteria required participants to have received a diagnosis of a schizophrenia spectrum disorder (SSD; e.g., schizophrenia, schizoaffective disorder). The rationale for this was based on a number of factors. Firstly, it was agreed that there are limitations to including those with psychosis experiences (PEs) who do not have a diagnosis of a psychosis condition regarding the concept of 'caseness' (i.e., whether a presentation is severe enough to be classified as a clinical case). As some people with PEs may experience only a positive voice, for example, this would differ from those who would present within mental health services. Therefore, including only individuals with a diagnosis could have been more immediately applicable to those receiving treatment within services. Furthermore, including people without a diagnosis could have potentially increased the variability in symptoms and experiences, leading to a more heterogenous sample. It was felt that this could introduce confounding variables and, therefore, complicate data analysis and lead to less clear conclusions. Finally, there are a number of high-impact journals which generally require participants to have a formal diagnosis of a SSD such as Schizophrenia Bulletin and Schizophrenia Research. Publishing in a high-impact journal would have allowed for greater visibility and potentially have a greater influence on shaping clinical practice and future research, increasing the benefits of taking part for the participants. While this approach was justifiable, recruitment rates were initially slow. As a research team, we considered potential hypotheses. We noticed that there had been a change in online 'gatekeeping' with regards to research, wherein a greater number of social media groups had placed restrictions on advertising research studies. Furthermore, one website that had previously been used successfully to advertise research (i.e., Twitter) had significantly lost daily active users since

rebranding to ‘X’ (Kantrowitz, 2023). As such, I proposed to change the inclusion criteria from requiring participants to report a SSD diagnosis to individuals who have experienced recurrent ‘positive symptoms’ of psychosis (e.g., hallucinations and delusions). This could improve the viability of online recruitment by expanding the number of eligible participants from the available social media groups. The decision was underpinned by a theoretical and moral rationale based in knowledge I had gained from the literature and from immersing myself in the social media groups.

The ‘psychosis continuum’ (DeRosse & Karlsgodt, 2015) suggests that psychosis exists on a spectrum ranging from mild, transient expressions to the clinically significant psychotic symptoms observed in those who would received a SSD diagnosis. People who experience PEs have been found to demonstrate increased rates of suicidality including ideation, attempts, and completed suicides (Bromet et al., 2017; Connell et al., 2016; De Loore et al., 2011; Martin et al., 2015). A systematic review and meta-analysis of 21 studies suggested high prevalence of recent suicidal ideation and lifetime suicide attempts in those classified as ‘ultra-high risk’ of psychosis, with rates akin to those observed in diagnosed samples (Taylor et al., 2014). Further studies have reported that PEs are 1) associated with increased odds of suicidal behaviour even in those without a psychiatric diagnosis (Kelleher et al., 2017) and 2) correlate with risk of suicidal behaviour in excess of the risk associated with co-occuring psychiatric conditions (Yates et al., 2019). Whilst a diagnosis offers some homogeneity of the population, no two people with the same diagnosis will have the same exact presentation. Including people with PEs who do not have a diagnosis within research is therefore beneficial, as increasing the understanding of risk and resilience to suicidality within those experiencing psychosis would not be possible through the study of clinical samples alone.

PEs are common in those who are not diagnosed with SSD. Within the general population, 4.2% of 1376 individuals sampled reported hallucinations within the previous year (Yates et al., 2021). Prevalence varied across the lifespan (from 3% in >70s to 7% in those aged 16-19). However, in all age groups, hallucinations were associated with increased odds of suicidal ideation and suicide attempts. Importantly, only 0.73% of the sample met criteria for clinically significant or probable psychotic disorder, meaning the majority of those with PEs who experience suicidality would have been missed using the initial criteria. Furthermore, diagnosis of a psychosis condition is not infallible. The threshold separating PEs from the diagnosis of a clinical disorder is arbitrary and subject to diagnostician bias (Heckers, 2009; Waddington & Russell, 2019). In one naturalistic cohort study, 56% of patients presenting with multiple, specific psychotic symptoms received a non-psychotic disorder diagnosis or no diagnosis at all (Boonstra et al., 2008) when seeking medical support. Furthermore, other factors such as stigma and the cost of medical treatment may hinder people from accessing medical care (Dutta et al., 2019; Yarborough et al., 2018). This seemed important considering that the study was not limited to countries which offer free medical care at point-of-access. Requiring a formal diagnosis, therefore, may have excluded participants who are unable or unwilling to seek a diagnosis, limiting our understanding of suicidality within this population.

In order to address the initial concerns regarding including PEP without a formal diagnosis, some changes were made to the study. Firstly, the Community Assessment of Psychic Experiences – Positive scale (CAPE-P15; Capra et al., 2017) was added to the survey as a screening measure. The CAPE-P15 assesses ‘perceptual anomalies’ (auditory and visual hallucinations), ‘bizarre experiences’ (e.g., believing a double has taken the place of others; being controlled by external forces), and ‘persecutory ideation’ (e.g., believing there is a conspiracy against oneself) present in the past three months. As such, the inclusion of the

CAPE-P15 strengthened the validity of the study by ensuring that participants had recent PEs. Secondly, comparisons between participants with and without a SSD diagnosis and sensitivity analyses of the model were completed which demonstrated that the findings were robust. It is my hope that this thesis demonstrates the importance of conducting research in populations of people experiencing psychosis irrespective of diagnosis. Whilst there would have been benefits to publishing in a higher impact journal, there are significant benefits to adding to the literature emphasizing the psychosis continuum. Increased discussion of the frequency of PEs may help to normalize these experiences and reduce associated stigma. As the findings of this thesis suggest the importance of reducing negative and increasing positive self-appraisals, this seems particularly salient.

Interestingly, despite the change in the inclusion criteria, 70.2% of the research participants self-reported to have a SSD diagnosis. On reflection, while expanding the inclusion criteria did directly improve recruitment, there seemed to be additional secondary effects. Through discussions with social media group moderators/administrators, I received feedback that the change to the inclusion criteria was received positively and increased the trust that PEP had for me as a researcher. As a result, group moderators were more willing to promote and share the research in other groups which allowed me to reach a greater number of people. Additionally, throughout the research process, I developed my skills in recruitment and became more efficient at monitoring data and refining the approach (e.g., posting at certain times of day).

Impact of Positive Symptoms

The IMV summarises a body of theory and empirical research that consistently identifies suicide-specific transdiagnostic mechanisms (O'Connor & Portzky, 2018; Siddaway et al., 2015; Souza et al., 2024; Taylor et al., 2011a). However, this is largely

untested in psychosis populations. When planning the project, my aim was to focus on the role of negative schema within PEP and to link this to the IMV model of suicidality. The IMV model is complex, with numerous potential risk factors, and the literature regarding suicidality in PEP is extensive and often inconclusive. Due to the challenges of recruiting a large enough sample for the planned analyses within the time frame, I had to make pragmatic choices about how many and which variables to include. The decision not to include a measure of psychosis symptoms was made due to reviews showing that reducing positive symptoms does not reduce suicidality in PEP (Donker et al., 2013). On reflection, this is a limitation of the study and the inclusion of positive symptoms may have made strengthened the conclusions regarding the impact of psychological factors as compared to demographic and clinical factors. Although the CAPE-P15 was added, the decision was made to solely use this as a screening measure. Adding the CAPE-P15 into the model would have meant that the 24 participants who completed the study prior to the change in protocol could not be included in the final study. This would have reduced the statistical power of the regression models and the mediation/moderation analyses. Additionally, as these participants had given their time to complete the surveys, this did not feel right from an ethical standpoint.

The analyses for the empirical paper were therefore conducted as per the research protocol. However, I conducted additional exploratory analyses regarding the inclusion of positive symptoms (see Table 3-1). I hypothesized that higher positive symptoms on the CAPE-P15 would not explain additional variance in SI severity after controlling for age, age of onset, gender, depression, defeat, entrapment, and negative-self and -other schema. A further bootstrapped multiple linear regression was completed including the 100 participants who completed the CAPE-P15. The eight predictor variables from the original model were entered in block one, with the CAPE-P15 added in block two. The inclusion of positive symptoms did not significantly explain additional variance in the model of SI. Furthermore,

positive symptoms were not a direct predictor of SI when controlling for other variables. However, negative-self schema and entrapment were significant predictors of SI in this smaller sample. Therefore my hypothesis was supported.

The finding that SI is associated with negative-self schema and entrapment, but not SSD diagnosis and/or psychosis symptoms, points to the importance of negative beliefs about the self and others. As such, the research supports the IMV and Schematic Appraisals Model of Suicide (Johnson et al., 2008), suggesting the specificity of psychological mechanisms in suicidality. Research and interventions aiming to prevent suicidality in PEP may therefore warrant a shift from the focus on symptoms towards a transdiagnostic understanding of human experiences. It would be beneficial for future research to attempt to replicate this exploratory finding in a larger sample, in addition to other samples of PEP (e.g., inpatient samples/those closer to onset of PEs), and specific complaints (e.g., voice-hearers, people experiencing paranoia). Additionally, further research could explore different aspects of the relationship to the self. For example, the SLR highlighted a relationship between increased self-esteem and lower SI and there was limited and inconclusive findings for aspects of self-warmth (e.g., self-compassion and self-kindness). It would be interesting to explore whether the findings indicate a specific role of self-appraisals in suicidality or a general negative orientation to the self.

Expert-by-Experience Involvement

Involving those with lived experience in research is considered a valuable way to help research studies to be more responsive and relevant to the needs and experiences of the population affected by the outcomes of the study (Hayes et al., 2012). Unfortunately, at the time of the development of the study, the university was renegotiating how experts-by-experience would be reimbursed for feedback which led to a pause on stakeholder

involvement. As there were time limitations on completion of the project, I was unable to involve experts-by-experience in the development of the research design, survey, and advertisement materials.

The decision not to involve experts-by-experience was due to a number of practical and ethical reasons. Firstly, I hoped to be able to reimburse individuals for their time and energy in providing contribution to the study. Not paying experts-by-experience for their contributions creates financial barriers which can deter people with limited resources from becoming involved (Ocloo & Matthews, 2016). Studies have noted that, generally, public participation often involves a narrow group of individuals, wherein patient representatives are often middle-class (Martin, 2008) and this is amplified by a lack of reimbursement. Furthermore, voluntary participation has been criticized for setting an expectation that individuals should be expected to provide consultation for free, whilst experts are generally paid (Pizzo et al., 2014). This potentially furthers a narrative that the opinions and knowledge of individuals is less valuable than that of professionals.

Within the time constraints of the research, it did not feel possible to involve experts-by-experience in a way that would be sufficiently meaningful. The NHS England (2022) guidance on transforming participation in health and care uses the ‘ladder of engagement and participation’ (Arnstein, 1969), which demonstrates that involvement can take place at multiple levels (i.e., informing, consulting, involving, collaborating, and devolving, from low to high). At the lower end, experts-by-experience have limited power or decision-making authority. The higher end is characterized by shared power and responsibility and it is argued that participation becomes more meaningful towards the top of the ladder. By the time that expert-by-experience involvement became a viable option and individuals were able to be reimbursed, data collection had already begun. Therefore, involvement would have felt tokenistic and potentially harmful. For example, if suggestions were made that could not be

implemented, this may have led to individuals feeling devalued and ignored (Ocloo & Matthews, 2016).

The lack of expert-by-experience is a personal regret and a limitation of the study. While there were practical constraints, there are great benefits to involving experts-by-experience in health research. Firstly, involving individuals in research matters which affect their lives confirms they are valuable and valued members of society (Beresford, 2005; Clark et al., 2004). This feels particularly salient considering the findings of the thesis in regards to the impact of people's negative and positive self-appraisals. Public involvement in research can additionally help to raise awareness and increase understanding of services and clinical aims (Pizzo et al., 2014). It is acknowledged that PEP often report experiences of stigma and discrimination within medical settings (Gronholm et al., 2017), which can lead to negative perceptions of psychological services and barriers to accessing care. As such, meaningful involvement in research could lead to a greater sense of empowerment and improve relationships with services. A further benefit of expert-by-experience involvement is posited to be the increase of the researcher's 'experiential knowledge' (i.e., learning about others' experiences; Staley, 2015) which can help the interpretation of results and suggestions for future research and/or clinical implications to be informed by people's context and experiences. Whilst I did not have formal expert-by-experience involvement, during the research process I engaged in numerous conversations with social media group moderators, administrators, and members, and immersed myself within the groups. Moderators overwhelmingly responded positively to the advertising requests, particularly with regards to the wording, which gave me confidence that the study was acceptable to people with lived experience. It is my aim that future research involves greater levels of expert-by-experience participation, for example, employing people with lived experience as peer researchers to co-design further studies.

Joint Data Collection

I chose to conduct joint data collection with another trainee clinical psychologist completing a similar study relating to suicidality in voice-hearers. Initially, we had considered providing a link to one another's study within our debrief information. However, this raised concerns that asking the same small pool of people to repeatedly participate in research (particularly research relating to suicidality and negative emotional states) could lead to harm associated with perceived research burden (Lingler et al., 2014). Furthermore, our studies had considerable overlap in measures (i.e., scales of depression, defeat, entrapment, and suicidality). It seemed unlikely that participants would be willing to complete both studies, which could negatively affect recruitment for either study leading to underpowered and, therefore, less impactful research. As such, the Qualtrics survey was programmed so that all participants were asked to complete the measures pertaining to my research study. A subset of participants (those who answered "yes" to a demographic question related to voice-hearing) were asked to complete an additional four surveys to fulfil the second research study (see Appendix 2-C: joint data collection flowchart). A downside to this decision which we considered was that the combined survey may lead to higher rates of attrition. Some suggest that lengthy surveys could increase burden on research participants, leading to lower completion rates and potentially poorer data quality due to survey fatigue (Rolstad et al., 2011). However, of those who met the criteria for the study and completed the demographic and clinical questions, only 14 individuals did not complete the measures. Therefore, joint data collection seems to have been a viable recruitment method.

Influence on Clinical Practice

I chose this topic as I have a particular interest in working with people who display high-risk behaviours such as self-harm and suicidality, having worked in secondary community mental health teams and psychiatric inpatient settings. Anecdotally, my

experience of working in these services was that, when an individual presents with experiences of psychosis, the system often relies on the biomedical model. The biomedical model assumes that psychiatric diagnoses (such as schizophrenia spectrum disorders) represent biologically-based brain diseases, caused by a chemical imbalance in the brain and/or brain abnormalities (Andreasen, 1985). As such, the complex interplay of psychological, social, and environmental influences such as trauma, social isolation, stress, and cultural context can be overlooked and services may prioritise pharmacological treatments at the expense of psychological therapies and social interventions (Deacon, 2013). This was evident in the thesis process as, despite evidence supporting an integrated approach of pharmacological and psychosocial treatment for PEP (Lauriello et al., 2003), effective evidence-based interventions aimed at reducing suicide in this population are limited (Bornheimer et al., 2020). A comparatively far greater number of studies have explored the effect of pharmacological treatment on suicidality in PEP (Kasckow et al., 2011).

The SLR and empirical paper, when taken together, suggest an important role of positive and negative self-appraisals in suicidality in PEP. The findings suggest a specific effect of self-appraisals, as opposed to generally positive or negative cognitive appraisals, as risk and protective factors for suicidality in this population. As such, interventions which aim to increase positive and reduce negative self-appraisals may be effective in preventing and reducing suicidality in PEP. The thesis also highlights that, despite being relatively underexplored in PEP, the IMV model appears to be highly applicable to PEP. As such, the development of SI in PEP may be more so related to transdiagnostic factors, rather than the symptoms themselves, wherein SI is a behavioural strategy to escape feelings of entrapment and the impact on how individuals appraise themselves. In terms of future directions, I hope that publishing this research will highlight the need for future research and

psychological/social interventions which utilise positive and negative self-concepts in the prevention of suicidality in PEP.

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Tables

Table 3-1

Exploratory Analysis including Positive Symptoms: Bootstrapped Multiple Linear Regression Model with CSSRS-SISS as Outcome

Predictor	Model 1		Model 2	
	Unstandardised B (95% CI)	*p*	Unstandardised B (95% CI)	*P*
Age	0.027 (-0.008, 0.052)	.074	0.026 (-0.011, 0.052)	.092
Age of Onset	-0.004 (-0.035, 0.034)	.827	-0.005 (-0.034, 0.032)	.774
Gender	-0.092 (-0.830, 0.738)	.810	-0.077 (-0.810, 0.783)	.835
Depression	0.015 (-0.053, 0.079)	.650	0.017 (-0.051, 0.083)	.605
Defeat	-0.021 (-0.055, 0.015)	.203	-0.024 (-0.060, 0.012)	.175
Entrapment	0.027 (0.001, 0.055)	.040	0.031 (0.000, 0.065)	.057
Negative-self	0.085 (0.034, 0.140)	.006	0.085 (0.034, 0.141)	.006
Negative-other	0.041 (-0.006, 0.085)	.087	0.047 (0.001, 0.091)	.067
Positive Symptoms			-0.011 (-0.046, 0.025)	.576
R^2 (Adj. R^2)	.320 (.260)		.322 (.255)	
Std. Error	1.256		1.260	
F	5.351	<.001	4.757	<.001
F Change			0.322	.572

Section Four: Ethics Section

Ethics Application for Research Paper: Positive and Negative Schema, Defeat, Entrapment, and Suicidal Thinking in People with Experiences of Psychosis

Wren Little

Doctorate in Clinical Psychology

Division of Health Research, Lancaster University

All correspondence should be sent to:

Wren Little

Doctorate in Clinical Psychology

Health Innovation One

Sir John Fisher Drive

Lancaster University

Lancaster

LA1 4AT

w.little1@lancaster.ac.uk

Application for Ethical Approval for Research

Substantial Amendment Form v1.9.2

Substantial Amendment Form v1.9.2 - 1 **SA**

Positive and Negative Schema, Defeat, Entrapment and Suicidal Thinking in People with Experiences of Psychosis - Approved

Amendment Information

Please note:

This form is for making substantial amendments to applications previously approved in REAMS. All "Substantial Amendments" will go through the review process again. Please check the "Amendment Guidance" to see if you can use the "Minor Amendment" form.

Please number which amendment this is:

1

Amendment Summary

Please summarise your changes and the reasons why you are making them. Ensure that you indicate which parts of the form have been altered.

We are proposing two edits to the current study.

1st Proposed Amendment: Diagnostic inclusion criteria

We propose changing the inclusion criteria to no longer require a formal diagnosis of a psychosis condition (e.g., schizophrenia).
Current: Adults (aged 18 and over) who self-report a diagnosis of psychosis and report suicidal thinking in the past 6 months.
New: Adults (aged 18 and over) who self-report a diagnosis of psychosis or recent psychosis-like experiences (e.g., hallucinations, delusions) and report suicidal thinking in the past 6 months.

The 'psychosis continuum' is a notion which suggests that psychosis exists on a spectrum of experiences ranging from 'subclinical' symptom expressions to the clinically significant psychotic symptoms observed in those diagnosed with a psychiatric condition such as schizophrenia (DeRosse & Karlsgodt, 2015). The link between suicidality and psychotic experiences (PEs) across the psychosis continuum is an interesting area of research (see Bromet et al., 2017; Connell et al., 2016; De Loore et al., 2011; Dutta et al., 2011; Kelleher et al., 2017; Martin et al., 2015; Taylor, Hutton, & Wood, 2014; Yates et al., 2019). Including those who have PEs, irrespective of formal diagnosis, would allow us to learn more about how schema relate to suicide across the spectrum of psychosis.

Unfortunately, the recruitment rate has been much slower than expected. Between the period of 8th July 2023 and 5th January 2024, 24 participants have completed the survey following the advertisement being successfully posted within numerous Reddit communities and Facebook groups. From reviewing the survey data, 15 participants selected "no" to the inclusion question "Have you received a diagnosis of psychosis?" and a further 8 closed the survey at this point, potentially indicating that they would have otherwise continued with the questionnaires.

It has also been noticed that there has been a change in 'gatekeeping' on social media with a large number of groups not permitting research to be posted due to the increasing number of requests over recent years. We have considered that re-posting the advertising materials within the groups who have been receptive to the research request would allow more participants (who did not

meet the initial inclusion criteria although have experienced psychosis) to take part. Due to the anonymous, online nature of the study it is currently impossible to substantiate the validity of a self-reported diagnosis despite this being the current criteria.

Furthermore, factors such as stigma and the cost of medical treatment may hinder people from accessing medical care. This seems particularly important as the study is not limited to countries with free healthcare.

Changes

We are, therefore, proposing to edit the inclusion criteria within the recruitment materials / participant information from "Adults (aged 18 and over) who self-report a diagnosis of psychosis and report suicidal thinking in the past 6 months" to "adults (aged 18 and over) who self-report a diagnosis of psychosis or recent psychosis-like experiences (e.g., hallucinations, delusions) and report suicidal thinking in the past 6 months".

We have changed the demographic "diagnosis" question from "Please select the diagnosis/diagnoses you have received from the list below: schizophrenia, schizoaffective disorder, schizotypal disorder, acute and transient psychotic disorder, delusional disorder, other specified schizophrenia or primary psychotic disorder" to "Please select the diagnosis/diagnoses you have received from the list below (if applicable)" and added a further tick-box stating "No formal diagnosis given of psychosis".

We have removed the question "have you received a diagnosis of psychosis?" in place of a 15-item measure of recent 'psychotic-like experiences' (The Community Assessment of Psychic Experiences-Positive Scale (CAPE-P15); Capra et al., 2017). The survey has been edited so that, if a participant reports to have a diagnosis of psychosis, they will continue with the study as within the previous criteria. However, participants who self-report to not have a formal diagnosis and score zero on the CAPE-P15 will be excluded at this stage.

We plan to report descriptives of how many of the sample self-report to have a diagnosis versus those with PEs who do not self-report a diagnosis. We propose doing supplementary analysis of key variables (I.e., T-tests or non-parametric equivalents) to compare the groups (diagnosis vs non-diagnosis) and, if we get enough power, we can run sensitivity analysis to see if it makes a difference to the results.

Form amendments:
- Title of project
- Summarise your research protocol in lay terms
- State the aims and objectives of the project in lay persons' language
- Please explain the number of participants you intend to include in your study.... (participant details section)
- As you have indicated that you are working with a vulnerable group please describe the intended participants, and why they are needed for this research
- Estimated end date

2nd Proposed Amendment: Changing online-only recruitment to online and public places

Due to the slower-than-expected recruitment, we propose adding advertisement in public places as a recruitment strategy. This would involve displaying the advertising materials (I.e., poster) in public places such as universities, council buildings, public transport offices, etc. As we have not sought NHS ethics, this would not include medical settings such as GP noticeboards. The poster includes a 'short url' which potential participants can access on their devices, and we could also include a QR code as another option. We would create an identical survey with a separate link, which would enable us to see how many participants have accessed the survey through online or physical advertisement.

Form amendments:
- Please explain the number of participants you intend to include in your study and explain your rationale in details (eg who will be recruited, how, where from...)
- Online sources: Briefly describe your data collection methods from the online source(s)...

Amended Materials:
- Consent form
- Participant information sheet
- Advertising materials
- Debrief statement
- Survey and flowchart (demonstrating various paths/branches of survey)
- Research protocol

Will your project require NHS REC approval? (If you are not sure please read the guidance in the information button)

○ Yes ◉ No

Do you need Health Research Authority (HRA) approval? (Please read the guidance in the information button)

○ Yes ◉ No

Have you already obtained, or will you be applying for ethical approval, from another institution outside of Lancaster University? (For example, an external institution such as: another University's Research Ethics Committee, the NHS or an institution abroad (eg an IRB in the USA)? Please select one of the following:

◉ No, I do not need ethical approval from an external institution.
○ Yes, I have already received ethical approval from an external institution.
○ Yes, I will be applying for ethical approval from an external institution after I have received confirmation of ethical approval from my Faculty Research Ethics Committee (FREC) at Lancaster University, if the FREC grants approval.

Is this an amendment to a project previously approved by Lancaster University?

○ Yes ◉ No

To note: please do not change your answer to this question, as you are completing the Substantial Amendment form therefore it is apparent that this is an amendment to a previously approved Lancaster University project .

Which Faculty are you in?

Faculty of Health and Medicine

Are you undertaking this research as/are you filling this form out as:

○ Academic/Research Staff
○ Non Academic Staff
○ Staff Undertaking a Programme of Study
◉ PhD or DClinPsy student or MPhil
○ Undergraduate, Masters, Master by Research or other taught postgraduate programme

Will your research involve any of the following? (Multiple selections are possible, please see i icon for details)

☑ Human Participants
☐ Data relating to humans (Secondary/Pre-existing data only)
☑ Data collection from online sources such as social media platforms, discussion forums, online chat-rooms
☐ Human Tissue
☐ None of the above

Project Information

Please confirm/amend the title of this project.

Positive and Negative Schema, Defeat, Entrapment and Suicidal Thinking in People with Experiences of Psychosis

Estimated Project Start Date 01/02/2023

Amended Start Date - *If the start date hasn't changed please re-enter* 01/02/2023

Estimated End Date 21/06/2024

Is this a funded Project?

○ Yes ◉ No

Research Site(s) Information

Will you be recruiting participants from research sites outside of Lancaster University? *(E.g. Schools, workplaces, etc; please read the guidance in the information button for more information)*

○ Yes ◉ No

Applicant Details

Are you the named Principal Investigator at Lancaster University?

◉ Yes ○ No

Please check your contact details are correct. You can update these fields via the personal details section located in the top right of the screen. Click on your name and email address in the top right to access "Personal details". For more details on how to do this, please read the guidance in the information button.

First Name

Wren

Surname

Little

Department

Health Research

Faculty

Faculty of Health and Medicine

Email

w.little1@lancaster.ac.uk

Please enter a phone number that can be used in order to reach you, should an emergency arise.

07480794512

Supervisor Details

Search for your supervisor's name. *If you cannot find your supervisor in the system please contact rso-systems@lancaster.ac.uk to have them added.*

First Name

James

Surname

Kelly

Department

Health Research

Faculty

Faculty of Health and Medicine

Email

j.a.kelly@lancaster.ac.uk

Do you need to add a second supervisor to sign off on this project?

○ Yes ◉ No

Additional Team Members

Other then those already added, please select which type of team members will be working on this project:

- ☐ I am not working with any other team members.
- ☑ Staff
- ☐ Student
- ☐ External

Search for the names of all other internal staff here:

First Name

Myles

Surname

Sammon

Department

Health Research

Faculty

Faculty of Health and Medicine

Email

m.sammon@lancaster.ac.uk

Details about the participants

As you are conducting research with Human Participants/Tissue you will need to answer the following questions before your application can be reviewed.

If you have any queries about this please contact your Ethics Officer before proceeding.

What's the minimum number of participants needed for this project?

100

What's the maximum number of expected participants?

160

Do you intend to recruit participants from online sources such as social media platforms, discussion forums, or online chat rooms?

(•) Yes ( ) No

You stated that you will be engaging in recruiting participants from online sources such as social media platforms, discussion forums, or online chat-rooms. Please confirm that this either:

(•) Is clearly in compliance with the online source(s) published terms and conditions

( ) Not clear within the online source(s) published terms and conditions, therefore you have obtained written approval from the platform

( ) Neither of the above

Will you get written consent and give a participant information sheet with a written description of your research to all potential participants?

(•) Yes ( ) No ( ) I don't know

Will any participants be asked to take part in the study without their consent or knowledge at the time or will deception of any sort be involved?

( ) Yes (•) No ( ) I don't know

Is your research with any vulnerable groups?

(Vulnerable group as defined by Lancaster University Guidelines)

(•) Yes ( ) No ( ) I don't know

Is your research with any adults (aged 18 or older)?

(•) Yes ( ) No

Is your research data collected with completely anonymous adult (aged 18 or older) participants, with no contact details or other uniquely identifying information (e.g. date of birth) being recorded?

( ) Yes (•) No

Is your research with any young people (under 18 years old)?

( ) Yes (•) No ( ) I don't know

Does your research involve discussion of personally sensitive subjects which the participant might not be willing to otherwise talk about in public (e.g. medical conditions)?

(•) Yes ( ) No ( ) I don't know

Is there a risk that the nature of the research topic might lead to disclosures from the participant concerning either:

- Their own or others involvement in illegal activities
- Other activities that represent a threat to themselves or others (e.g. sexual activity, drug use, or professional misconduct)?

(•) Yes ( ) No ( ) I don't know

Does the study involve any of the following:

- Physically intrusive procedures including touching or attaching equipment to participants
- Administration of substances
- Ultrasound or sources of non-ionising radiation (e.g. lasers)
- Sources of ionising radiation, (e.g. X-rays)
- Collection or use of samples of Human Tissue (e.g. Saliva, skin cells, blood etc.)

○ Yes ◉ No ○ I don't know

Details about the relationships with participants

Do you have a current or prior relationship with potential participants? For example, teaching or assessing students or managing or influencing staff (this list is not exhaustive).

○ Yes ◉ No ○ I don't know

If you need written permission from a senior manager in an organisation where research will take place (e.g. school, business) will you gain this in advance of undertaking your research?

○ Yes ○ No ○ I don't know ◉ N/A

Will you be using a gatekeeper to access participants?

○ Yes ◉ No ○ I don't know if I will be using a gatekeeper

Will participants be subjected to any undue incentives to participate?

○ Yes ◉ No ○ I don't know

Will you ensure that there is no perceived pressure to participate?

◉ Yes ○ No ○ I don't know

Details about participant data

Will you be using video recording or photography as part of your research or publication of results?

○ Yes ◉ No

Will you be using audio recording as part of your research?

○ Yes ◉ No

Will you be using portable devices to record participants (e.g. audio, video recorders, mobile phone, etc)?

◉ No
○ Yes, and all portable devices will be encrypted as per the Lancaster University ISS standards, in particular where they are used for recording identifiable data
○ Yes, but these cannot be encrypted because they do not have encryption functionality. Therefore I confirm that any identifiable data (including audio and video recordings of participants) will be deleted from the recording device(s) as quickly as possible (e.g. when it has been transferred to a secure medium, such as a password protected and encrypted laptop or stored in OneDrive) and that the device will be stored securely in the meantime

Will you be using other portable storage devices in particular for identifiable data (e.g. laptop, USB drive, etc)? (Please read the help text)

◉ No
○ Yes, and they will be encrypted as per the Lancaster University ISS standards in particular where they are used for recording identifiable data

Will anybody external to the research team be transcribing the research data?

○ Yes ◉ No

Details about the online sources

You stated that you will be engaging in data collection from online sources such as social media platforms, discussion forums, online chat-rooms. Please confirm that the data you intend to collect and the mode of analysis and communication is either:

◉ Clearly in compliance with the online source(s) published terms and conditions
○ Not clearly within the online source(s) published terms and conditions, therefore you have obtained written approval from the platform to conduct your project
○ Neither of the above

Data Source

Is the online data you will be using in the public domain?

○ Yes ◉ No

Will you use data from potentially illicit, illegal, or unethical online sources (e.g. pornography, related to terrorism, dark web, leaked information)?

○ Yes ◉ No ○ I don't know

Do you need consent for the use of the data for research purposes?

◉ Yes ○ No ○ I don't know

Will you protect anonymity in your use and analysis of the data?

◉ Yes ○ No ○ I don't know

General Queries

Does the funder or any organisations involved in the research have a vested interest in specific research outcomes that would affect the independence of the research?

○ Yes ◉ No ○ I don't know

Does any member of the research team, or their families and friends, have any links to the funder or organisations involved in the research?

○ Yes ◉ No ○ I don't know

Can the research results be freely disseminated?

◉ Yes ○ No ○ I don't know

Will you use data from potentially illicit, illegal, or unethical sources (e.g. pornography, related to terrorism, dark web, leaked information)?

○ Yes ◉ No ○ I don't know

Will you be gathering/working with any special category personal data?

(•) Yes ( ) No ( ) I don't know

Are there any other ethical considerations which haven't been covered?

( ) Yes (•) No ( ) I don't know

REC Review Details

Based on the answers you have given so far you will need to answer some additional questions to allow reviewers to assess your application.

It is recommended that you do not proceed until you have completed **all of the previous questions**.

Please confirm that you have finished answering the previous questions and are happy to proceed.

☑ I confirm that I have answered all of the previous questions, and am happy to proceed with the application.

Questions for REC Review

Summarise your research protocol in lay terms (indicative maximum length 150 words).

Note: The summary of the protocol should concisely but clearly tell the Ethics Committee (in simple terms and in a way which would be understandable to a general audience) what you are broadly planning to do in your study. Your study will be reviewed by colleagues from different disciplines who will not be familiar with your specific field of research and it may also be reviewed by the lay members of the Research Ethics Committee; therefore avoid jargon and use simple terms. A helpful format may include a sentence or two about the background/ "problem" the research is addressing, why it is important, followed by a description of the basic design and target population. Think of it as a snapshot of your study.

Suicide is a major public health problem. People who experience psychosis are more likely to experience suicidal thinking and behaviour. Psychosis describes an experience where a person perceives or interprets reality in a very different way from people around them.

Defeat (feeling "knocked down" by life's difficulties) and entrapment (feeling as though you are in an unbearable situation and cannot escape) are found to be significant predictors of suicide. People's deep-rooted beliefs about themselves/others ('core schemas') have also been linked to suicidal thinking and to many mental health difficulties, including psychosis. This study will investigate the relationship between positive and negative beliefs about the self, defeat and entrapment, and suicidal thinking in people with psychosis.

The study will recruit adults with a diagnosis of psychosis and/or recent psychosis-like experiences (e.g., hallucinations, delusions) and report suicidal thinking in the past 6 months. Participants will complete a series of questionnaires online on one occasion.

State the Aims and Objectives of the project in Lay persons' language.

The primary research questions this study aims to address are:
1) What is the relationship between Negative Schema and Suicidal Thinking and Behaviour in people with experiences of psychosis?
2) What is the relationship between Negative Schema and Defeat and Entrapment?
3) Do Negative Schema predict Suicidal Thinking and Behaviour after controlling for defeat and entrapment?

This study will also explore the following secondary research questions:
4) Do Negative Schema explain the relationship between (aka mediate) Defeat and Entrapment and Suicidal Thinking and Behaviour?
5) Do positive schema alter the strength of (moderate) the relationship between Negative Schema and Suicidal Thinking and Behaviour?

Participant Information

Please explain the number of participants you intend to include in your study and explain your rationale in detail (eg who will be recruited, how, where from; and expected availability of participants). If your study contains multiple parts eg interviews, focus groups, online questionnaires) please clearly explain the numbers and recruitment details for each of these cohorts (see help text).

Study details: Participants will complete a series of questionnaires online through the www.lancasteruni.eu.qualtrics.com application. Data collection will be carried out in conjunction with a study being conducted by a second trainee, Myles Sammon, who is also under the supervision of Dr James Kelly. Participants who hear voices will be eligible for Myles' study and will be asked additional items.

Participants included in the study will be adults aged 18 and over, who self-report a diagnosis of psychosis (e.g. schizophrenia spectrum disorder) and/or recent psychosis-like experiences (e.g. hallucinations/delusions) and report suicidal thinking in the past 6 months. I will be recruiting participants online through psychosis support/information services (such as Rethink, the Hearing Voices Network and Voice Collective) and social media (e.g., Twitter, Reddit and Facebook). People involved in these organisations/groups will be contacted to support the circulation of study information which will include a website link to the online study. We expect participant availability to be sufficient to fulfil the needed amount of participants for this study based upon recent research into voice hearing/psychosis populations which has successfully utilised online data collection through social media to recruit similar numbers of participants (Lawrence et al., 2010).

We also aim to advertise in public places as a recruitment strategy. This would involve displaying the advertising materials (I.e., poster) in public places such as universities, council buildings, public transport offices, etc. As we have not sought NHS ethics, this would not include medical settings such as GP noticeboards. No data will be collected in-person. The poster includes a 'short url' which potential participants can access on their devices, and we could also include a QR code as another option. We would create an identical survey with a separate link, which would enable us to see how many participants have accessed the survey through online or physical advertisement.

Number of participants: I used similar studies to calculate an estimated effect size. A G*Power calculation states that that the minimum number of participants needed is 100. As the similar studies are not directly comparable (measuring a related but different construct of self-appraisal), I also used a 'rule of thumb' to calculate the number of participants for a model with 8 independent variables which equated to 130 participants. Furthermore, I am collecting data jointly with another researcher (Myles Sammon). As his population (people with psychosis who hear voices) is a smaller subsection of my population (people with psychosis), recruitment will need to continue until he reaches a sufficient number of participants (N = 81 - 114). Approximately 75% of people with a diagnosis of schizophrenia report voice hearing (Waters & Fernyhough, 2017). Assuming a similar proportion within our sample, 152 participants would be required to recruit 114 voice hearers. As this is only an estimate of effect size, my rationale for 160 participants includes a safety margin to allow for additional participants.

As you have indicated that you are working with a vulnerable group please describe the intended participants, and why they are needed for this research.

Participants included in the study will be adults aged 18 and over, who self-report a diagnosis of psychosis (e.g. schizophrenia spectrum disorder) and/or recent psychosis-like experiences (e.g. hallucinations/delusions) and report suicidal thinking in the past 6 months.

People who experience psychosis are more likely to experience suicidal thinking and behaviour (Huang et al., 2018, Yates et al., 2019), including those with 'subclinical' psychosis experiences (Bromet et al., 2017; Connell et al., 2016; De Loore et al., 2011; Dutta et al., 2011; Kelleher et al., 2017; Martin et al., 2015; Taylor, Hutton, & Wood, 2014; Yates et al., 2019). The purpose of my study is to research suicidal thinking in people with psychosis experiences to inform available treatments and/or improve understanding of risk factors. It is therefore necessary to recruit participants from this population.

You have selected that the research may involve personal sensitive topics that participants may not be willing to otherwise talk about. Please indicate what discomfort, inconvenience or harm could be caused to the participant and what steps you will take to mitigate or manage these situations.

The measures in the survey will ask participants about a number of sensitive topics. The main potential for risk being the measure of suicidality which asks about recent experiences of suicidal thinking and/or behaviour. This has the potential to increase attention to suicidal thoughts, induce memories of previous suicidal thinking/behaviour, and/or induce negative emotions (e.g., sadness, shame). Participants will also be asked about other personal topics i.e., depressive symptoms, negative appraisals of themselves and others (core schema), and experiences of defeat and entrapment. Participants who hear voices will be asked additional measures around self-criticism and beliefs about voices (their relationship to the voice). Each of these have the potential to cause upset/discomfort by increasing attention towards these experiences.

Efforts have been made to select measures which have the fewest number of items (reducing the time burden for participants) and measures with language which is least likely to cause discomfort/offense, whilst having sufficient validity, reliability, and offer comparisons to other studies in this area.

Details of the study will be available on the poster and participant information sheet (PIS). The PIS will explicitly detail the specific topics of the questionnaires and warn prospective participants of the potential for discomfort/distress. The PIS will clearly state that participants do not have to complete the study and can withdraw at any point. This will be reiterated in the questions/tickbox where participants will confirm consent.

The PIS and debrief sheet will both contain contact information for services which can provide additional support if needed. As the study will be published online, and is therefore accessible internationally, this will include links to "https://findahelpline.com", which provides details for suicide and anxiety helplines in most countries, and "https://en.wikipedia.org/wiki/List_of_suicide_crisis_lines" which provides a greater number of options including free text services for a number of countries. A link to "https://findahelpline.com" will also be included at the end of each page of questions for easier accessibility.

You have indicated that you will collect identifying information from the participants. Please describe all the personal information that you gather for your study which might be used to identify your participants.

Age, gender, age of psychosis onset, ethnicity, marital status, diagnosis, and voice-hearing status. Email addresses may be obtained where participants wish to receive a summary of the research at the end of the study.

Please describe how the data will be collected and stored.

The electronic data will be collected and stored within the password-protected Lancaster Qualtrics website. This will also only be accessed via our secure/encrypted LSCFT laptops. Once we have reached a sufficient number of participants or the data collection window has closed, the data will be exported to our personal OneDrive folder for storage which is only accessible by myself, Myles Sammon, and our thesis supervisor (James Kelly). Data will be encrypted and passwords for the documents shared with my supervisor only. No paper documents will be collected during the course of this research. Once the final version of my thesis has been submitted, I will share the research data with the Research Coordinator for long-term storage by sharing the OneDrive folder. This will be transferred electronically using a secure method that is supported by the University. The data will then be saved on a password protected file space on the server.

Participants may provide us with contact details (email address) if they wish to receive a summary of the research at the end of the study. These details will be stored separately from the collected data to ensure anonymity. These will be retained until this summary has been sent out. Once the study is completed, contact details will be deleted and this will be confirmed in writing (by email) that this action has been completed with my supervisor.

Please describe how long the data will be stored and who is responsible for the deletion of the data.

Once the final version of my thesis has been submitted, I will share the research data with the Research Coordinator for long-term storage by sharing the OneDrive folder. This will be transferred electronically using a secure method that is supported by the University. The data will then be saved on a password protected file space on the server. The Research Coordinator will be responsible for deletion of the data.

You stated that the study could induce psychological stress or anxiety, or produce humiliation or cause harm or negative consequences beyond the risks encountered in a participant's usual, everyday life. Please describe the question(s) and situation(s) that could lead to these outcomes and explain how you will mitigate this.

The measures in the survey will ask participants about a number of sensitive topics. The main potential for risk being the measure of suicidality which asks about recent experiences of suicidal thinking and/or behaviour. This has the potential to increase attention to suicidal thoughts, induce memories of previous suicidal thinking/behaviour, and/or induce negative emotions (e.g., sadness, shame). Participants will also be asked about other personal topics i.e., depressive symptoms, negative appraisals of themselves and others (core schema), and experiences of defeat and entrapment. Participants who hear voices will be asked additional measures around self-criticism and beliefs about voices (their relationship to the voice). Each of these have the potential to cause upset/discomfort by increasing attention towards these experiences.

Efforts have been made to select measures which have the fewest number of items (reducing the time burden for participants) and measures with language which is least likely to cause discomfort/offense, whilst having sufficient validity, reliability, and offer comparisons to other studies in this area.

Details of the study will be available on the poster and participant information sheet (PIS). The PIS will explicitly detail the specific topics of the questionnaires and warn prospective participants of the potential for discomfort/distress. The PIS will clearly state that participants do not have to complete the study and can withdraw at any point. This will be reiterated in the questions/tickbox where participants will confirm consent.

The PIS and debrief sheet will both contain contact information for services which can provide additional support if needed. As the study will be published online, and is therefore accessible internationally, this will include links to "https://findahelpline.com", which provides details for suicide and anxiety helplines in most countries, and "https://en.wikipedia.org/wiki/List_of_suicide_crisis_lines" which provides a greater number of options including free text services for a number of countries. A link to "https://findahelpline.com" will also be included at the end of each page of questions for easier accessibility.

You have selected that there is a risk that the nature of the research might lead to disclosures from the participant. What kind of information might participants disclose? How will you manage that situation?

Participants may indicate in their response to the survey questions that they are experiencing current thoughts/plans/intent to harm themselves and/or recent suicidal behaviour. By the nature of the study, it will not be possible to actively follow-up on any disclosures of suicidality due to anonymity of responses. We will provide participants with contact information for services which can provide additional support if needed. As the study will be published online, and is therefore accessible internationally, this will include a link to "https://findahelpline.com", which provides details for suicide and anxiety helplines in most countries. This will be available in the PIS, debrief, and at the end of each page of questions.

Additional Information

What are your dissemination plans? E.g publishing in PhD thesis, publishing in academic journal, presenting in a conference (talk or poster).

It is planned to publish findings in a peer-reviewed academic journal identified jointly with my research supervisor and Myles Sammon. It is also planned to feedback a summary of the research findings to participants who opt to receive this information by providing their email address through an anonymous link.

Data Sources

You have indicated that the data you will be using is not in the public domain. Please explain how the records will be obtained? Indicate the original purpose for which the data was collected?

Data will not come from pre-existing records and will be collected for the purposes of this study via questionnaire (Qualtrics).

You have stated that you need consent to use the data for this project. Please explain how you propose to obtain consent.

Informed consent will be obtained by providing participants with the information sheet at the beginning of the questionnaire. Participants will then be asked to provide consent by ticking boxes to confirm they have read and understood the information sheet and that they consent to the data being collected, stored, and analysed for the purpose of the study.

Online Sources

Briefly describe your data collection methods from the online source(s), state which online sources you intend to use, and why the data is relevant to your research.

Data will not come from pre-existing records and will be collected for the purposes of this study via questionnaire (Qualtrics). We intend to use social media platforms (Twitter, Facebook and Reddit) and psychosis support/information services (such as Rethink, the Hearing Voices Network and Voice Collective) to share information about the study and a link to the Qualtrics questionnaire.

We also plan to display the advertising materials (I.e., poster) in public places such as universities, council buildings, public transport offices, etc. As we have not sought NHS ethics, this would not include medical settings such as GP noticeboards. The poster includes a 'short url' which potential participants can access on their devices, and we could also include a QR code as another option. We would create an identical survey with a separate link, which would enable us to see how many participants have accessed the survey through online or physical advertisement.

You have indicated site users have a reasonable expectation of privacy and therefore you will need to obtain consent to use their data for this project. Please explain how you propose to obtain consent.

Informed consent will be obtained by providing participants with the information sheet at the beginning of the questionnaire. Participants will then be asked to provide consent by ticking boxes to confirm they have read and understood the information sheet and that they consent to the data being collected, stored, and analysed for the purpose of the study. Data will not come from pre-existing records and will be collected for the purposes of this study via questionnaire (Qualtrics).

General Queries

You have indicated that you will be gathering/working with special category data. Please confirm here how you will comply with data protection law (GDPR) for use of special category personal data.

We will report a summary of special category data (e.g., age, gender, ethnicity, marital status) however will not report any individual participants data and all information will be anonymised and unidentifiable.

The electronic data will be collected and stored within the password-protected Lancaster Qualtrics website. This will also only be accessed via our secure/encrypted LSCFT laptops. Once we have reached a sufficient number of participants or the data collection window has closed, the data will be exported to our personal OneDrive folder for storage which is only accessible by myself and my thesis supervisor (James Kelly). Data will be encrypted and passwords for the documents shared with my supervisor only. No paper documents will be collected during the course of this research.

Once the final version of my thesis has been submitted, I will share the research data with the Research Coordinator for long-term storage by sharing the OneDrive folder. This will be transferred electronically using a secure method that is supported by the University. The data will then be saved on a password protected file space on the server for 10 years. The Research Coordinator will be responsible for deletion of the data.

Additional Information for REC Review

How long will you retain the research data?

The electronic data will be collected and stored within the password-protected Lancaster Qualtrics website. This will also only be accessed via our secure/encrypted LSCFT laptops. Once we have reached a sufficient number of participants or the data collection window has closed, the data will be exported to our personal OneDrive folder for storage which is only accessible by myself and my thesis supervisor (James Kelly). Data will be encrypted and passwords for the documents shared with my supervisor only. No paper documents will be collected during the course of this research.

Once the final version of my thesis has been submitted, I will share the research data with the Research Coordinator for long-term storage by sharing the OneDrive folder. This will be transferred electronically using a secure method that is supported by the University. The data will then be saved on a password protected file space on the server for 10 years. The Research Coordinator will be responsible for deletion of the data.

How long and where will you store any personal and/or sensitive data?

The electronic data will be collected and stored within the password-protected Lancaster Qualtrics website. This will also only be accessed via our secure/encrypted LSCFT laptops. Once we have reached a sufficient number of participants or the data collection window has closed, the data will be exported to our personal OneDrive folder for storage which is only accessible by myself and my thesis supervisor (James Kelly). Data will be encrypted and passwords for the documents shared with my supervisor only. No paper documents will be collected during the course of this research.

Once the final version of my thesis has been submitted, I will share the research data with the Research Coordinator for long-term storage by sharing the OneDrive folder. This will be transferred electronically using a secure method that is supported by the University. The data will then be saved on a password protected file space on the server for 10 years. The Research Coordinator will be responsible for deletion of the data.

Participants may provide us with contact details (email address) if they wish to receive a summary of the research at the end of the study. These details will be stored separately from the collected data to ensure anonymity. These will be retained until this summary has been sent out (presumed before August 2024). Once the study is completed, contact details will be deleted and this will be confirmed in writing (by email) that this action has been completed with my supervisor.

Please explain when and how you will anonymise data and delete any identifiable record?

Data will be anonymised automatically due to the nature of the Qualtrics questionnaire. Participants will not be asked to provide their name or contact details within the main research questionnaire.

Should participants wish to receive a summary of the research at the end of the study, their email address will be collected via a link at the end of the survey to a separate questionnaire with one single textbox. This allows the email address to be collected without being connected to an individual survey response. These details will be stored separately from the collected data to ensure anonymity. These will be retained until this summary has been sent out. Once the study is completed, contact details will be deleted and this will be confirmed in writing (by email) that this action has been completed with my supervisor.

Document Upload

Important Notice about uploaded documents:

When your application has been reviewed if you are asked to make any changes to your uploaded documents please highlight the changes on the updated document(s) using the highlighter so that they are easy to see.

Please confirm that you have read and applied, where appropriate, the guidance on completing the Participant Information Sheet, Consent Form, and other related documents and that you followed the guidance in the help button for a quality check of these documents. For information and guidance, please use the relevant link below:

FST Ethics Webpage

FHM Ethics Webpage

FASS-LUMS Ethics Webpage

REAMS Webpage

☑ I confirm that I have followed the guidance.

As you are in FHM please upload your Research Protocol:

Documents

Type	Document Name	File Name	Version Date	Version	Size
Research Proposal	Research Protocol	Research Protocol.docx	25/01/2024	1	203.3 KB

In addition to completing this form you must submit all supporting materials.

Please indicate which of the following documents are appropriate for your project:

- ☐ I have no updated documents and confirm that all relevant documents were included in previous submissions.
- ☑ Advertising materials (posters, emails)
- ☑ Research Proposal (DClinPsy)
- ☐ Letters/emails of invitation to participate
- ☑ Consent forms
- ☑ Participant information sheet(s)
- ☐ Interview question guides
- ☐ Focus group scripts
- ☑ Questionnaires, surveys, demographic sheets
- ☐ Workshop guide(s)
- ☑ Debrief sheet(s)
- ☐ Transcription (confidentiality) agreement
- ☐ Other
- ☐ None of the above.

Please upload the documents in the correct sections below:

Please ensure these are the latest version of the documents to prevent the application being returned for corrections you have already made.

Please upload a copy of all of the consent forms that you will be using:

Documents

Type	Document Name	File Name	Version Date	Version	Size
Consent Form	Consent Form V2 29.01.24	Consent Form V2 29.01.24.docx	29/01/2024	2	18.7 KB

Please upload a copy of all of the Participant Information Sheets that you will be using in this study.

Documents

Type	Document Name	File Name	Version Date	Version	Size
Participant Information Sheet	Participant information sheet V3 29.01.24	Participant information sheet V3 29.01.24.pdf	29/01/2024	3	450.7 KB

Please upload all of the advertising materials relevant for this project:

Documents

Type	Document Name	File Name	Version Date	Version	Size
Advertising materials	Amended thesis poster V3 29.01.24	Amended thesis poster V3 29.01.24.png	29/01/2024	3	846.9 KB

Please upload all questionnaire, surveys, demographic sheet templates used in this project:

Documents

Type	Document Name	File Name	Version Date	Version	Size
Questionnaires, surveys, demographic sheets	Survey with Amendments highlighted V3 29.01.24	Survey with Amendments highlighted V3 29.01.24.docx	29/01/2024	3	40.5 KB
Questionnaires, surveys, demographic sheets	Updated survey flow chart V2 20.01.24	Updated survey flow chart V2 20.01.24.pdf	29/01/2024	2	159.2 KB

Please upload all debrief sheets used for this project.

Documents

Type	Document Name	File Name	Version Date	Version	Size
Debrief sheet	Debrief Statement V3 29.01.24	Debrief Statement V3 29.01.24.docx	29/01/2024	3	17.5 KB

Declarations and Sign off

Please Note

Research Services monitors projects entered into the online system, and may select projects for quality control.

All research at Lancaster university must comply with the LU data storage and governance guidance as well as the General Data Protection Regulation (GDPR) and the UK Data Protection Act 2018. (Data Protection Guidance webpage)

☑ I confirm that I have read and will comply with the LU Data Storage and Governance guidance and that my data use and storage plans comply with the General data Protection Regulation (GDPR) and the UK Data Protection Act 2018.

Have you that you have undertaken a health and safety risk assessment for your project through your departmental process? (Health and Safety Guidance)

☑ I have undertaken a health and safety assesment for your project through my departmental process, and where required will follow the appropriate guidance for the control and management of any foreseeable risks.

When you are satisfied that this application has been completed please click "Request" below to send this application to your supervisor for approval.

Signed: This form was signed by Dr James Kelly (j.a.kelly@lancaster.ac.uk) on 29/01/2024 12:23

Please read the terms and conditions below:

- You have read and will abide by Lancaster University's Code of Practice and will ensure that all staff and students involved in the project will also abide by it.
- If appropriate a confidentiality agreement will be used
- You will complete a data management plan with the Library if appropriate. Guidance from Library.
- You will provide your contact details, as well as those of either your supervisor (for students) or an appropriate person for complaints (such as HoD) to any participants with whom you interact, so they know whom to contact in case of questions or complaints?
- That University policy will be followed for secure storage of identifiable data on all portable devices and if necessary you will seek guidance from ISS
- That you have completed the ISS Information Security training and passed the assessment
- That you will abide by Lancaster University's lone working policy for field work if appropriate
- On behalf of the institution you accept responsibility for the project in relation to promoting good research practice and the prevention of misconduct (including plagiarism and fabrication or misrepresentation of results).
- To the best of your knowledge the information you have provided is correct at the time of submission
- If anything changes in your research project you will submit an amendment

To complete and submit this application please click "Sign" below:

Signed: This form was signed by Wren Little (w.little1@lancaster.ac.uk) on 29/01/2024 11:55

References

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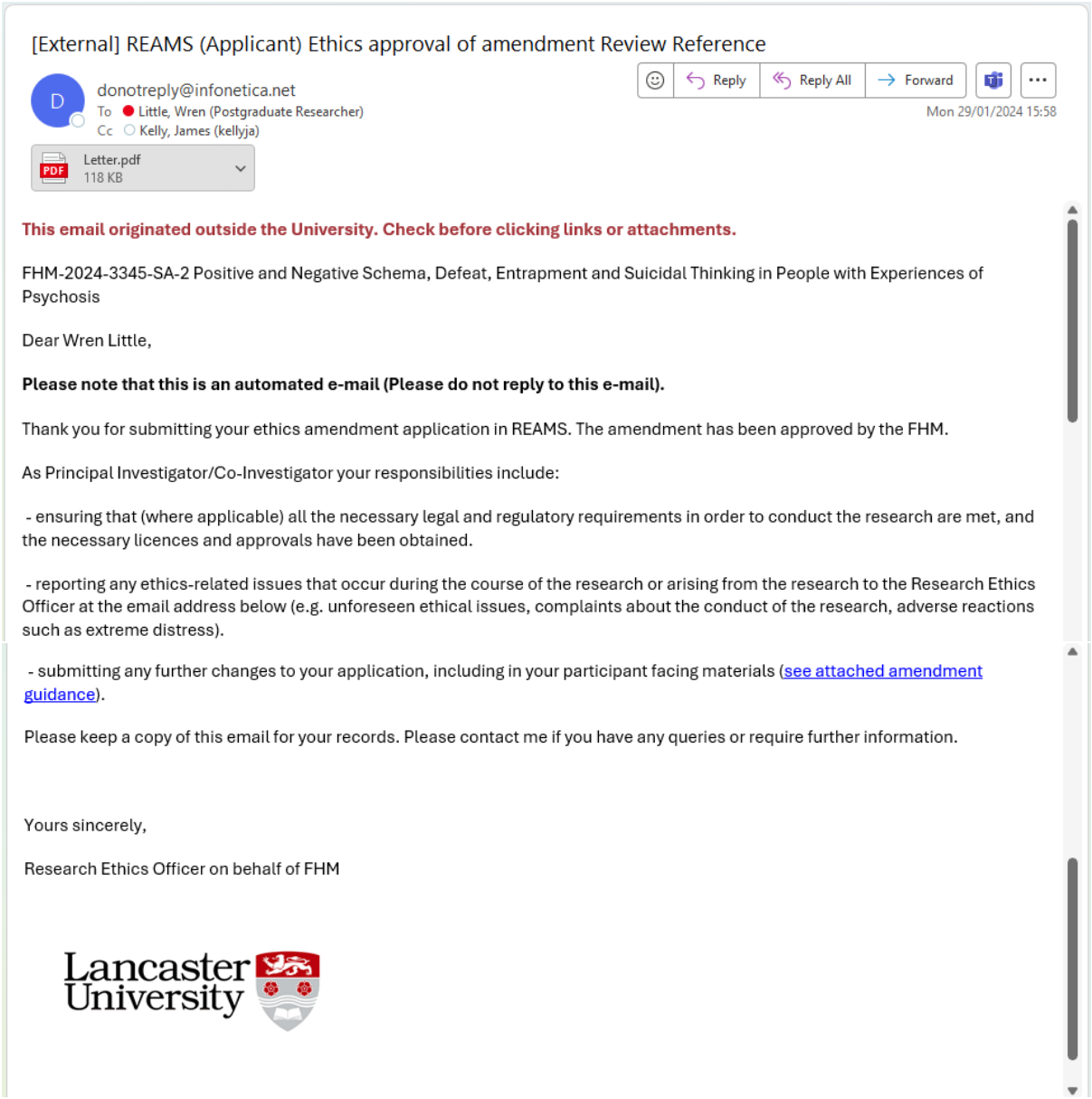
Appendix 4-A: Ethical Approval Confirmation



[External] REAMS (Applicant) Ethics approval of amendment Review Reference

donotreply@infonetica.net
To Little, Wren (Postgraduate Researcher)
Cc Kelly, James (kellyja)

Reply | Reply All | Forward

Mon 29/01/2024 15:58

Letter.pdf
118 KB

This email originated outside the University. Check before clicking links or attachments.

FHM-2024-3345-SA-2 Positive and Negative Schema, Defeat, Entrapment and Suicidal Thinking in People with Experiences of Psychosis

Dear Wren Little,

Please note that this is an automated e-mail (Please do not reply to this e-mail).

Thank you for submitting your ethics amendment application in REAMS. The amendment has been approved by the FHM.

As Principal Investigator/Co-Investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licences and approvals have been obtained.

- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress).

- submitting any further changes to your application, including in your participant facing materials (see attached amendment guidance).

Please keep a copy of this email for your records. Please contact me if you have any queries or require further information.

Yours sincerely,

Research Ethics Officer on behalf of FHM

Lancaster University

Appendix 4-B: Research Protocol

Doctorate in Clinical Psychology | Lancaster University

Research Protocol

Version 1

Title: Positive and Negative Schema, Defeat, Entrapment and Suicidal Thinking in People with Experiences of Psychosis

Principal investigator: Wren Little, Trainee Clinical Psychologist

Research supervisor: Dr James Kelly

Introduction

Background

Suicide is a key concern with an estimated 703,000 individuals dying by suicide every year (World Health Organization, 2021). Suicide is particularly prevalent in those experiencing psychosis whose lifetime risk of suicide death is estimated to be 5.6% (Hor & Taylor, 2010). In the UK, suicide deaths occur approximately 12 times more than expected in the general population, with significantly increased risk more than 10 years after onset of psychosis (Dutta et al., 2010). Whilst prevalence of suicide in people with psychosis is high, not all this population will experience suicidal ideation or go on to engage in suicide behaviours, suggesting the presence of moderating factors.

Research thus far has attempted to identify factors which increase the likelihood of suicide. Prominent models have utilised a transdiagnostic approach to attempt to distinguish who will and will not die by suicide (e.g., O'Connor & Kirtley, 2018). For example, the Integrated motivational-volitional (IMV) model suggests the presence of distinct, stage-specific moderators between the development of suicidal thoughts and the transition to suicidal behaviour (O'Connor & Kirtley, 2018). While people with psychosis share risk factors with the general population (e.g., Hawton et al., 2005), there are identified risk factors unique to people with psychosis. Given the prevalence of suicide in those experiencing psychosis, it is therefore important to confirm the outcomes of transdiagnostic research within this population in order to provide appropriate intervention.

People's deep-rooted beliefs about themselves and others, aka 'core schemas', have been linked to many mental health difficulties. Initial studies have suggested a relationship between negative schema and distress/poor social functioning in those with psychosis (Taylor & Harper, 2017). Negative schema have been found to relate to suicidality in those

experiencing psychosis (e.g., Cui et al., 2019). For example, Cui et al report that negative schema and rumination mediate the relationship between childhood trauma and suicidal ideation. While positive schema have been shown to buffer the relationship between stressful life events and suicidality (Johnson et al., 2010). These findings suggest that core schema may function as a motivational moderator of suicidal ideation for people with psychosis within the IMV model. The current study aims to explore whether core schema will account for unique variance in suicidal ideation in those with psychosis after demographic and clinical variables, defeat, and entrapment have been accounted for.

The findings would have important implications for clinical psychology as, if schema do indeed predict variance in suicidal ideation in this population, this could a) inform suicide risk assessment and b) provide a promising target for therapeutic interventions to reduce suicide risk for people with psychosis. A systematic review (Taylor, Bee & Haddock, 2017) has suggested that schema therapy results in reduced maladaptive schemas and improved symptoms for those with personality disorders. The evidence for other mental health disorders including psychosis is currently sparse, however the findings of this study would provide a rationale for schema therapy as a targeted intervention to reduce suicide risk in those with psychosis.

Aim and objectives

The current study aims to explore whether core schema will account for unique variance in suicidal ideation in those with psychosis after demographic and clinical variables, defeat, and entrapment have been accounted for.

- What is the relationship between Negative Schema and Suicidal Thinking and Behaviour in people with experiences of psychosis?
- What is the relationship between Negative Schema and Defeat and Entrapment?

- Do Negative Schema predict Suicidal Thinking and Behaviour after controlling for defeat and entrapment?
- Potential exploratory analysis #1: Do Negative Schema mediate the relationship between Defeat and Entrapment and Suicidal Thinking and Behaviour?
- Potential exploratory analysis #2: Do positive schema moderate the relationship between Negative Schema and Suicidal Thinking and Behaviour?

Method

Participants

Participants included in the study will be adults aged 18 and over, who self-report a diagnosis of psychosis (e.g. schizophrenia spectrum disorder) and/or recent psychosis-like experiences (e.g., hallucinations, delusions) and who report suicidal thinking in the past 6 months. Participants who do not speak English are excluded from this study. Participants will be recruited from social media websites such as Twitter and reddit, and through connecting with Voice Hearing Groups/Networks to disseminate the study link online. We have calculated that the minimum number of participants needed to detect an estimated small effect size (determined from the existing literature) is n = 100. If possible, participant recruitment will continue to an upper sample size limit of 160 participants. A commonly used 'Rule of Thumb' suggests a sample size where N > 50 + 8m (where m is the number of IVs) for testing the multiple correlation and N > 104 + m for testing individual predictors, using the larger of the two numbers (Green, 1991). This would equate to 130 participants. I am collecting data jointly with another researcher (Myles Sammon). As his population (people with psychosis who hear voices) is a smaller subsection of my population (people with psychosis), recruitment will need to continue until he reaches a sufficient number of participants (N = 81 - 114). Approximately 75% of people with a diagnosis of schizophrenia

report voice hearing (Waters & Fernyhough, 2017). Assuming a similar proportion within our sample, 152 participants would be required to recruit 114 voice hearers. As this is only an estimate of effect size, my rationale for 160 participants includes a safety margin to allow for additional participants.

We expect participant availability to be sufficient to fulfil the needed number of participants for this study based upon recent research into voice hearing/psychosis populations which have successfully utilised online data collection through social media to recruit a similar sample size (Lawrence et al., 2010).

Design

The study will employ a non-experimental, non-randomised, single-group, cross-sectional, correlational design. This design was chosen as it will allow the study to measure many different variables to explore the relationships between suicide, negative and positive schema, defeat, and entrapment. This is a suitable design within the scope and resources of the study and will allow us to understand if there may be a relationship between these factors and suicide in people who have experiences of psychosis and to develop hypotheses for future research.

Procedure

Participants will complete a series of questionnaires online through a link on the www.lancasteruni.eu.qualtrics.com. Data collection will be carried out in conjunction with a study being conducted by a second trainee, Myles Sammon, who is also under the supervision of Dr James Kelly. Participants who hear voices are eligible to complete his study and therefore will automatically be shown additional items relating to voice-hearing. Participants who are not eligible for this study (do not hear voices) will not be shown additional items.

Appendix A shows the process that participants will follow to take part in the study including all the measures that participants will complete. Participants included in this study will complete a total of 88 items. It is estimated that this will take approximately 15 minutes to complete.

Measures

Descriptive Variables

Demographics: Age, gender, age of onset, ethnicity, marital status, diagnosis, and voice-hearing status.

Clinical predictors: age, gender, age of onset

Clinical Predictors

Depression: Centre for Epidemiologic Studies Depression Scale (CESD-10) (Andresen et al., 1994). Most researchers use either the Beck Depression Inventory (for which we do not have the resources) or clinician-rated measures e.g., the Calgary Depression Scale, Hamilton Depression Rating Scale, Montgomery-Asberg Depression Rating Scale, PANSS-d, or BPRS-d (see reviews such as Cassidy et al., 2018). Other free, self-report measures (e.g., the depression subscales of the Depression, Anxiety and Stress Scale and Hospital Anxiety and Depression Scales) are not routinely used in suicide research. The CESD-20 is the only free, self-report measure of depression that is often used within this area of research. As the model we are building is designed to replicate what is known regarding predictors of suicide, the CESD is a valid and reliable scale which is comparable and contrastable to current literature. We have opted to use the CESD-10 (Andresen et al., 1994) to reduce the number of items participants are asked to complete. The CESD-10 has good psychometric properties, including within a psychiatric sample and correlates highly with the 20-item version (Björgvinsson et al., 2013; Miller et al. 2008).

Defeat and Entrapment: The Defeat Scale & The Entrapment scale (Gilbert and Allan, 1998) is a 32-item measure where responders score items on a 5-point scale from ‘not at all like me’ to ‘extremely like me’. The defeat scale assesses perceptions of defeat including those of failed struggle and low social rank. The entrapment scale assesses feelings of being trapped by internal/external events. Previous studies report the internal consistency for this measure in a psychosis population as 0.86 and 0.95 respectively (Taylor et al., 2010). These are the most used scales measuring the concepts of defeat and entrapment. In a recent meta-analysis of research investigating the relationship between defeat and entrapment and four mental health problems (depression, anxiety, PTSD and suicidality), 75% of studies included in the analysis measured defeat and entrapment using the Defeat Scale and Entrapment Scale (Siddaway et al., 2015).

Independent variables

Schema: This study will use the Brief Core Schema Scale (Fowler et al., 2006). They report good or acceptable internal consistency in clinical samples for all subscales (.78-.88). Principal components analysis of all items indicated a four-component solution corresponding to the subscales, suggesting a robust factor structure (Fowler et al., 2006). Correlations with other measures suggested that the BCSS assesses a distinct construct: discriminant validity was indicated with correlations between the negative self/other scales and the depression scale of the Depression Anxiety Stress Scales and correlations with the Rosenberg Self-Esteem Scale (Fowler et al., 2006). The BCSS has been used in numerous studies relating to suicidality in psychosis (e.g., Cui et al., 2019).

Dependent Variables

Suicide ideation: Suicide ideation will be measured using the Columbia–Suicide Severity Rating Scale (C-SSRS) which is a measure of suicidal ideation and behaviour that

has shown good validity and reliability (Posner et al., 2011). There are three versions of the C-SSRS available for use. This study will use the 6- item 'C-SSRS Self-Report Recent Form' which contains the entire 5 items of the suicidal ideation subscale of the C-SSRS plus 1 item which combines the suicidal behaviour subscale.

Suicidal Behaviour: Suicide attempts will be measured using an additional item which has been used in the Adult Psychiatric Morbidity Survey Q – DSH4 (McManus et al., 2007) and in more recent suicide research (O'Connor et al., 2018) 'Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?'. This question is taken from the Clinical Interview Schedule (CIS-R) which was found to be reliable and valid measure (Lewis et al., 1994).

Proposed analysis

Primary Hypothesis

First, a Pearson's R correlation will be used to examine associations between key variables. If the data is not normally distributed, then a Spearman correlation will be used. For the primary hypothesis, a forced entry multiple regression model will be used with the CSSRS as the dependent variable. The model would include age, gender, age of onset, depression, defeat, entrapment, and negative-self and negative-other, positive-self and positive-other subscales of the BCSS. Bivariate regressions will be checked against the adjusted beta values in the adjusted model. The regression model will be used to explore whether core schema explain unique variance in suicidality once demographic and clinical variables are accounted for.

Secondary Hypotheses

Provided this is significant and the sample is sufficiently powered, I will run further exploratory mediation analyses to investigate whether core schema fully/partially explain the

relationship between defeat and entrapment and suicidal thinking. It is of clinical importance to know this as, if defeat/entrapment only affects suicide severity through a person's core schema, this would suggest that interventions targeting schema could potentially reduce suicidality within the psychosis population.

Further exploratory moderation analysis will be conducted to investigate whether positive schema moderate the relationship between Negative Schema and Suicidal Thinking and Behaviour. 'Positive suicidology' is an area of research which combines suicide prevention with positive psychology (e.g., Hirsch et al., 2018). It suggests that there is a protective relationship between positive psychological constructs (e.g., experiencing happiness or positive self-appraisal) and suicide which is distinct from the absence of a risk factor (e.g., not experiencing low mood or self-critical thoughts). For example, positive schema have been shown to buffer the relationship between stressful life events and suicidality (Johnson et al., 2010). If positive schema affects the strength of the relationship between negative schema and suicidality, this suggests that interventions which aim to actively improve positive appraisals of self/others may be protective against suicide risk.

Practical issues

The measures in the survey will ask participants about a number of sensitive topics. The main potential for risk being the measure of suicidality which asks about recent experiences of suicidal thinking and/or behaviour. This has the potential to increase attention to suicidal thoughts and/or induce negative emotions (e.g., sadness, shame). Other topics that we will ask participants about which have the potential for bringing about feelings of discomfort through increases attention toward these experiences include: Questions relating to feelings of depression, and defeat and entrapment. Efforts have been made to select measures which have the fewest number of items to reduce the time burden to participants,

measures that use language that is least likely to cause discomfort or harm to participants whilst still being valid and reliable measures commonly used in previous research. We plan to involve people with lived experiences of hearing voices in the review process of the measures selected. To mitigate this risk, we will first provide clear and detailed information to participants in the poster and the participant information sheet regarding the sensitive topics that the questionnaire will ask about. It will clearly state that participants do not have to complete the study, and this will be repeated throughout the questionnaire. The participant information sheet, debrief sheet and each page of the study questionnaire will contain contact information for services which can provide additional support if needed. As the study will be published online, and is therefore accessible internationally, this will include a link to a website which provides details for suicide and anxiety helplines in most countries

Ethics and Governance

Ethical approval will be gained from Lancaster University Faculty of Health and Medicine Ethics Committee.

Patient and public involvement

We plan to involve people with lived experiences of psychosis experiences in the review process of the measures selected.

Dissemination Plans

It is planned to publish findings in a peer-reviewed academic journal identified jointly with Myles Sammon and our research supervisor, Dr James Kelly. It is also planned to feedback a summary of the research findings to participants who opt to receive this information by providing their email address through an anonymous link at the end of our Qualtrics survey.

Plain English Summary

Suicide is a major public health problem. People who experience psychosis are more likely to experience suicidal thinking and behaviour. Psychosis describes an experience where a person perceives or interprets reality in a very different way from people around them.

Defeat (feeling “knocked down” by life’s difficulties) and entrapment (feeling as though you are in an unbearable situation and cannot escape) are found to be significant predictors of suicide. People’s deep-rooted beliefs about themselves/others (‘core schemas’) have also been linked to suicidal thinking and to many mental health difficulties, including psychosis. This study will investigate the relationship between positive and negative beliefs about the self, defeat and entrapment, and suicidal thinking in people with psychosis.

The study will recruit adults with a diagnosis of psychosis and/or recent psychosis-like experiences (e.g., hallucinations, delusions) and report suicidal thinking in the past 6 months. Participants will complete a series of questionnaires online on one occasion.

Appendix 4-C: Recruitment Poster

RISK FACTORS FOR SUICIDE IN PEOPLE WHO EXPERIENCE PSYCHOSIS

WE ARE LOOKING FOR:

- Adults (aged 18 and over)
- with a diagnosis of psychosis **and/or** recent psychosis-like experiences (e.g., hallucinations, delusions)
- and who report suicidal thinking in the past 6 months.

to take part in a single survey contributing to two doctoral thesis research studies.

Study 1: Positive and Negative Schema, Defeat, Entrapment, and Suicidal Thinking in People with Experiences of Psychosis

Study 2: Self-Attacking Thoughts, Critical Voices, and Suicidal Thinking in People who Hear Voices

WHAT WILL I BE ASKED TO DO?

If you agree to be in this study, you will be asked to complete a survey which will take approximately 15 minutes.

You will not be asked for any identifiable information (e.g., your name) and you can exit the survey at any time prior to completion and your data will not be retained.

WHAT IS THIS STUDY ABOUT?

We are exploring the relationship between factors which may increase the risk of suicidal thinking in people who experience psychosis or psychosis-like experiences.

If you hear voices, you will be asked to complete some additional questions and your answers will also contribute to the second research project exploring the relationship between voice content and suicidal thinking. You do not have to hear voices to complete the survey.

WHERE CAN I GET MORE INFORMATION?

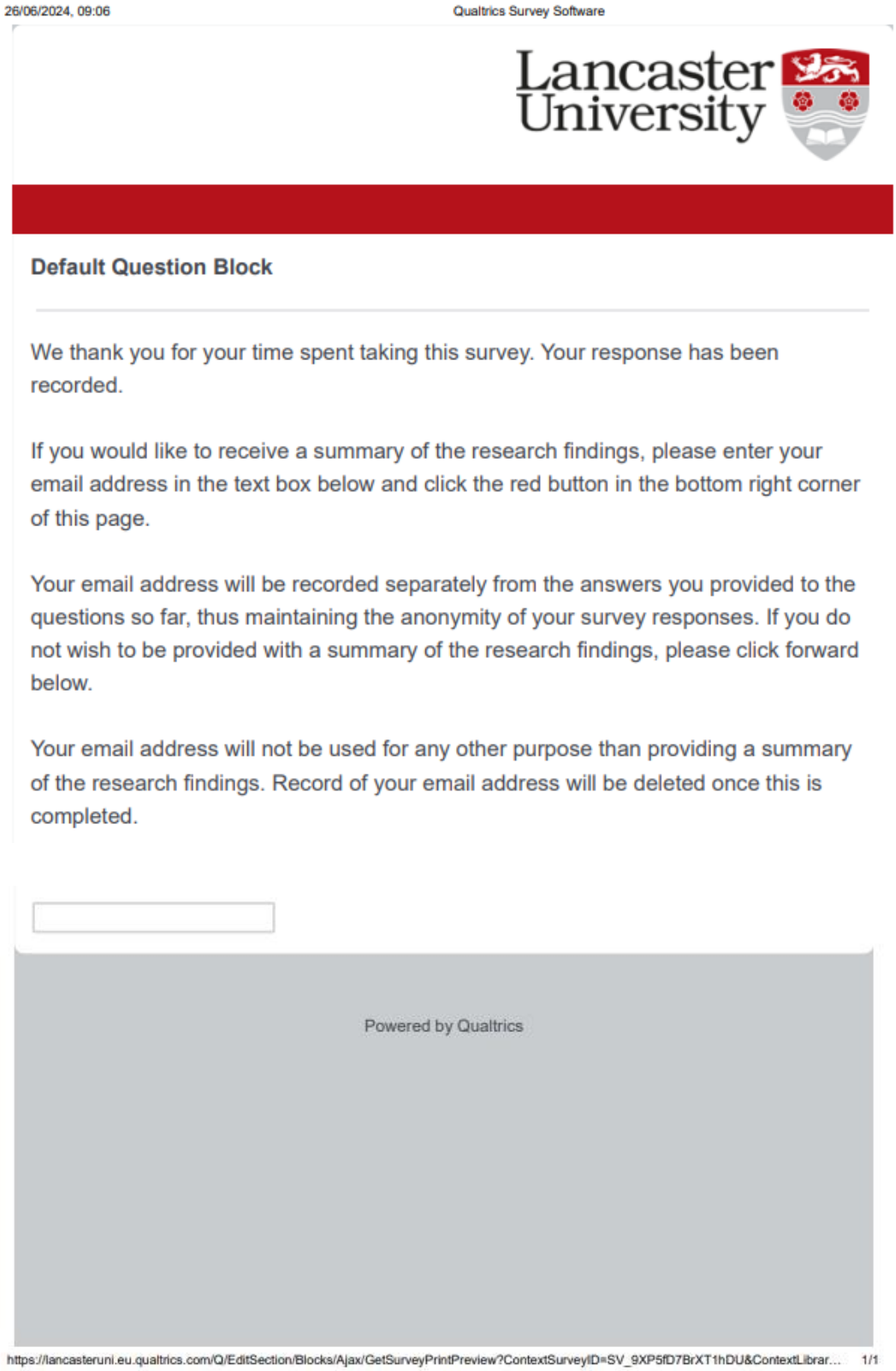
Please follow the link below for more details. If, after reading, you are happy to continue you will complete the questionnaire online.

If you have further questions about the study, please contact the main researchers:

Wren Little w.little1@lancaster.ac.uk
Myles Sammon m.sammon@lancaster.ac.uk
Supervisor: James Kelly j.a.kelly@lancaster.ac.uk

TO TAKE PART psychriskstudy.co.uk

Appendix 4-D: Optional Email Collection



Appendix 4-E: Debrief Statement

Debrief Statement

Thank you for participating in our study. Your responses have been useful in understanding the relationship between certain factors and suicidal thinking and behaviours in people with experiences of psychosis. One study is exploring people's deep rooted beliefs about themselves and others (core schemas) and suicide. The second study is investigating the role of critical voices in suicidal thinking.

If you have any questions about this study feel free to contact a member of the research team:
Myles Sammon (Trainee Clinical Psychologist, Lancaster University):
m.sammon@lancaster.ac.uk
Wren Little (Trainee Clinical Psychologist, Lancaster University): w.little1@lancaster.ac.uk
Dr James Kelly (Clinical Psychologist, Researcher, Lancaster University):
j.kelly@lancaster@ac.uk

Please be aware that we cannot offer clinical advice or support to individuals.

If you are feeling distressed and need to speak to someone, please click on the following link which contains contact information for services which can provide additional support:

https://lancasteruni.eu.qualtrics.com/jfe/form/SV_7ZEUpLBzPG6C3sO

Thank you for your time and cooperation.