Doctorate in Clinical Psychology

Lancaster University

Self-concept clarity, trauma and psychopathology

Laura J. Binsale

Academic Supervisor: Professor Bill Sellwood

Field Supervisors: Dr Phil Preston & Dr James Reilly

May 2017

Contents

Page Number

Statement of Word Count

Declaration

Acknowledgements

Thesis Abstract

Chapter One: Literature Review

Self-Concept Clarity and Psychopathology in Clinical and Non-Clinical Adult Populations: A Systematic Review

Abstract **1-2**

Introduction **1-3**

Methods **1-6**

Results **1-9**

Discussion **1-20**

Conclusion **1-29**

References **1-30**

Figures

Figure 1: *PRISMA diagram of inclusion* **1-43**

Tables

Table 1: *Search terms* **1-44**

Table 2: *Inclusion and exclusion criteria* **1-45**

Table 3: *Quality appraisal ratings for cohort and cross-sectional studies* **1-46**

Table 4: *Quality appraisal ratings for case-control studies* **1-47**

Table 5: *Descriptive characteristics of included studies* **1-48**

Table 6: *Aims and significant findings of included studies* **1-56**

Appendices

Appendix 1-A: *Detailed search strategy* **1-63**

Appendix 1-B: *Quality appraisal tool for cohort and cross-sectional studies* **1-68**

Appendix 1-C: *Quality appraisal tool for case-control studies* **1-69**

Appendix 1-D: *Quality appraisal inter-rater results* **1-70**

Appendix 1-E: *Guide for authors: Clinical Psychology Review* **1-71**

Chapter Two: Empirical Paper
Adverse Experiences in Childhood and the Onset and Development of Psychosis, Depression and Anxiety: The Role of Self-Concept Clarity

Abstract **2-2**

Introduction **2-3**

Hypotheses **2-7**

Methods **2-7**

Results **2-13**

Discussion **2-16**

Conclusion **2-28**

References **2-30**

Tables

Table 1: *Demographic variables and psychometric measures* **2-41**

Table 2: *Self-reported mental health history* **2-42**

Table 3: *Group Comparisons* **2-43**

Table 4: *Pearson's Correlations* **2-44**

Table 5: *Linear regression analyses* **2-45**

Table 6: *Binary logistic regression analyses* **2-45**

Appendices

Appendix 2-A: *Analysis of distribution* **2-46**

Appendix 2-B: *Baron and Kenny's (1986) approach to mediation* **2-48**

Appendix 2-C: *Guide for authors: Behaviour Research and Therapy* **2-50**

Chapter Three: Critical Appraisal **3-1**
The Conceptualisation of Self-Concept Clarity and a Critique of the Empirical Paper with a Specific Focus on Future Research Directions

The Conceptualisation of Self-Concept Clarity **3-2**

Limitations and Future Research Directions **3-5**

Clinical Implications **3-11**

Conclusion **3-13**

References **3-15**

Chapter Four: Ethics Application
Ethics Application and Appendices

IRAS Application **4-2**

Research Protocol **4-27**

Appendices

Appendix 4-A: *Participant Information Sheet* **4-47**

Appendix 4-B: *Consent Form* **4-53**

Appendix 4-C: *Study Debrief* **4-55**

Appendix 4-D: *Poster and Leaflet Advertisement* **4-59**

Appendix 4-E: *Demographic Questionnaire* **4-62**

Appendix 4-F: *Self-Concept Clarity Scale (SCCS)* **4-65**

Appendix 4-G: *Psychosis Screening Questionnaire (PSQ)* **4-67**

Appendix 4-H: *Patient Health Questionnaire (PHQ-9)* **4-69**

Appendix 4-I: *Generalised Anxiety Disorder Questionnaire (GAD-7)* **4-70**

Appendix 4-J: *Adverse Childhood Experiences (ACE)* **4-71**

Appendix 4-K: *NHS REC Provisional Opinion* **4-73**

Appendix 4-L: *NHS REC Favourable Opinion* **4-81**

Appendix 4-M: *HRA Approval* **4-83**

Appendix 4-N: *R&D Approval* **4-86**

Declaration

This thesis presents research undertaken for the Doctorate in Clinical Psychology program at the Faculty of Health and Medicine, Lancaster University, from January 2016 to May 2017. 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 : Laura Jessica Binsale

Signature :

Date :

Acknowledgements

I would like to thank Professor Bill Sellwood for guiding me through the thesis process and for such excellent supervision over the past 18 months. Thank you for your continued encouragement, you have supported me to grow and develop as both an academic writer and a researcher.

Thank you to Dr Phil Preston, who is partly responsible for the development of the current research having undertaken his own theses in the area of self-concept clarity. Thank you for your input throughout the process, your humour and intellectual approach to the work was greatly appreciated.

Dr James Reilly, thank you for your support throughout the entire process and for contributing your wealth of clinical expertise. Your influence in the participant recruitment strategy most certainly did not go unnoticed and for that I am extremely grateful.

The thesis project could not have been completed had it not been for all of the participants who consented to take part, I am so grateful to each and every one of you.

Last but not least, a huge thank you to the Hearing Voices Network who supported the research by publishing research advertisements through their website and social media accounts.

Statement of Word Count

	Text	**Appendices** *(including references, figures and tables)*	**Total**
Abstract	295	-	295
Literature Review	7983	12479	20462
Empirical Paper	7916	6153	14069
Critical Appraisal	3991	1045	5036
Ethics Section	5896	9801	15697
Total	26081	29478	55559

Abstract

Self-concept clarity (SCC) is defined as the “extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141). SCC is becoming an increasingly researched topic in relation to the onset and development of psychopathology. To date, there had been no systematic review addressing associations between SCC and psychopathology. Thus, Chapter 1 of the thesis aims to systematically identify, appraise and synthesise all available peer reviewed literature, which explored an association between SCC and psychopathology. The review includes twenty-two papers, which report on 29 individual studies, all of which explore a quantifiable relationship between SCC and psychopathology. Strong evidence was found to support an association between SCC and psychopathology in both clinical and non-clinical populations.

The empirical paper is reported in Chapter 2. This explores the relationship between adverse childhood experiences, SCC and psychopathology. Participants were allocated to one of three groups: psychosis (presence of psychotic experiences), anxiety/depression (moderate-severe levels of anxiety and/or depression) or control (no psychotic experiences and mild levels of anxiety/depression). Analyses revealed that participants in the psychosis and anxiety/depression groups reported significantly higher incidences of adverse childhood experiences compared to the control. Lower levels of SCC were associated with higher levels of depressive and anxious symptoms, congruent with the findings from the literature review. Levels of SCC did not significantly differ across the three groups.

The intricacy of SCC as a construct and its complex association with psychopathology was apparent throughout the process. In an attempt to conceptualise this relationship Chapter 3, the critical appraisal, discusses the similarities and differences between SCC and theoretically

related concepts. Further clinical implications are discussed and identified limitations of the current research are considered citing recommendations for future research.

Keywords: *Self-concept clarity (SCC), psychopathology, trauma, adverse childhood experiences*

Chapter One: Literature Review

Self-Concept Clarity and Psychopathology in Clinical and Non-Clinical Adult Populations: A Systematic Review

Prepared in accordance with the author guidance for:

Clinical Psychology Review

Total word count: 7983

Laura J. Binsale

Doctorate in Clinical Psychology

Faculty of Health and Medicine

Lancaster University

Lancaster

LA1 4YT

l.binsale@lancaster.ac.uk

Abstract

Self-concept clarity (SCC) is defined as the "extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable" (Campbell et al., 1996, p.141). In an attempt to better understand the underlying mechanisms associated with the onset and development of mental health difficulties, SCC is becoming increasingly researched. The current systematic review aimed to identify, synthesise and appraise all of the available peer-reviewed literature, which explored a direct quantifiable link between SCC and psychopathology. CINAHL, PubMed, PsychArticles, and PsychInfo were searched to identify relevant literature. Twenty-two papers met the inclusion criteria, reporting on 29 studies. These explore nine different categories of psychopathology including: anxiety, depression, psychosis, schizophrenia and psychotic like phenomena (PLEs), personality disorders, prolonged grief disorder, non-suicidal self-injury, social anxiety, and social phobia, in addition to several global measures of psychopathology. There was strong evidence to support the association between SCC and psychopathology; all of the included studies reported a significant association between low levels of SCC and the presence of psychopathology in clinical and non-clinical populations. Although the review established the presence of an association between SCC and psychopathology, the directionality and underlying mechanisms of this association remain unclear. Clinical implications and directions for future research are discussed.

Keywords: Self-concept clarity (SCC), psychopathology, mental disorders.

Self-concept clarity (SCC) is a structural aspect of the self, defined as the "extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable" (Campbell et al., 1996, p.141). It appears that in an attempt to better understand the underlying mechanisms associated with the onset and development of mental disorders, SCC is becoming an increasingly researched construct. Recent research has focused on exploring SCC in relation to multiple different categorisations of psychopathology, such as, anxiety disorders (Butzer & Kuiper, 2006; Stopa, Brown, Luke, & Hirsch, 2010), depression (Campbell et al., 1996; Peleg-Sagy & Shahar, 2015; Richman et al., 2016), schizophrenia (David Colin Cicero, Martin, Becker, & Kerns, 2016; Hasson-Ohayon et al., 2013; Noyman-Veksler, Weinberg, Fennig, Davidson, & Shahar, 2013), post-traumatic stress disorder (PTSD) (Keshet & Gilboa-Schechtman, 2016) and, personality disorders (Edwards & Bond, 2012; Roepke et al., 2011; Stucke & Sporer, 2002).

SCC is one of many theoretical attempts to conceptualise *the self*, however, the term itself remains elusive. According to Stopa (2009) the self consists of three broad categories: content, process and structure. It appears that SCC focuses on the content and structural aspects of the self, where content refers to specific information about the self and structure describes the way in which information about the self is organised. High levels of SCC are associated with greater levels of psychological wellbeing (Reyes et al. 2015) and relatively low levels of psychological distress (Schiller, Hammen & Shahar, 2016). SCC has also been associated with improved overall psychological adjustment (Bigler, Neimeyer, & Brown, 2001).

Despite an increasing body of research, which suggests that low levels of SCC are associated with personality disorders (Błażek, 2015), anxiety (Butzer & Kuiper, 2006) and post-traumatic stress disorder (PTSD) (Keshet & Gilboa-Schechtman, 2016), the process

underpinning these associations remains unclear. It has been suggested that individuals with uncertain self-concepts may be more susceptible to, and influenced by external stimuli (Campbell, 1990) and that an uncertain belief about oneself may result in an over-reliance on the opinions and evaluations of others (Wilson & Rapee, 2006). Thus, Wilson and Rapee (2006) suggest that impaired levels of SCC may be an especially pertinent characteristic of mental disorders, such as, depression, social anxiety and eating disorders whereby the individual affected focuses on the appraisals and evaluations of others.

SCC has been discussed as both a risk factor and a source of resilience. Schiller, Hammen and Shahar (2016) compared three theoretical models to examine the links between stress, SCC and psychopathology. Chronic stress emerged as a significant predictor of low levels of SCC. These findings were consistent with their proposed *scarring model*, which proposes that psychological distress erodes SCC. However, the study employed a cross-sectional design and, therefore, the direction of the association between SCC and chronic stress could not be ascertained. An alternative way to conceptualise these results could be that low levels of SCC increase an individual's susceptibility to stress. In fact, SCC when stable and internally consistent has been reported to protect an individual from major life stressors, as it may promote greater resilience to external negative appraisals (Campbell, 1990; Lee-Flynn, Pomaki, DeLongis, Biesanz, & Puterman, 2011).

It is likely that the relationship between SCC and psychopathology is complex and confounded by multiple psychosocial factors. For example, when individuals diagnosed with serious mental illness, experience low levels of stigmatisation related to their mental health they report higher levels of SCC compared to individuals who report high levels of stigmatisation (Hasson-Ohayon, Mashiach–Eizenberg, Lysaker, & Roe, 2016). Hasson-Ohayon et al. (2016) concluded that SCC may play a particularly important role in the development and maintenance of a coherent, positive and non-stigmatised sense of self,

which may in itself promote resilience. This is congruent with earlier research where SCC emerged as a significant predictor of perceived stigmatisation, suggesting that individuals with low levels of SCC may be more vulnerable to such experiences of stigmatisation (Noyman-Veksler et al., 2013), which could have a detrimental effect on their mental health.

The self is recognised as a construct which develops through relationships with others and the world (Gergen, 1985). Thus, a potential barrier to the development of a stable, consistent and confidently defined self-concept could be social isolation, which is a frequently cited concurrent factor associated with psychopathology (de Sousa, Spray, Sellwood, & Bentall, 2015; Van Os, Driessen, Gunther, & Delespaul, 2000). Individuals with a diagnosis of psychosis, report relatively few close relationships and these close relationships have been reported to predominantly involve family members and mental health professionals; wider social relationships being limited (Berry, Wearden, & Barrowclough, 2007). Consequently, this limited exposure to social interactions may inhibit the development of SCC. Due to the complexity of psychopathology, trans-diagnostic factors such as social isolation, may indirectly effect the relationship between SCC and psychopathology; thus, the review will consider the possible association of trans-diagnostic factors more generally.

Rationale and Aims

To date, there has been no systematic review addressing associations between SCC and psychopathology; yet SCC is becoming an increasingly researched topic in relation to the onset and development of psychopathology. The aim of the current review is to examine whether SCC is consistently associated with psychopathology and, if this is the case, what are the possible indications as to why this may be? The review will also examine whether SCC appears to emphasise particular categorisations of psychopathology.

The current review aims to systematically identify, appraise and synthesise all available peer-reviewed literature that explores an association between SCC and

psychopathology. The findings from the review could enhance our understanding of different causal factors underlying the development of mental disorders and could be used to inform future research and clinical practice. The review will consider how previous research findings including theoretical models and perspectives, could inform the conceptualisation of an association between SCC and psychopathology.

The review focuses on adult populations only and does not include childhood and adolescent populations. There is the possibility that research which explores SCC in children and adolescents, may capture significant changes in SCC as a result of the developmental and transitionary nature of these periods, particularly in relation to identity development (Erikson, 1968). Previous research has explored the role of SCC across adolescence and reported that lower levels of SCC predicted higher levels of depressive symptoms and anxiety symptoms over a four-year period. The authors recognise that this finding is specific to the adolescent period, highlighting the development of the self and identity which occurs during these years (Van Dijk et al., 2014). [1]

Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement constituted the framework for the review (Moher, Liberati, Tetzlaff, & Altman, 2009).

[1] The term psychopathology is at present understood to be the scientific study of mental disorders , one which explores their origin and development (Rudd, 2013). Psychopathology as a concept is embedded in the medical model, where mental disorders are diagnosed by medical professionals, following the identification of a collection of specific symptoms; informed primarily by texts such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). Despite the connotations associated with this terminology, such as, the risk of pathologising human and psychological distress; in an attempt to systematically identify and review, appropriate and available literature on this topic, the term psychopathology and associated terms, such as, mental disorders, appeared to capture the dominant discourse within the research literature and will be used throughout the review.

Protocol and Registration

The review was registered with the PROSPERO International prospective register of systematic reviews (2016:CRD42016052148) and is available from http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42016052148.

Search Strategy

A literature search was conducted on 16th November 2016 using online databases CINAHL, PubMed, PsychArticles, and PsychInfo. The search combined free text words and synonyms by applying either thesaurus (CINAHL, PsychArticles and PsychInfo) or Medical Subject Headings (MeSH) terms (PubMed), to represent the two different components of the review, self-concept clarity and psychopathology (see Appendix 1-A for the detailed search strategy). Table 1 summarises the subject terms used.

Inclusion and Exclusion Criteria

The inclusion criteria are outlined in Table 2. Papers were excluded if they applied qualitative methodology or if they recruited a population of children or adolescents (<18 years old at time of participation).

Study Selection

All titles and abstracts of the identified studies were screened. For studies deemed to be potentially eligible, the full texts were assessed.

Data Extraction

A data extraction tool was developed using Microsoft Excel and piloted on 15% of the included studies. Following the pilot, adaptations were made to the tool and the following descriptive data were extracted from the remaining studies: author(s), country, study design, sample size, sample population, clinical vs. non-clinical population, mean age (years), gender (percentage female), statistical analysis, mental health construct measured, psychometric measure of mental health construct, psychometric measure of self-concept clarity, additional

variables and associated measures included in the analysis, and key findings from the analysed interactions.

Quality Assessment

Quality appraisal tools developed by the National Institutes of Health (NIH) were used to appraise the quality of the included studies. Two separate tools were used: Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies (National Institutes of Health, 2014b; Appendix 1-B) is a 14-item measure, and Quality Assessment of Case-Control Studies (National Institutes of Health, 2014a; Appendix 1-C) is a 12-item measure, both of which focus on key aspects to evaluate the internal validity of the study. An overall global rating for each of the studies is then calculated and each study receives one of three overall ratings good (G), fair (F) and poor (P). All studies are awarded a score of 1 for each item they receive a 'yes' response to, for example, '*was the research question or objective in this paper clearly stated*?' a yes response would equate to score of 1 and a no, non-applicable (NA) or non-reported (NR) response would equate to a score of 0. For all cross-sectional and cohort studies a total score of 0-4 received an overall global rating of poor (P), 5-9 a global rating of fair (F) and 10-14 a global rating of good (G). For all case-control studies a total score of 0-3 received an overall global rating of poor (P), 4-7 a global rating of fair (F) and 8-12 a global rating of good (G). The aim was to use the scales to gain a general sense of the quality of studies and gain an understanding of any consistent areas of strength or weakness across studies. The ratings were not used to exclude studies.

Data Synthesis

A meta-analysis to assess the strength of the relationship between self-concept clarity and psychopathology was considered to be inappropriate given the diverse nature of psychopathology variables included in the studies and the heterogeneity of the measures. In

total 39 different measures of psychopathology were included in the reviewed studies. Thus, a narrative synthesis approach was adopted.

Risk of Bias

To reduce the risk of reporting bias, the included papers were quality appraised once the data extraction process was complete; this meant that the reviewer was blind to study quality and, thus, the risk of bias was reduced (Greenhalgh and Brown, 2014).

Results

A total of 468 references were identified by the search strategy using electronic databases CINAHL (17), PubMed (257), PsycArticles (5) and PsychINFO (173), and through searching the reference lists of papers included in the review (16). The titles and abstracts of all identified papers were read and the full article for papers that were difficult to ascertain whether to include/exclude from the review from the title and abstract. The full articles of all of the 22 included papers were read. Figure 1 illustrates a detailed flowchart of the search results.

Quality Appraisal

A subsample of the included studies (n = 8, 27%) were rated blind by an independent rater to establish the degree of inter-rater agreement; overall there was 100% agreement for global ratings. Although there was greater variation across individual items, where a 96.4% agreement rating was reported for individual items, this was considered to be a high level of consistency. See Appendix 1-D for further detail.

Of the included studies, one received an overall rating of poor (n=1, 3.5%), 17 received an overall rating of fair (n=17, 58.5%) and 11 received an overall rating of good (n=11, 38%). Individual item ratings and the final global ratings for each of the included studies can be found in Table 3 (cross-sectional and cohort) and Table 4 (case-control).

Characteristics of Studies and Populations

Twenty-two papers were included and together they comprised 29 individual studies. All of the included studies adopted one of the following observational designs: cross sectional (n=16, 55.2%), cohort (n=7, 24.1%), case-control (n=5, 17.2%), and one study applied a mixed methods design incorporating cross sectional and cohort methodology (n=1, 3.5%). The total sample across the studies was 5964 ($\bar{x}$ =205.7, range=40-744), the mean age range was 18.4-47.1 years, the average gender split was 56% female (one study had missing data; Richman et al., 2016, *study 2*), and the majority of studies used non-clinical samples (n=23, 79.3%).

Studies were undertaken across eight countries: USA (n=9, 31.1%), Israel (n=5, 17.2%), Canada (n=4, 13.8%), UK (n=4, 13.8%), The Netherlands (n=3, 10.3%), Germany (n=2, 6.9%), Philippines (n=1, 3.4%), and Poland (n=1, 3.4%), over a ten-year period, between 2006-2016.

The descriptive characteristics of the studies included in the review are summarised in Table 5. For each study the authors, publication year, country of origin, study design, sample size, gender, sample population, mental health construct and associated psychometric measures, and measure of self-concept clarity are presented.

Self-Concept Clarity

One of the eligibility criteria for the review was that a reliable and valid measure was used to measure SCC as defined by Campbell (1996). Only one measure of SCC met the eligibility criteria and that was the Self-Concept Clarity Scale (SCCS, Campbell et al., 1996), 28 of the studies used the full version of the SCCS (n=28, 96.5%) and one of the studies used an abbreviated 5-item version (n=1, 3.5%).

Characteristics of Psychopathology Variables, Associated Measures and Study Outcomes

Multiple variables relating to psychopathology were measured. These will be discussed in sub-sections relating to specific constructs. The aims and the significant main findings of each of the studies included in the review are presented in Table 6.

Anxiety Disorders.

Anxiety. A direct quantifiable relationship was measured between anxiety and SCC in three of the included studies (Butzer & Kuiper, 2006; Keshet & Gilboa-Schechtman, 2016; Kusec, Tallon, & Koerner, 2016;), all of which used different measures to quantify anxiety in non-clinical populations. These included: Costello-Comrey Anxiety Scale (CCAS; Costello & Comrey, 1967), Generalised Anxiety Disorder Questionnaire (GAD-Q-IV; Newman et al., 2002) and, State Trait Anxiety Inventory (STAI-S; Spielberger et al., 1983).

In all three of the studies SCC was significantly negatively associated with anxiety, with moderate effect sizes ranging from -.43 to -.65. Keshet and Gilboa-Schechtman (2016) explored the aftermath of sexual assault among women with varying levels of posttraumatic distress and reported the largest effect size ($r = -.65$, $p < .001$) of all of the studies which explored the relationship between SCC and anxiety. Kusec, Tallon and Koerner (2016) found that overall, SCC was significantly negatively associated with anxiety ($r = -.56$, $p < .01$) and further analyses of between group differences revealed that SCC was significantly lower in high GAD vs. low GAD groups [$t (7.43) = 1 .34$; $p < .001$]. Butzer and Kuiper (2006) reported that lower levels of SCC were associated with high self-reported ratings of anxiety ($r = -.43$, $p < .01$) and a mediation analysis revealed that SCC fully mediated the relationship between anxiety and social comparison.

Social anxiety. Social anxiety was investigated in non-clinical samples in two of the papers (Orr & Moscovitch, 2015; Stopa et al., 2010), one of which reported two studies

(Stopa et al., 2010). The Social Interaction and Anxiety Scale (SIAS; Mattick & Clarke, 1998) was used by two of the studies (n=2, 66.6%), to provide a quantitative outcome of social anxiety and the Subjective Units of Distress Scale (SUDS; Wolpe, 1958) was selected by the remaining study (n=1, 33.3%).

High trait social anxiety was significantly associated with lower levels of SCC at baseline ($r = -.44$, $p < .01$) and during a task ($r = -.52$, $p < .01$), where participants were asked to converse with an actor and either be honest or dishonest about their beliefs on a specific subject matter. In both conditions, participants with high trait social anxiety, versus low trait social anxiety, reported significantly lower levels of SCC ($B_{honesty} = -.15$, $p = .020$; $B_{dishonesty} = -.35$, $p < .001$). In addition, dishonest self-disclosure led to significantly reduced levels of SCC but only amongst participants with higher levels of social anxiety.

Stopa et al. (2010) also found that social anxiety was inversely associated with SCC ($r = -.55$, $p < .001$) and highly socially anxious participants reported significantly lower SCC than low socially anxious participants [$F(3,52) = 20.45$, $P < .001$, $n^2p = .30$].

Social phobia. Social phobia was measured in one study using the Social Phobia Scale (SPS; Mattick & Clarke, 1998), which is a behavioural measure of social phobia (Orr & Moscovitch, 2015). The study recruited a non-clinical sample. Social Phobia was a secondary measure of the study, with social anxiety being the primary focus. However, social phobia was significantly negatively associated with SCC at baseline ($r = -.40$, $p < .01$) and during the required task ($r = -.57$, $p < .01$). During the task participants were asked to converse with an actor and either be honest or dishonest about their beliefs on a specific subject matter.

Post-traumatic stress disorder (PTSD). PTSD was studied in one paper (Keshet & Gilboa-Schechtman, 2016), using the Posttraumatic Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997). The aim was to understand the relationship between SCC and post-traumatic distress in a non-clinical sample of women who had experienced sexual assault.

SCC was significantly negatively associated with posttraumatic distress ($r = -.51$, $p < .001$). Moreover, women who had experienced sexual assault had significantly lower levels of SCC compared to non-traumatised women; women who met the clinical threshold for PTSD, compared to women who did not meet the threshold, also had significantly lower levels of SCC.

Depression. The relationship between depression and SCC was evaluated 12 times in 12 studies (Butzer & Kuiper, 2006; Keshet & Gilboa-Schechtman, 2016; Lee-Flynn et al., 2011; Noyman-Veksler et al., 2013; Peleg-Sagy & Shahar, 2015; Richman et al., 2016; Roepke et al., 2011; Stopa et al., 2010; Weinberg et al., 2012). Three studies involved clinical sample populations (Noyman-Veksler et al., 2013; Roepke et al., 2011; Weinberg et al., 2012), the remaining nine recruited non-clinical populations. Five measures of depression were used; Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996) (n=4, 33.3%), Centre for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) (n=4, 33.3%) Calgary Depression Scale for Schizophrenia (CDSS; Addington, Addington & Schissel, 1990) (n=2, 16.7%), Derogatis Psychological Adjustment Scale – Depression Subscale (DPAS; *No reference provided or available*) (n=1, 8.3%), and Depression Scale (DS; Straus et al. 1999) (n=1, 8.3%).

A significant negative association between SCC and depression was reported in seven of the included studies, with moderate to large effect sizes ranging from -.30 to -.63. Keshet and Gilboa-Schechtman (2016) had the largest sample size within the depression sub-group and reported the largest significant association between depression and SCC ($r = -.63$, $p < .001$). Four of the included studies applied a cohort design and collected data on SCC and depression at two time points (T1 vs. T2). The first explored changes in SCC and depression over a six-week interval, in individuals with a diagnosis of schizophrenia and reported a significant association between depression and SCC at T1 ($r = -.39$, $p < .001$) and T2 (r = -

.30, p< .01) (Noyman-Veksler et al., 2013). Peleg-Sagy and Shahar (2015) examined whether SCC would predict a decrease in depressive symptoms over a 1-year interval. They reported that SCC was associated with depression at T1 (r = -.49, p < .001) and T2 (r = -.30, p < .001); however, despite the significant associations, SCC did not emerge as a predictor of depressive symptoms.

A further study, examined the relationship between depression and SCC over a six week interval in individuals with a diagnosis of schizophrenia-spectrum disorder, and reported a significant association at T1 (r = -.40, p < .001) but not at T2 (r = 0.18, p >.05) (Peleg-Sagy & Shahar, 2015). The reasons for this discrepancy are unclear. There was a reported increase in depression from T1 to T2 ($\bar{x}$= 5.76 vs. 6.35) and marginal increase in SCC ($\bar{x}$= 2.50 vs. 2.93). Lee-Flynn et al. (2011), reported that higher levels of SCC were significantly associated with fewer depressive symptoms at T2; [b=-0.21, t(171) = -2.52, p<.05]. Additional analyses revealed that for participants with lower levels of self-esteem (versus participants with high self-esteem), SCC was significantly, negatively associated with depressive symptoms.

One paper was comprised of two studies (Stopa et al., 2010), the first of which reported a significant inverse association between SCC and depression (r = -.55, p < .001). The subsequent study compared high vs. low socially anxious participant groups and reported that depression had a significant effect on SCC [F (3, 52) = 18.55, P < .001, n^2p =.28]; they reported that increases in depression scores were associated with reduced levels of SCC (r_s = -.70, p < .001).

Richman et al. (2016) conducted three studies to explore whether SCC mediated the relationship between loneliness and depression. Study 1, applied a cross-sectional design and reported that SCC significantly mediated the relationship between loneliness and depression in two different categorisations of participants; those who were not in a romantic relationship

(.06 to .24; k^2 = .21) and those who were in a romantic relationship (.04 to .23; k^2 = .19). Study two and study three applied cohort designs to explore directionality, the findings from both of which supported those of study 1; SCC was reported to mediate the relationship between loneliness and depression over a 2-year period.

Schizophrenia, psychotic symptoms, psychosis, and psychotic like experiences (PLEs)[2]**.** Schizophrenia, psychotic symptoms, psychosis, and psychotic like experiences (PLEs) were examined in 10 of the included studies (Berna et al., 2016; Cicero, Becker, Martin, Docherty, & Kerns, 2013; Cicero, Docherty, Becker, Martin, & Kerns, 2015; Cicero et al., 2016; de Sousa, Sellwood, Spray, Fernyhough, & Bentall, 2016; Evans, Reid, Preston, Palmier-Claus, & Sellwood, 2015; Noyman-Veksler et al., 2013; Weinberg et al., 2012). Five of the studies recruited clinical sample populations (Cicero et al., 2016; de Sousa et al., 2016; Evans et al., 2015; Noyman-Veksler et al., 2013; Weinberg et al., 2012) and the remaining five recruited non-clinical populations (Berna et al., 2016; Cicero et al., 2013, 2015).

The included studies selected 15 different psychometric measures to measure schizophrenia, psychotic symptoms, psychosis, and PLEs. The variability of these measures also meant that these constructs were conceptualised in significantly different ways. Psychotic symptoms were measured by the Community Assessment of Psychic Experience (CAPE; Mossaheb et al., 2012) (n=1, 5.3%), the Positive and Negative Syndromes Scale (PANSS; Kay et al., 1987) (n=3, 15.8%) and the Psychosis Screening Questionnaire (PSQ; Bebbington and Nayani, 1995) (n=1, 5.3%).

[2] There is considerable debate about the most helpful way of referring to the experiences described in this sub-section and this is reflected by the use of different terminology. However, an in depth discussion of this debate is beyond the scope of this review. There are subtle differences between each of these different terms; schizophrenia is defined as a mental disorder with a range of positive and negative symptoms, such as, hallucinations, delusions, social withdrawal and depression, where psychosis, is understood to be a range of experiences, including hearing voices, believing things that others find strange and speaking in a way that others find hard to follow (The British Psychological Society, 2016). PLEs are defined as “odd beliefs or magical thinking and unusual perceptual experiences” (David C. Cicero, Becker, Martin, Docherty, & Kerns, 2013) and are reported to be indicative of the development of psychosis and/or schizophrenia.

Positive symptoms of schizophrenia were measured using the Cardiff Anomalous Perceptions Scale (CAPS; Bell et al., 2006) (n=1, 5.3%) and the Peters Delusion Inventory (PDI; Peters et al., 2004) (n=2, 10.5%). Conversely, negative symptoms of schizophrenia were measured using the Revised Social Anhedonia Scale (RSAS; Eckblad et al., 1982) (n=1, 5.3%) and the Physical Anhedonia Scale (PhysAnh, Chapman et al., 1976) (n=1, 5.3%).

Psychotic like experiences (PLEs) were measured by the following: Perceptual Aberration Scale (PerAb; Chapman, Chapman & Raulin, 1978) (n=1, 5.3%), Magical Ideation (MagicId; Eckblad & Chapman, 1983) (n=1, 5.3%), The Structured Interview for Prodromal Syndromes (SIPS; Miller et al., 2003) (n=1, 5.3%), Scale of Prodromal Syndromes (SOPS; Miller et al., 2003) (n=1, 5.3%), The structured Interview for Assessing Perceptual Anomalies (SIAPA; Bunney et al., 1999) (n=1, 5.3%), and, Social Anhedonia Scale (SocAnh; Eckblad et al., 1982) (n=1, 5.3%). PLEs were also measured using a combined measure the Perceptual Aberration/Magical Ideation (PerMag), which is comprised of the PerAb and MagicId, this was used in 3 of the ten studies (n=3, 15.8%).

Associated variables, such as, thought disorder (TLC; Assessment of thought, language and communication, Andreasen, 1986) and paranoia (SQPS; Schiztypal Personality Questionnaire, Raine, 1991) were measured in addition to measures of schizophrenia, psychotic symptoms, psychosis, and PLEs by two of the 10 studies.

Due to the complexity of different measures within the included studies it is not possible to discuss each finding individually, however, all of the studies which measured schizophrenia, psychotic symptoms, psychosis, and PLEs, reported a significant negative association with SCC with effect sizes ranging from -.26 to -.57. The largest participant population of the included papers, contained three studies with a combined total sample size of n = 2135, (Cicero et al., 2013). They used a combined measure of PLEs, the PerMag and a significant negative association between SCC and the PerMag was reported in study 1 (r = -

.41, p <.001), study 2 (r = -.32, p <.001) and study 3 (r = -.37, p <.001). All three of the studies reported that an interaction between low SCC and *aberrant salience,* defined as the incorrect assignment of importance to neutral stimuli, were associated with the highest levels of PLEs.

Two of the studies compared levels of SCC in control vs. clinical groups; they reported that participants with a diagnosis of psychosis spectrum disorders scored significantly lower on SCC than controls [t (108) = -6.41; p <.001] (de Sousa et al., 2016) and participants with a diagnosis of psychosis reported significantly lower SCC versus a control group (U=150.50, z=-4.43, p <.001, r =-.57) (Evans et al., 2015).

Weinberg et al. (2012) reported that SCC was the only statistically significant predictor of positive symptoms measured by the PANSS (b=1.07, S.E. = .45, b=.20, t=2.37, p<.05), when compared to other potential predictors, such as, self-esteem, stress, perception of the self as ill, age and, gender. Further analyses revealed that when stress levels were high, SCC predicted an increase in positive symptoms over time.

Personality disorders. Two studies used a measure of personality disorder (Błażek, 2015; Roepke et al., 2011) but chose different assessment methods; Personality Disorders Questionnaire (PDQ; Cierpialkowska, 2009) (n=1, 50%) and Structured Clinical Interview for DSM-IV Personality Disorders (CISD-11; First et al. 1997) (n=1 50%).

Roepke et al. (2011) explored the potential impact that a Dialectic Behavioural Therapeutic (DBT) intervention may have on SCC in a clinical sample of women with a diagnosis of borderline personality disorder (BPD); they compared levels of SCC against reference data and found that women with a diagnosis of BPD had significantly lower SCC compared to the healthy participants (d = -2.21, p < .05). A further ANCOVA revealed a significant improvement of levels of SCC in the DBT intervention group [F(1, 36) = 30.4, p < .001] compared to a waiting list control group.

Błażek (2015) recruited a non-clinical sample population to explore whether SCC was correlated with characteristics of personality disorders. SCC was significantly negatively associated with eight out of 10 categorisations of personality disorder (as defined by the PDQ), with moderate effect sizes ranging from -.36 to -.64: paranoid ($r = -.51$, $p < .001$), schizoid ($r = -.37$, $p < .001$), schizotypal ($r = -.44$, $p < .001$), borderline ($r = -.39$, $p < .001$), histrionic ($r = -.36$, $p < .001$), narcissistic ($r = -.34$, $p < .001$), anxious ($r = -.64$, $p < .001$) and, dependent ($r = -.52$, $p < .001$). An overall significant negative association between SCC and personality disorders was reported in the study ($r = -.54$, $p < .001$). There was no significant association between SCC and antisocial or anankastic personality disorders.

Non-suicidal self-injury (NSSI). NSSI engagement, frequency and versatility were measured in one study (Lear & Pepper, 2015) using the Inventory of Statements About Self-Injury (ISAS; Klonsky & Glenn, 2009). A non-clinical sample population of undergraduate students were asked to estimate their lifetime frequency of 13 different NSSI behaviours; those who reported at least one occurrence of NSSI were allocated to the NSSI group, compared to those who reported no incidences of NSSI and allocated to the non-NSSI group. NSSI engagement was reported to be associated with overall lower levels of SCC and lifetime NSSI engagement emerged as a significant predictor of levels of SCC ($\beta = -.241$; $sr^2 = .217$; $p \leq .001$). Further analyses revealed that SCC was a significant predictor of NSSI versatility, accounting for almost a quarter of unique variance ($\beta = -.57$; $sr^2 = .234$; $p < .001$).

Prolonged grief disorder (PGD). PGD was measured in three studies reported in one paper (Boelen, Keijsers, & van den Hout, 2012); each of the studies used different non-clinical participant sample populations. An abbreviated version of the Inventory of Complicated Grief-revised (ICG-r; Prigerson et al., 2009) was used in all three studies (n=3, 100%). The relationship between SCC and PGD was explored by applying both cross-

sectional and cohort study designs to further understand the association. Lower levels of SCC were found to predict PGD severity (r =-.50, p <.001; R^2 = 29.5%, F[2,66]=13.39, p <.001).

Over time there was a significant decline from retrospective ratings of SCC at T1 to T2 ($\bar{x}$, 17.9; SD, 4.1 vs. $\bar{x}$, 14.1; SD, 4.8; t[114] = 7.99, p<.001; Cohen's *d* 0.85) and a greater reduction in SCC from T1 to T2 was significantly correlated with more severe PGD symptoms at T2 (r =-.48, p <.001). Self-esteem, depressive avoidance, and rumination, independently emerged as significant mediators of the relationship between low SCC and PGD.

Global measures of psychopathology. Two studies evaluated relationships between SCC and general symptoms in non-clinical sample populations (Reyes et al., 2015; Schiller, Hammen, & Shahar, 2016). The Mental Health Inventory (MHI; Veit & Ware, 1983) was used to measure psychological distress and psychological wellbeing in the general population (n=1, 50%) and the Brief Symptom Inventory (BSI; Derogatis & Spencer, 1982) (n=1, 50%) was used to assess a wide range of self-reported psychopathological symptoms including depression, somatization, obsessive-compulsive symptoms, interpersonal sensitivity, anxiety, hostility, phobic anxiety, paranoid ideation, and psychotic symptoms.

Schiller, Hammen, & Shahar (2016) recruited a sample of undergraduate students and collected data at three time points; during the first month of the academic year (T1), immediately after the first examination period (T2) and at the end of the academic year (T3). SCC was reported to be significantly negatively associated with overall BSI scores at TI (r = -.53, p <.05), T2 (r = -.58, p < .05) and T3 (r = -.60, p< .05). Cross-lagged structural equation modelling revealed that at T1 levels of SCC predicted T2 BSI (b=-.158, S.E.=.048, β=-.20, C.R.=-3.565, p=.01). Included in these analyses was an additional variable, chronic stress, which was reported to predicted levels of SCC at T3 (b=-.038, S.E.=.012, β=-.16,

C.R.=-3.074, p=.002), suggesting that chronic stress may cause impairments in SCC over time.

Findings from Reyes at al. (2015) were congruent with previous findings, as a significant positive interaction was reported between SCC and the MHI ($r = .53$, $p < .001$), where higher scores on the MHI indicate more experiences of psychological wellbeing as opposed to psychological distress.

Discussion

The purpose of the current review was to systematically identify, appraise and synthesise all available studies, which examined a direct association between SCC and psychopathology. The review aimed to establish whether SCC is a consistent factor associated with psychopathology in clinical and non-clinical populations and whether certain types of symptom might be associated with SCC in particular. Twenty-two papers reporting 29 studies were included. Strong evidence was found to support links between SCC and psychopathology; all of the included papers reported significant associations between SCC and a wide array of symptoms including psychosis, depression, anxiety, self-harm and personality difficulties. One way to conceptualise the trans-diagnostic presentation of SCC is that reduced levels of SCC may be an indirect consequence of the experience of mental disorders and that the Self-Concept Clarity Scale (SCCS; Campbell et al., 1996) may capture effects such as increased uncertainty, which may be present during such experiences. However, an alternative perspective is that SCC may be a trans-diagnostic vulnerability factor in the onset and development of psychopathology in adulthood.

The largest of all of the included papers, reported a total sample size of 2135 participants across three individual studies (Cicero et al., 2013). All of the three studies explored psychotic like experiences (PLEs) in a non-clinical population of undergraduate students. They reported significant associations between SCC and PLEs in all three studies.

The generalisability of the results from these studies are questionable as a sample population of students may be assumed to function well, compared to clinical populations. However, it has been reported that the prevalence of psychosis in undergraduate populations is similar to that of the general population (Lenzenweger, Lane, Loranger, & Kessler, 2007).

Only one of the included studies recruited a clinical population and offered a direct therapeutic intervention to explore changes in levels of SCC (Roepke et al., 2011). Roepke et al. (2011) recruited a sample population of women with a diagnosis of borderline personality disorder (BPD) and offered a 12-week intervention of dialectic behaviour therapy (DBT). Compared to a waiting list control group, participants who received the DBT intervention reported significantly higher levels of SCC and significantly lower levels of depression after a period of 10-weeks; no significant changes were noted in the control group. This highlights the potential role that therapeutic interventions may have in facilitating individuals to develop a more stable, clear and consistent self-concept.

Keshet and Gilboa-Schetchman (2016) aimed to further understand the impact of sexual assault on SCC in a female sample with varying levels of post-traumatic distress. Their findings revealed that women who had experienced sexual assault had significantly lower levels of SCC compared to women who had sustained a motor-vehicle accident or reported no history of trauma. Further analyses revealed the largest effect size of all the included studies for the association between SCC and anxiety, and SCC and depression.

It is possible that the large effect sizes for the anxiety and depression variables are confounded by the presence of PTSD as a proportion of their sample population met the clinical threshold for a diagnosis of PTSD (n = 38, 16%). However, as this was a relatively small proportion of the overall sample population (< 20%), it is more likely that the large effect sizes, are representative of the aftermath of trauma related to sexual assault.

Two further studies considered the relationship between trauma and SCC; bereavement and loss (Boelen et al., 2012) and childhood trauma (Evans et al., 2015) . Boelen et al. (2012) conducted a series of studies to explore the relationship between SCC and prolonged grief disorder (PGD); using a retrospective design they reported a significant decline in levels of SCC from the time preceding the bereavement to immediately post loss. Further analyses revealed that a greater reduction in SCC between these two time points was significantly associated with greater PGD severity.

Their findings indicated that it was the significant decline in SCC, which contributed to the initial development of PGD, but that the maintenance of PGD in the long-term was partially determined by how quickly this reduction in SCC could repair. Despite these findings, SCC was rated retrospectively and thus, the causal relationship between SCC and PGD cannot be fully established. Future research that aims to replicate this study using a prospective longitudinal study would be beneficial as it may help to clarify potential causal linkages.

It is evident that the findings of the present review strongly support the presence of an association between SCC and psychopathology; yet, the conceptualisation of the underlying mechanisms behind this association remains unclear. In an attempt to further understand the potential links between SCC and psychopathology, other trans-diagnostic factors associated with the onset and development of mental disorders are considered. For the purpose of this discussion, two key areas, trauma and attachment, are explored. However it is important to note that a further discussion of how this conceptualisation fits with other theoretical approaches is included in Chapter 3.

The relationship between childhood trauma and psychopathology in adulthood is accepted widely and the experience of childhood trauma appears to be a trans-diagnostic issue (Rossiter et al., 2015; Tonmyr, Jamieson, Mery, & MacMillan, 2005; Zlotnick et al.,

2008). A recent review of 44 studies found strong evidence to support this association and reported that physical abuse, sexual abuse and neglect were associated with both anxiety disorders and mood disorders whereas, emotional abuse was found to be associated with a diagnosis of schizophrenia or personality disorders (Carr, Martins, Stingel, Lemgruber, & Juruena, 2013). According to Evans et al. (2015), the experience of childhood trauma could disrupt the development of an integrated self-concept. They found that for childhood trauma and occurrence of psychosis to be associated there had to be reduced levels of SCC (Evans et al., 2015).

An active, satisfying and reciprocal relationship between an infant and their primary caregiver creates the foundation from which the infant's sense of identity begins to develop (Balbernie & Adams, 2005). Thus, highlighting the connection between early attachment relationships and the development of the self-concept. This is interesting given that a higher prevalence of insecure attachments have been found in clinical populations, compared to non-clinical populations (Dozier, 1990; Dozier, Stevenson, Lee, & Velligan, 1991); specifically, significantly higher rates of dismissing-avoidant attachment styles have been found in psychiatric versus control samples (Dozier et al., 1991).

Attachment theory (Bowlby, 1969) proposes that Internal Working Models (IWM) are internal representations of self and others, which are formed within the attachment relationship between an infant and its caregivers (Bowlby, 1973). Over time, individuals internalise features of these early relationships, and the models shape their views of self and others (Feeny, Cassidy, & Ramos-Marcuse, 2008). IWMs of self include representations and beliefs about the self in relation to others, such beliefs are considered to be central components in the development of the self-concept (Collins & Read, 1990). According to Collins and Read (1994), if an infants' primary experience of care-receiving is one that is inconsistent and unpredictable, it is likely that they would develop an IWM which is

inconsistent, unstable and lacks clarity, all of which are key characteristics of SCC. A series of studies which explored attachment styles and mental representations of the self, reported that individuals identified as securely attached had a more coherent self-structure, compared to individuals who were insecurely attached (Mikulincer, 1995).

Strengths and Limitations

The review was conducted using rigorous methodology, which can be replicated and used as a template in future reviews. The search strategy systematically identified all of the included studies in the review. Although additional potential papers (n=16) were identified through reference list searching, none of these papers met the criteria for inclusion in the review and, thus all of the additional papers were excluded, suggesting that the search strategy employed was robust.

The quality appraisal process did not aim to exclude papers of poorer quality; therefore, all papers systematically identified using the search strategy that met the inclusion criteria were included in the review and consequently, reporting bias was reduced. However, this is also a drawback of the review, as the large number of studies and variability of the studies included in the review prevented a more in depth discussion of the findings. The quality appraisal process highlighted particular areas of strength and weakness of the included studies. For example, the authors of the studies inconsistently reported specific information on the recruitment process, such as, the participation rate of eligible persons and the applied inclusion and exclusion criteria (see Table 3 and Table 4). A lack of clarity on the recruitment process reduced the overall internal validity of each of the studies.

A lack of sample size justification or power description was also present in the majority of the included studies, as only one of the included studies reported a sample size and power calculation (Berna et al., 2016). However, as all of the included studies reported a significant association between SCC and psychopathology, it can be assumed that they were

appropriately powered. The majority of included studies (n = 25, 86%) controlled for confounding variables, the primary approach taken towards this was the utilisation of a regression analysis. Although confounding variables were measured and appropriately adjusted, the majority of these studies did not comment further on this process within the discussion, this type of discussion would have further strengthened the reporting and would have also been an interesting addition to the studies

The current review is at risk of publication bias as only peer-reviewed papers were included in the review and none of the grey literature was considered. Therefore, there is the possibility that not all of the available literature in this area has been reviewed. This is of particular importance, given that all of the included studies reported significant associations and moreover, research papers, which report significant findings, are more likely to be submitted and accepted for publication (Dundar and Fleeman, 2014). Having said this; there is still the potential for large variations in quality both between and within peer-reviewed papers, as can be evidenced in relation to the quality appraisal process within the current review.

The Self-Concept Clarity Scale (SCCS, Campbell, et al. 1996) was utilised in all of the included studies. The SCCS is a 12-item measure of SCC that asks participants to rate how strongly they agree/disagree with each individual statement; examples of included statements include *my beliefs about myself often conflict with one another* and *when I think about the kind of person I have been in the past, I'm not sure what I was really like.* The measure has good internal consistency (α=0.86) and test-retest reliability (r=0.79) (Campbell, Assanand, & Paula, 2003). However, the measure which was originally published in the English language, was translated in eight of the included studies into a second language (Berna et al., 2016; Błażek, 2015; Boelen et al., 2012; Keshet & Gilboa-Schechtman, 2016;

Noyman-Veksler et al., 2013; Reyes et al., 2015; Roepke et al., 2011; Schiller et al., 2016)*;* not all of which, included updated data on the internal consistency and test-retest reliability.

The items included in the measure could also be discussed in relation to various other theoretical models where an unclear sense of self could be understood within an insecure attachment framework (Bowlby, 1988) and a poorly developed sense of self. The aforementioned item, which states *when I think about the kind of person I have been in the past, I'm not sure what I was really like;* would contribute to an overall lower score on the scale if a strongly agree response was selected. However, the dialogical model of self (Hermans, Kempen, & Van Loon, 1992) views the self, and thus the development of the self as a lifelong process where sense of self can change and fluctuate to mirror changes in situation and time. The dialogical model of the self, proposes that an individual will hold multiple *I* positions and that shifts between these *I* positions are continuous and dynamic. Therefore, in the context of this process, it is understandable why one may not have a clear sense of what they were really like in the past.

The majority of the included studies recruited non-clinical populations to explore the presence of symptoms associated with psychopathology. Although significant associations were present between the measures of psychopathology and levels of SCC in these non-clinical populations, it is possible that the participants did not meet the clinical cut-off levels required for such measures and thus, the generalisability of such findings to clinical populations is questionable.

Clinical Implications

The findings of the review may suggest that SCC may be a trans-diagnostic vulnerability factor that has a role in maintaining symptoms of psychopathology. According to Stopa et al. (2010) one way that SCC may contribute to the maintenance of social anxiety is that low levels of SCC may result in an increased focus on the perceived appraisals from

others. That is, if you think that another person thinks less of you in a social situation, then unless you are secure in the knowledge regarding your own attributes, this is likely to have a significant impact. This idea could apply beyond social anxiety and may play a role in the maintenance of depression, eating disorders, paranoia and clinical presentations, which focus on understanding how others view the person affected.

Fundamentally, those with reduced SCC may be highly attuned to perceived appraisals and evaluations from others. During social interactions this could result in a limited ability to fully engage with the present moment, as the mind may be preoccupied as it attempts to pre-empt what the other person is thinking. This approach could also result in increased rumination as the individual may re-play such interactions in an attempt to gain greater clarity. Therefore, specific interventions focused on reducing rumination, self-focused attention and hyper-vigilance to external stimuli, may be beneficial. Such interventions may seek to increase present moment awareness and increase an individual's capacity to de-centre from the thoughts regarding perceived evaluations; they may include interventions drawn from approaches such as Acceptance and Commitment Therapy (ACT; Luoma, Hayes, & Walser, 2008) and Mindfulness Based Cognitive Therapy (MBCT; Teasdale, Williams, & Segal, 2014).

Roepeke et al. (2011) used a case-control design to explore the impact of a 12-week DBT intervention on levels of SCC in a population of women who had received a diagnosis of borderline personality disorder. They reported a significant improvement in SCC in the DBT intervention group; no significant changes to SCC were reported in the waiting list control group. DBT as an intervention is focused on the development of new skills aimed at increasing capacity to tolerate distress, navigate interpersonal relationships and regulate emotions, in addition to the integration of core mindfulness skills (Linheman, 2015). It is unclear which aspect of the DBT intervention resulted in the increase in levels of SCC. One

possible hypothesis is that the continuous mindfulness practice, and thus present moment awareness allowed for greater clarity of SCC. As discussed above the practice of mindfulness may increase an individual's capacity to de-centre from thoughts and behaviours, which may perhaps maintain feelings of uncertainty such as rumination.

It would be useful to explore the impact of other psychotherapeutic interventions on levels of SCC. A recent review explored changes in self-related constructs following Cognitive Behaviour Therapy (CBT) in individuals experiencing social anxiety (Gregory & Peters, 2017). They found evidence to suggest that following such interventions participants reported reductions in self-related negative thoughts and beliefs, in addition to improvements in other self-construct domains such as, self-esteem, self-focused attention and self-evaluation.

Future Research Directions

As a result of methodological limitations and the heterogeneity of included psychometric measures a meta-analysis could not be completed as part of the review. As more studies accrue, to further understand the relationship between SCC and psychopathology, it would be beneficial to focus on undertaking separate meta-analyses on each of the identified sub-categorisations of psychopathology. This would facilitate a greater understanding of whether SCC is particularly related to one area of psychopathology and what the potential theoretical links for this may be. However, one problem in distinguishing between different types of psychopathology is the high levels of comorbidity. For example, it would be difficult to understand the origins of psychotic symptoms in this context as they frequently co-occur with anxiety and depression (Braga, Reynolds, & Siris, 2013; Freeman & Garety, 2003).

The included studies explored the relationship between SCC and other factors, which may influence the relationship between SCC and psychopathology more generally, such as,

autobiographical memory, self-esteem, stress, rumination, social comparison, aberrant salience, intolerance of uncertainty, dishonest self-disclosure, self-stigma, and perceived stigmatisation. A discussion of these findings was beyond the scope of the review, however, future research would benefit from further exploring these constructs and their relationship to SCC, in an attempt to contribute to the conceptualisation of the interaction between SCC and psychopathology.

The current review highlights the need to explore and define theoretical links between SCC and psychopathology and thus, it is recommended that this is the focus of future research in this area, with specific attention paid to longitudinal study designs to explore the direction of causality.

Conclusion

The review provides strong evidence to support the role of SCC in psychopathology in adulthood; all studies included in the review reported a significant association between lower levels of SCC and higher levels of psychopathology. This association was reported across nine categories of psychopathology. Although the review highlights the potential importance of the role of SCC in psychopathology, the directionality of this association remains unclear. In an attempt to conceptualise the association between SCC and psychopathology, the review incorporates literature on attachment and the impact of trauma; however, further research to explore and define the theoretical links between SCC and psychopathology is crucial to advance our understanding of the findings of the current review.

References

Addington, D., Addington, J., & Schissel, B. (1990). A depression rating scale for schizophrenics. *Schizophrenia Research*, *3*(4), 247–251. https://doi.org/10.1016/0920-9964(90)90005-R

Andreasen, N. C. (1986). Scale for the Assessment of Thought, Language, and Communication (TLC). *Schizophrenia Bulletin*, *12*(3), 473–482. https://doi.org/10.1093/schbul/12.3.473

Balbernie, R., & Adams, C. (2005). Health visitors and adult mental health: the future begins here. *Community Practitioner : The Journal of the Community Practitioners' & Health Visitors' Association*, *78*(11), 389. https://doi.org/Retrieved from https://search-proquest-com.ezproxy.lancs.ac.uk/docview/213354316?accountid=11979

Bebbington, P., & Nayani, T. (1995). The psychosis screening questionnaire. *International Journal of Methods in Psychiatric Research*, *5*, 11–19. https://doi.org/1049-8931/95/010011-09

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An Inventory for Measuring Clinical Anxiety: Psychometric Properties. *Journal of Consulting and Clinical Psychology*, *56*(6), 893–897. https://doi.org/10.1037/0022-006X.56.6.893

Beck, A. T., Steer, R. A., Ball, R., & Ranieri, W. F. (1996). Comparison of Beck Depression Inventories-IA and-II in Psychiatric Outpatients. *Journal of Personality Assessment*, *67*(3), 588–597. https://doi.org/10.1207/s15327752jpa6703_13

Bell, V., Halligan, P. W., & Ellis, H. D. (2006). The Cardiff Anomalous Perceptions Scale (CAPS): A New Validated Measure of Anomalous Perceptual Experience. *Schizophrenia Bulletin*, *32*(2), 366–377. https://doi.org/10.1093/schbul/sbj014

* Berna, F., Göritz, A. S., Schröder, J., Martin, B., Cermolacce, M., Allé, M. C., … Moritz, S. (2016). Self-disorders in individuals with attenuated psychotic symptoms: Contribution of a dysfunction of autobiographical memory. *Psychiatry Research, 239*, 333–341. https://doi.org/10.1016/j.psychres.2016.03.029

Berry, K., Wearden, A., & Barrowclough, C. (2007). Adult attachment styles and psychosis: an investigation of associations between general attachment styles and attachment relationships with specific others.(Author abstract)(Report). *Social Psychiatry and Psychiatric Epidemiology*, *42*(12), 972. https://doi.org/10.1007/s00127-007-0261-5

Bigler, M., Neimeyer, G., & Brown, E. (2001). The divided self revisited: effects of self-concept clarity and self-concept differentiation on psychological adjustment. *Journal of Social and Clinical Psychology*, *20*(3), 396–415. https://doi.org/10.1521/jscp.20.3.396.22302

* Błażek, M. (2015). Structural aspects of self in personality disorders and the quality of life. *Current Issues in Personality Psychology*, *3*(1), 42–50. https://doi.org/10.5114/cipp.2015.50174

* Boelen, P. A., Keijsers, L., & van den Hout, M. A. (2012). The role of self-concept clarity in prolonged grief disorder. *Journal of Nervous and Mental Disease*, *200*(1), 56–62. https://doi.org/10.1097/NMD.0b013e31823e577f

Bowlby, J. (1969). *Attachment and loss, Volume 1: Attachment* (2nd ed.). New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss. Volume II: Separation*. London: Hogarth Press.

Bowlby, J. (1988). *A secure base: Clinical applications of attachment theory*. London: Routledge.

Braga, R. ., Reynolds, G. ., & Siris, S. . (2013). Anxiety comorbitity in schizophrenia. *Psychiatry Research*, *210*(1), 1–7. https://doi.org/10.1016/j.psychres.2013.07.030

Bunney, W. E., Hetrick, W. P., Bunney, B. G., Patterson, J. V., Jin, Y., Potkin, S. G., & Sandman, C. A. (1999). Structured Interview for Assessing Perceptual Anomalies (SIAPA). *Schizophrenia Bulletin*, *25*(3), 577–592. https://doi.org/10.1093/oxfordjournals.schbul.a033402

* Butzer, B., & Kuiper, N. A. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences*, *41*(1), 167–176. https://doi.org/10.1016/j.paid.2005.12.017

Campbell, J. D. (1990). Self-Esteem and Clarity of the Self-Concept. *Journal of Personality and Social Psychology*, *59*(3), 538–549. https://doi.org/10.1037/0022-3514.59.3.538

Campbell, J. D., Assanand, S., & Paula, A. D. (2003). The Structure of the Self-Concept and Its Relation to Psychological Adjustment. *Journal of Personality*, *71*(1), 115–140. https://doi.org/10.1111/1467-6494.t01-1-00002

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-Concept Clarity: Measurement, Personality Correlates, and Cultural Boundaries. *Journal of Personality and Social Psychology*, *70*(1), 141–156. https://doi.org/10.1037/0022-3514.70.1.141

Carr, C., Martins, C., Stingel, A., Lemgruber, V., & Juruena, M. (2013). The Role of Early Life Stress in Adult Psychiatric Disorders A Systematic Review According to Childhood Trauma Subtypes. *J. Nerv. Ment. Dis.*, *201*(12), 1007–1020. https://doi.org/10.1097/NMD.0000000000000049

Chapman, L. J., Chapman, J. P., & Raulin, M. L. (1976). Scales for physical and social anhedonia. *Journal of Abnormal Psychology*, *85*(4), 374–382. https://doi.org/10.1037/0021-843X.85.4.374

Chapman, L. J., Chapman, J. P., & Raulin, M. L. (1978). Body-image aberration in schizophrenia. *Journal of Abnormal Psychology*, *87*(4), 399–407. https://doi.org/10.1037/0021-843X.87.4.399

* Cicero, D. C., Becker, T. M., Martin, E. A., Docherty, A. R., & Kerns, J. G. (2013). The Role of Aberrant Salience and Self-Concept Clarity in Psychotic-Like Experiences. *Personality Disorders: Theory, Research, and Treatment*, *4*(1), 33–42. https://doi.org/10.1037/a0027361

* Cicero, D. C., Docherty, A. R., Becker, T. M., Martin, E. A., & Kerns, J. G. (2015). Aberrant salience, self-concept clarity, and interview-rated psychotic-like experiences. *Journal of Personality Disorders*, *29*(1), 79–99. http://dx.doi.org.ezproxy.lancs.ac.uk/101521pedi201428150

* Cicero, D. C., Martin, E. A., Becker, T. M., & Kerns, J. G. (2016). Decreased self-concept clarity in people with schizophrenia. *Journal of Nervous and Mental Disease*, *204*(2), 142–147. https://doi.org/10.1097/NMD.0000000000000442

Cierpiałkowska, L. (2009). Questionnaire of Personality Disorders (unpublished experimental version). Poznan: Univeristy of Adam Mickiewicz.

Collins, N. L., & Read, S. J. (1990). Adult Attachment, Working Models, and Relationship Quality in Dating Couples. *Journal of Personality and Social Psychology*, *58*(4), 644–663. https://doi.org/10.1037/0022-3514.58.4.644

Costello, C. G., & Comrey, A. L. (1967). Scales for measuring depression and anxiety. *The Journal of Psychology*, *66*(2), 303. https://doi.org/ 10.1080/00223980.1967.10544910

* de Sousa, P., Sellwood, W., Spray, A., Fernyhough, C., & Bentall, R. (2016). Inner Speech and Clarity of Self-Concept in Thought Disorder and Auditory-Verbal Hallucinations.

The Journal of Nervous and Mental Disease, *0*(0), 1–9. https://doi.org/10.1097/NMD.0000000000000584

de Sousa, P., Spray, A., Sellwood, W., & Bentall, R. (2015). “No man is an island”. Testing the specific role of social isolation in formal though disorder. *Psyciatry Research*, *230*(2), 304–313. https://doi.org/http://dx.doi.org/10.1016/j.psychres.2015.09.010

Derogatis, L., & Spencer, P. (1982). *The brief symptom inventory (BSI): Administration, scoring and procedure manual 1*. Baltimore, MD: Clinical Psychometric Research.

Dozier, M. (1990). Attachment organization and treatment use for adults with serious psychopathological disorders. *Dev Psychopathol*, *2*(1), 47–60. https://doi.org/10.1017/S0954579400000584

Dozier, M., Stevenson, A. L., Lee, S. W., & Velligan, D. I. (1991). Attachment organization and familial overinvolvement for adults with serious psychopathological disorders. *Dev Psychopathol*, *3*(4), 475–489. https://doi.org/10.1017/S0954579400007641

Dundar, Y., & Fleeman, N. (2014). Developing my search strategy and applying inclusion criteria. In A. Boland, G. Cherry & R. Dickson (Eds.) *Doing a systematic review a student’s guide* (pp. 35-59). London: Sage Publications Ltd.

Eckblad, M., Chapman, L.J., Chapman, J.P., & Mishlove, M. (1982). The Revised Social Anhedonia Scale. (Available from L.J. Chapman, Department of Psychology, 1202West Johnson Street, University of Wisconsin, Madison, WI 53706).

Eckblad, M., & Chapman, L. J. (1983). Magical ideation as an indicator of schizotypy. *Journal of Consulting and Clinical Psychology*, *51*(2), 215–225. https://doi.org/10.1037/0022-006X.51.2.215

Edwards, R., & Bond, A. J. (2012). Narcissism, self-concept clarity and aggressive cognitive bias amongst mentally disordered offenders. *Journal of Forensic Psychiatry & Psychology*, *23*(5–6), 620–634. https://doi.org/10.1080/14789949.2012.715180

Erikson, E. H. (1968). *Identity : Youth and Crisis*. London : Faber & Faber.

* Evans, G. J., Reid, G., Preston, P., Palmier-Claus, J., & Sellwood, W. (2015). Trauma and psychosis: The mediating role of self-concept clarity and dissociation. *Psychiatry Research*. https://doi.org/10.1016/j.psychres.2015.04.053

Feeny, B.C., Cassidy, J., & Ramos-Marcuse, *F. (2008).* The generalization of attachment representations to new social situations: Predicting behavior during initial interactions with strangers. *Journal of Personality and Social Psychology, 95, 1481–1498. http://dx.doi.org.ezproxy.lancs.ac.uk/10.1037/a0012635*

First, M., Spitzer, R., Gibbon, M., Williams, J. B. ., & Benjamin, L. (1997). *Structured clinical interview for DSM-IV personality disorders (SCID-II)*. Washington, DC: American Psychiatric Press.

Foa, E. B., Cashman, L., Jaycox, L., & Perry, K. (1997). The Validation of a Self-Report Measure of Posttraumatic Stress Disorder: The Posttraumatic Diagnostic Scale. *Psychological Assessment*, *9*(4), 445–451. https://doi.org/10.1037/1040-3590.9.4.445

Franke, G. . (1995). *Die Symptom-Checkliste von Derogatis (SCL-90-R)*. Göttingen: Beltz.

Freeman, D., & Garety, P. A. (2003). Connecting neurosis and psychosis: the direct influence of emotion on delusions and hallucinations. *Behaviour Research and Therapy*, *41*(8), 923–947. https://doi.org/10.1016/S0005-7967(02)00104-3

Gergen, K. J. (1985). The Social Constructionist Movement in Modern Psychology. *American Psychologist*, *40*(3), 266–275. https://doi.org/10.1037/0003-066X.40.3.266

Greenhalgh, J., & Brown, T. (2014). Quality assessment. In A. Boland, G. Cherry & R. Dickson (Eds.) *Doing a systematic review a student's guide* (pp. 61-83). London: Sage Publications Ltd.

Gregory, B., & Peters, L. (2017). Changes in the self during cognitive behavioural therapy for social anxiety disorder: A systematic review. *Clinical Psychology Review*, *52*, 1–18. https://doi.org/10.1016/j.cpr.2016.11.008

Hasson-Ohayon, I., Mashiach-Eizenberg, M., Elhasid, N., Yanos, P. T., Lysaker, P. H., & Roe, D. (2013). Between self-clarity and recovery in schizophrenia: Reducing the self-stigma and finding meaning. *Comprehensive Psychiatry*. https://doi.org/10.1016/j.comppsych.2013.11.009

Hasson-Ohayon, I., Mashiach–Eizenberg, M., Lysaker, P. H., & Roe, D. (2016). Self-clarity and different clusters of insight and self-stigma in mental illness. *Psychiatry Research*, *240*, 308–313. https://doi.org/10.1016/j.psychres.2016.04.060

Hermans, H. J. M., Kempen, H. J. G., & Van Loon, R. J. P. (1992). The Dialogical Self. *American Psychologist*, *47*(1), 23–33. https://doi.org/10.1037/0003-066X.47.1.23

Kay, S. R., Fiszbein, A., & Opler, L. A. (1987). The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia. *Schizophrenia Bulletin*, *13*(2), 261–276. https://doi.org/10.1037/t05056-000

* Keshet, H., & Gilboa-Schechtman, E. (2016). Symptoms and Beyond: Self-Concept Among Sexually Assaulted Women. *Psychological Trauma : Theory, Research, Practice and Policy*. http://dx.doi.org.ezproxy.lancs.ac.uk/10.1037/tra0000222

Klonsky, E., & Glenn, C. (2009). Assessing the Functions of Non-suicidal Self-injury: Psychometric Properties of the Inventory of Statements About Self-injury (ISAS). *Journal of Psychopathology and Behavioral Assessment*, *31*(3), 215–219. https://doi.org/10.1007/s10862-008-9107-z

* Kusec, A., Tallon, K., & Koerner, N. (2016). Intolerance of uncertainty, causal uncertainty, causal importance, self-concept clarity and their relations to generalized anxiety

disorder. *Cognitive Behaviour Therapy*, *45*(4), 307–323. https://doi.org/10.1080/16506073.2016.1171391

* Lear, M. K., & Pepper, C. M. (2015). Self-Concept Clarity and Emotion Dysregulation in Nonsuicidal Self-Injury. *Journal Of Personality Disorders*, 1–15. http://dx.doi.org/10.1521/pedi_2015_29_232

* Lee-Flynn, S. C., Pomaki, G., DeLongis, A., Biesanz, J. C., & Puterman, E. (2011). Daily cognitive appraisals, daily affect, and long-term depressive symptoms: The role of self-esteem and self-concept clarity in the stress process. *Personality and Social Psychology Bulletin*, *37*(2), 255–268. https://doi.org/10.1177/0146167210394204

Lenzenweger, M., Lane, M., Loranger, A., & Kessler, R. (2007). DSM-IV personality disorders in the National Comorbidity Survery Replication. *Biological Psychiatry*, *62*, 533–564. https://doi.org/10.1016/j.biopsych.2006.09.019

Linehan, M.M. (2015). DBT Skills Training Manual. London: Guilford Press.

Luoma, J., Hayes, S., & Walser, R. (2008). Learning ACT: An Acceptance and Commitment Therapy Skills-Training Manual for Therapists. London: New Harbinger Publications.

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy*, *36*(4), 455. https://doi.org/10.1016/S0005-7967(97)10031-6

Mikulincer, M. (1995). Attachment Style and the Mental Representation of the Self. *Journal of Personality and Social Psychology*, *69*(6), 1203–1215. https://doi.org/10.1037/0022-3514.69.6.1203

Miller, T. J., Mcglashan, T. H., Rosen, J. L., Cadenhead, K., Ventura, J., Mcfarlane, W., … Woods, S. W. (2003). Prodromal Assessment With the Structured Interview for Prodromal Syndromes and the Scale of Prodromal Symptoms: Predictive Validity,

Interrater Reliability, and Training to Reliability. *Schizophrenia Bulletin*, *29*(4), 703–715. https://doi.org/10.1093/oxfordjournals.schbul.a007040

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *Journal of Clinical Epidemiology*, *62*(10), 1006–1012. https://doi.org/10.1016/j.jclinepi.2009.06.005

Mossaheb, N., Becker, J., Schaefer, M. R., Klier, C. M., Schloegelhofer, M., Papageorgiou, K., & Amminger, G. P. (2012). The Community Assessment of Psychic Experience (CAPE) questionnaire as a screening-instrument in the detection of individuals at ultra-high risk for psychosis. *Schizophrenia Research*, *141*(2–3), 210–214. https://doi.org/10.1016/j.schres.2012.08.008

National Institutes of Health. (2014a). Quality Assessment of Case-Control Studies. Retrieved from https://www.nhlbi.nih.gov/health-pro/guidelines/in-develop/cardiovascular-risk-reduction/tools/case-control

National Institutes of Health. (2014b). Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies. Retrieved from https://www.nhlbi.nih.gov/health-pro/guidelines/in-develop/cardiovascular-risk-reduction/tools/cohort

Newman, M. G., Zuellig, A. R., Kachin, K. E., Constantino, M. J., Przeworski, A., Erickson, T., & Cashman-Mcgrath, L. (2002). Preliminary reliability and validity of the generalized anxiety disorder questionnaire-IV: A revised self-report diagnostic measure of generalized anxiety disorder. *Behavior Therapy*, *33*(2), 215–233. https://doi.org/10.1016/S0005-7894(02)80026-0

* Noyman-Veksler, G., Weinberg, D., Fennig, S., Davidson, L., & Shahar, G. (2013). Perceived stigma exposure in schizophrenia: The key role of self-concept clarity. *Self and Identity*, *12*(6), 663–674. https://doi.org/10.1080/15298868.2012.732265

* Orr, E. M. J., & Moscovitch, D. A. (2015). Blending in at the cost of losing oneself: Dishonest self-disclosure erodes self-concept clarity in social anxiety. *Journal of Experimental Psychopathology*, *6*(3), 278–296. https://doi.org/10.5127/jep.044914

* Peleg-Sagy, T., & Shahar, G. (2015). Female medical students' (silencing the) self: Effects on depression and dyadic/sexual dissatisfaction. *Self and Identity*, *14*(4), 420–440. https://doi.org/10.1080/15298868.2015.1008031

Peters, E., Joseph, S., Day, S., & Garety, P. (2004). Measuring Delusional Ideation: The 21-Item Peters et al. Delusions Inventory (PDI). *Schizophrenia Bulletin*, *30*(4), 1005–1022. https://doi.org/10.1093/oxfordjournals.schbul.a007116

Prigerson, H. G., Horowitz, M. J., Jacobs, S. C., Parkes, C. M., Aslan, M., Goodkin, K., … Maciejewski, P. K. (2009). Prolonged Grief Disorder: Psychometric Validation of Criteria Proposed for DSM-V and ICD-11 (Criteria for Prolonged Grief Disorder). *PLoS Medicine*, *6*(8), e1000121. https://doi.org/10.1371/journal.pmed.1000121

Radloff, L. S. (1977). The CES-D Scale. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Raine, A. (1991). The SPQ: A Scale for the Assessment of Schizotypal Personality Based on DSM–III–R Criteria. *Schizophrenia Bulletin*, *17*(4), 555–564. https://doi.org/10.1037/t02711-000

* Reyes, M. E. S., Lanic, P. J. P., Lavadia, E. N. T., Tactay, E. F. J. L., Tiongson, E. R., Tuazon, P. J. G., & McCutcheon, L. E. (2015). Self-stigma, self-concept clarity, and mental health status of Filipino LGBT individuals. *North American Journal of Psychology*, *17*(2), 343–350. Retrieved from https://search-proquest-com.ezproxy.lancs.ac.uk/docview/1686090115?accountid=11979

* Richman, S. B., Pond, R. S. J., DeWall, C. N., Kumashiro, M., Slotter, E. B., & Luchies, L. B. (2016). An unclear self leads to poor mental health: Self-concept confusion

mediates the association of loneliness with depression. *Journal of Social and Clinical Psychology*, *35*(7), 525–550. https://doi.org/10.1521/jscp.2016.35.7.525

* Roepke, S., Schröder-Abé, M., Schütz, A., Jacob, G., Dams, A., Vater, A., … Lammers, C.-H. (2011). Dialectic behavioural therapy has an impact on self-concept clarity and facets of self-esteem in women with borderline personality disorder. *Clinical Psychology & Psychotherapy*, *18*(2), 148. https://doi.org/10.1002/cpp.684

Rossiter, A., Byrne, F., Wota, A. P., Nisar, Z., Ofuafor, T., Murray, I., … Hallahan, B. (2015). Childhood trauma levels in individuals attending adult mental health services: An evaluation of clinical records and structured measurement of childhood trauma. *Child Abuse & Neglect*, *44*, 36–45. https://doi.org/10.1016/j.chiabu.2015.01.001

Rudd, B. (2013). *Introducing Psychopathology*. London: SAGE Publications.

* Schiller, M., Hammen, C. C., & Shahar, G. (2016). Links among the self, stress, and psychological distress during emerging adulthood: Comparing three theoretical models. *Self and Identity*, *15*(3), 302–326. https://doi.org/10.1080/15298868.2015.1131736

Spielberger, C. ., Gorsuch, R. ., Lushene, P. ., Vagg, P. ., & Jacobs, G. . (1983). *Manual for the State-Trait Anxiety Inventory (Form Y)*. Redwood City, CA: MindGarden.

Stopa, S. (2009). Why is the Self Important in Understanding and Treating Social Phobia? *Cognitive Behaviour Therapy*, 38(1), 48-54. http://dx.doi.org.ezproxy.lancs.ac.uk/10.1080/16506070902980737

* Stopa, L., Brown, M. A., Luke, M. A., & Hirsch, C. R. (2010). Constructing a self: The role of self-structure and self-certainty in social anxiety. *Behaviour Research and Therapy*, *48*(10), 955–965. https://doi.org/10.1016/j.brat.2010.05.028

Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. (1999). The Personal and Relationships Profile (PRP). Durham: University of New Hampshire, Family Research Laboratory. Available: http://pubpages.unh.edu/~mas2

Stucke, T. S., & Sporer, S. L. (2002). When a Grandiose Self-Image Is Threatened: Narcissism and Self-Concept Clarity as Predictors of Negative Emotions and Aggression Following Ego-Threat. *Journal of Personality*, *70*(4), 509–532. https://doi.org/10.1111/1467-6494.05015

The British Psychological Society. (2014). Understanding Psychosis and Schizophrenia: Why people sometimes hear voices, believe things that others find strange, or appear out of touch with reality, and what can help. The British Psychological Society Division of Clinical Psychology. Retrieved from http://www.bps.org.uk/system/files/use-files/Division%20of%20Clinical%20Psychology/public/understanding_psychosis_final_19th_Nov_2014.pdf

Teasdale, J., Williams, M., & Segal, Z. (2014). The Mindful Way Workbook: An 8-Week Program to Free Yourself from Depression and Emotional Distress**.** London: Guilford Publications

Tonmyr, L., Jamieson, E., Mery, L. S., & MacMillan, H. L. (2005). The Relation between Childhood Adverse Experiences and Disability Due to Mental Health Problems in a Community Sample of Women. *The Canadian Journal of Psychiatry*, *50*(12), 778–783. https://doi.org/10.1177/070674370505001207

Van Dijk, M., Branje, S., Keijsers, L., Hawk, S., Hale, W., & Meeus, W. (2014). Self-Concept Clarity Across Adolescence: Longitudinal Associations With Open Communication With Parents and Internalizing Symptoms. *J. Youth Adolesc.*, *43*(11), 1861–1876. https://doi.org/10.1007/s10964-013-0055-x

Van Os, J., Driessen, G., Gunther, N., & Delespaul, P. (2000). Neighbourhood variation in incidence of schizophrenia: Evidence for person-environment interaction. *British Journal of Psychiatry, 176*, 243–248. https://doi.org/10.1192/bjp.176.3.243

Veit, C. T., & Ware, J. E. (1983). The Structure of Psychological Distress and Well-Being in General Populations. *Journal of Consulting and Clinical Psychology*, *51*(5), 730–42. https://doi.org/10.1037/0022-006X.51.5.730

* Weinberg, D., Shahar, G., Noyman, G., Davidson, L., McGlashan, T. H., & Fennig, S. (2012). Role of the self in schizophrenia: A multidimensional examination of short-term outcomes. *Psychiatry: Interpersonal and Biological Processes*, *75*(3), 285–297. https://doi.org/10.1521/psyc.2012.75.3.285

Wilson, J. K., & Rapee, R. M. (2006). Self-concept certainty in social phobia. *Behaviour Research and Therapy*, *44*(1), 113–136. https://doi.org/10.1016/j.brat.2005.01.006

Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition*. Stanford, CA: Stanford University Press.

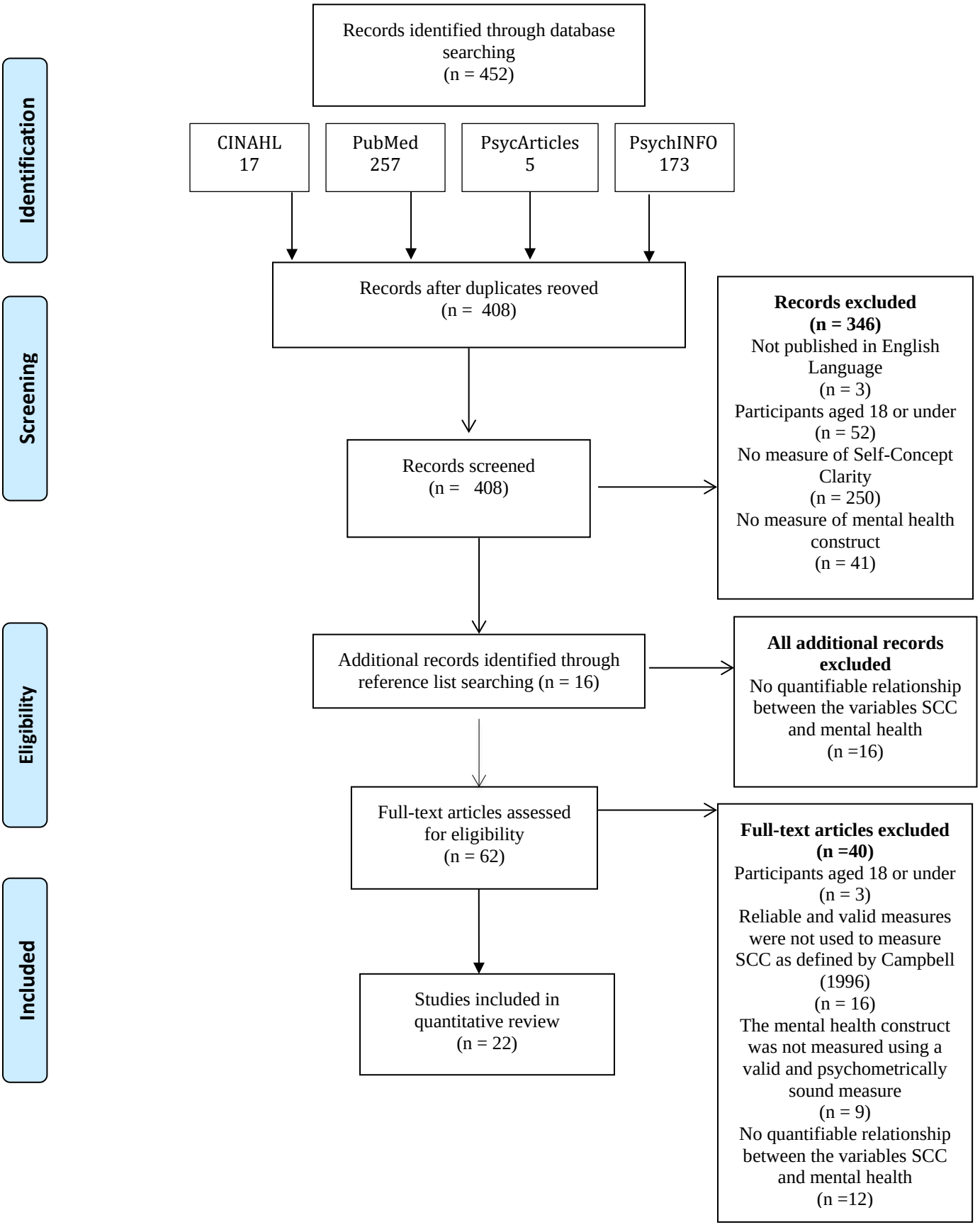
Zlotnick, C., Johnson, J., Kohn, R., Vicente, B., Rioseco, P., & Saldivia, S. (2008). Childhood trauma, trauma in adulthood, and psychiatric diagnoses: results from a community sample. *Comprehensive Psychiatry*, *49*(2), 163–169. https://doi.org/10.1016/j.comppsych.2007.08.007

* Studies included in the systematic review

Figures

Figure 1

PRISMA diagram of inclusion



Tables

Table 1

Summary of search terms used in for CINAHL, PubMed, PsychArticles, and PsychInfo.

Term	**Subject Search Terms**
Self-Concept Clarity	Self-Concept clarity OR SCC OR Clarity of Self-Concept OR Self-Concept Clarity Scale OR SCCS
Psychopathology	Mental Disorders OR Mental Health OR Mental Illness Anxiety OR Anxiety Disorders OR Generalised Anxiety Disorder OR Social Anxiety OR Obsessive Compulsive Disorders OR Post-Traumatic Stress Disorder OR Panic Disorders OR Phobias Depression OR Manic Depression OR Bi-polar Disorder Eating Disorders OR Anorexia Nervosa OR Bulimia Nervosa Schizophrenia OR Psychosis OR Delusions OR Paranoia OR Postpartum Psychosis OR Schizoaffective Disorders OR Psychotic Personality Disorders Suicide OR Self-Harm OR Self-Injury

Table 2

Inclusion and Exclusion Criteria used to Identify Relevant Papers.

Inclusion criteria	Exclusion criteria
Reliable and valid measures were used to measure SCC as defined by Campbell (1996) (e.g. the Self-Concept Clarity Scale (SCCS) (Campbell, 1996)	Studies that used qualitative methodology.
The mental health construct/variable is measured using a valid and psychometrically sound measure.	Studies focusing on children and adolescents.
The study investigated a quantifiable relationship between the variables SCC and mental health.	
All participants in the study were aged ≥18 years.	
Peer-reviewed journals only.	
Papers published in English language.	

Table 3.

Total global ratings to appraise quality of included studies using the National Institutes of Health (NIH) Quality appraisal tools for cohort and cross-sectional studies (National Institutes of Health, 2014b).

Item No.	**Blażek. (2016)**	**Boelen, Keijsers & van den Hout, (2012) - Study 1**	**Boelen, Keijsers & van den Hout, (2012) – Study 2**	**Boelen, Keijsers & van den Hout, (2012) - Study 3**	**Butzer & Kuiper (2006)**	**Cicero et al. (2013) – Study 1**	**Cicero et al. (2013) – Study 2**	**Cicero et al. (2013) – Study 3**	**Cicero et al. (2015)**	**Keschet & Gilboa-Schetchman. (2016)**	**Kusec, Tallon & Koerner. (2016)**	**Lear & Pepper. (2015)**	**Lee-Flynn et al. (2011)**	**Noyman-Veksler et al. (2013)**	**Orr & Moscovitch (2015)**	**Peleg-Sagy & Shahar (2015)**	**Reyes et al. (2015)**	**Richman et al. (2016) – Study 1**	**Richman et al. (2016) – Study 2**	**Richman et al. (2016) – Study 3**	**Schiller, Hammen, & Shahar. (2016)**	**Stopa, Brown, Luke, & Hirsch. (2010) - Study 1**	**Stopa, Brown, Luke, & Hirsch. (2010) - Study 2**	**Weinberg et al. (2012)**
1	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	*X*	✔	✔	✔
2	*X*	✔	✔	✔	*X*	✔	✔	✔	*X*	✔	*X*	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	*X*	✔	✔
3	*NR*	✔	✔	✔	*NR*	*X*	*X*	*X*	*NR*	✔	*NR*	✔	✔	✔	✔	✔	*NR*	*NR*	*NR*	*NR*	✔	*NR*	*NR*	✔
4	*NR*	✔	✔	✔	*NR*	NR	NR	NR	*NR*	✔	*NR*	✔	✔	✔	✔	✔	*NR*	*NR*	*NR*	*NR*	✔	*NR*	✔	✔
5	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*
6	*X*	*X*	*X*	✔	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	✔	✔	✔	✔	*X*	*X*	*X*	*X*	✔	*X*	*X*	✔
7	*X*	*X*	*X*	✔	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	✔	✔	✔	✔	*X*	✔	✔	✔	✔	*X*	*X*	✔
8	✔	*NA*	*NA*	*NA*	✔	*NA*	*NA*	*NA*	✔	*X*	✔	✔	✔	*X*	✔	*X*	*X*	X	X	X	✔	✔	✔	*X*
9	*X*	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
10	*NA*	*X*	*X*	✔	X	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	✔	✔	✔	*X*	✔	✔	✔	*X*	*X*	*X*	✔
11	*X*	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
12	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NR*	*NA*	*X*	*NR*	*NR*	*NR*	*NA*	X	X	X	*NA*	*NA*	*NA*	*NA*
13	*NA*	*NA*	*NA*	*X*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	✔	*X*	✔	*X*	*NA*	*NR*	*NR*	*NR*	✔	*NA*	*NA*	*X*
14	*X*	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	*NR*	*NR*	*NR*	✔	✔	✔	✔
Total	***2***	***7***	***7***	***10***	***5***	***5***	***5***	***5***	***5***	***7***	***5***	***8***	***11***	***10***	***12***	***10***	***5***	***6***	***6***	***6***	***10***	***5***	***7***	**10**
Global Rating	***Poor***	***Fair***	***Fair***	***Good***	***Fair***	***Fair***	***Fair***	***Fair***	***Fair***	***Fair***	***Fair***	***Fair***	***Good***	***Good***	***Good***	***Good***	***Fair***	***Fair***	***Fair***	***Fair***	***Good***	***Fair***	***Fair***	**Good**

* ✔- *Yes, X – No, NA – Non-Applicable, NR – Not Reported*

Table 4.

Total global ratings to appraise quality of included studies using the National Institutes of Health (NIH) Quality appraisal tools for case-control studies (National Institutes of Health, 2014a).

Item No.	***Berna et al. (2014)***	**Cicero, Martin, Becker, & Kerns. (2016)**	**de Sousa, Sellwood, Spray, Fernyhough, & Bentall. (2016)**	**Evans, Reid, Preston, Palmier-Claus, & Sellwood. (2015)**	**Roepke et al. (2011)**
1	✔	✔	✔	✔	✔
2	✔	✔	✔	✔	✔
3	✔	*X*	*X*	*X*	*X*
4	✔	*X*	✔	✔	✔
5	✔	✔	✔	✔	✔
6	✔	✔	✔	✔	✔
7	*NA*	*NA*	*NA*	*NA*	*NA*
8	*NA*	*X*	*X*	*X*	*NR*
9	✔	✔	✔	✔	✔
10	✔	✔	✔	✔	✔
11	*NR*	*NR*	*NR*	*NR*	*NR*
12	✔	✔	✔	✔	✔
Total	*9*	*7*	*8*	*8*	*8*
Global Rating	*Good*	*Fair*	*Good*	*Good*	*Good*

* ✔*- Yes, X – No, NA – Non-Applicable, NR – Not Reported*

Table 5

Summary of Descriptive Characteristics for Included Studies

Study No.	Author & County	Clinical Vs. Non-Clinical	Study Design	N	Sample Population	Mean Age Years	Gender (female), % (n)	Control group	Mental Health Variable and Psychometric Measure	SCC Measure
1	**Berna et al., (2014)** Germany	NC	Case control	**196** *APS Group 49* *Control Group 147*	Online participant pool; participants recruited to APS group if they scored1.5 SD above the mean of the total CAPE score and participants recruited to the control group if they scored 0.5 SD below the total CAPE score	APS Group 41.9 Control Group 41.9	APS Group 63.3 Control Group 63.3	Y	**Psychotic Symptoms** CAPE	SCCS
2	**Błażek. (2016)** Poland	NC	Cross-sectional	**100**	Individuals working in the state and public departments.	36.5	59.0	N	**Personality Disorders** PDQ	SCCS
3	**Boelen, Keijsers & van den Hout. (2012)**									
	The Netherlands *Study 1.*	NC	Cross-sectional	**67**	Participants recruited via online advertisements for a research program exploring cognitive behavioural variables in grief.	47.1	89.6	N	**Prolonged Grief Disorder** ICG-r (abbreviated version)	SCCS
	Study 2.	NC	Cross-sectional	**116**	As above.	46.0	93.1	N	**Prolonged Grief Disorder** ICG-r (abbreviated version)	SCCS [a]

3	*Study 3.*	NC	Cross-sectional & Cohort	**121** *Group 1 121* *Group 2 73*	As above. Participants assigned to one of two groups, Group 1 completed the questionnaires at time 1 only and Group 2 completed the questionnaires at time 1 and at a six-month follow up	Group 1 44.0 Group 2 44.8	*Group 1 86.8* *Group 2 84.9*	N	**Prolonged Grief Disorder** ICG-r (abbreviated version)	SCCS
4	**Butzer & Kuiper. (2006)** Canada	NC	Cross-sectional	**166**	First year psychology undergraduate students.	19.5	61.0	N	**Anxiety** CCAS **Depression** CES-D	SCCS
5	**Cicero, Becker, Martin, Docherty, & Kerns. (2013)** **USA**									
	Study 1.	NC	Cross-sectional	**667**	Undergraduate psychology students.	18.5	63.0	N	**Psychotic Like Experiences** PerAb and MagicId scores were combined to form a single PerMag score.	SCCS
	Study 2.	NC	Cross-sectional	**724**	Undergraduate students.	18.4	64.0		**Psychotic Like Experiences** PDI PerAb and MagicId scores were combined to form a single PerMag score.	SCCS

	Study 3.	NC	Cross-sectional	**744**	Undergraduate students.	18.5	61.0		**Psychotic Like Experiences** PerAb and MagicId scores were combined to form a single PerMag score. **Paranoia** SQP-S	SCCS
6	**Cicero, Docherty, Becker, Martin, & Kerns. (2015)** **USA**	NC	Cross-sectional	**162**	Undergraduate students	18.6	54.0	N	**Psychotic Like Experiences** PerAb MagicId SIPS SOPS SIAPA SocAnh	SCCS
7	**Cicero, Martin, Becker, & Kerns. (2016)** **USA**	C	Case-control	**86** *Group 1* *54* *Group 2* *32*	Participants with a diagnosis of schizophrenia or schizoaffective disorder (*Group 1*) Vs. Control group (*Group 2*)	Group 1 41.5 Group 2 2. 43.0	Group 1 12.7 Group 2 9.1	Y	**Positive Symptoms of Schizoprenia** CAPS PDI **Negative Symptoms** RSAS PhysAnh	SCCS
8	**de Sousa, Sellwood, Spray, Fernyhough, & Bentall. (2016)** UK	C	Case-control	**110** *Group 1* *80* *Group 2* *30*	Participants with a diagnosis with psychotic spectrum disorders (Group1) vs. Control group (Group 2)	Group 1 39.3 Group 2 38.4	Group 1 27.5 Group 2 2.3	Y	**Psychotic Symptoms** PANS **(PANS)** **Thought Disorder** TLC	SCCS

9	**Evans, Reid, Preston, Palmier-Claus, & Sellwood. (2015)** UK	C	Case-control	**60** *Group 1 29* *Group 2 31*	Participants with a diagnosis of psychosis recruited from early intervention services (Group 1) vs. control group recruited from a pool of adult learners (Group 2)	NR *All ppts aged 18-38 years*	Group 1 34.5 Group 2 38.7	Y	**Psychosis** PSQ	SCCS
10	**Keschet & Gilboa-Schetchman. (2016)** **Israel**	NC	Cross-sectional	**235** *Group 1 69* *Group 2 69* *Group 3 18* *Group 4 49* *Group 5 30*	Jewish-Isreali women recruited via online advertisements were assigned to one of five groups; non-traumatised (**1**), Motor-Vehicle Accident no PTSD (**2**), Motor Vehicle Accident and PTSD (**MVA-PTSD**), Sexual Assault no PTSD (**SAnoPTSD**), and Sexual Assault and PTSD (**SA-PTSD**).		Group 1 26.6 Group 2 28.8 Group 3 29.9 Group 4 31.0 Group 5 27.9	100	N	**PTSD** PDS **Depression** BDI-II **Anxiety** STAI-S	SCCS
11	**Kusec, Tallon & Koerner. (2016)** Canada	NC	Cross-sectional	**123** *Group 1 69* *Group 2 54*	Participants recruited via a participant pool and through the community. Participants assigned to one of two groups dependent on the scores of the psychometric assessments; High GAD (Group 1) vs. Low GAD (Group 2)		Group 1 24.1 Group 2 26.8	Group 1 74.1 Group 2 62.3	N	**Anxiety** GAD-Q-IV	SCCS

12	**Lear & Pepper. (2015)** USA	NC	Cross-sectional	**146** *Group 1* *69* *Group 2* *77*	Undergraduate psychology students. Participants assigned to one of two groups; one lifetime episode of NSSI (Group 1) vs. No NSSI episodes (Group 2)	Group 1 19.6 Group 2 19.1	Group 1 86 Group 2 82	N	**Nonsuicidal Self-Injury (NSSI)** ISAS	SCCS
13	**Lee-Flynn, Pomaki, DeLongis, Biesanz, & Puterman. (2011)** Canada	NC	Cohort	**178**	Participants recruited from newspaper and radio advertisements; either married or living in common law with at least one child living in the home from a previous relationship.	41.0	52.8	N	**Depressive Symptoms** CES-D	SCCS
14	**Noyman-Veksler, Weinberg, Fennig, Davidson, & Shahar, (2013)** Israel	C	Cohort	**89**	Out-patients with a diagnosis of schizophrenia-spectrum disorder	42.4	34.0	N	**Psychosis** PANSS **Depression** CDSS	SCCS
15	**Orr & Moscovitch. (2015)** Canada	NC	Cohort	**78** *Group 1* *43* *Group 2* *35*	Undergraduate students recruited from a participant sample pool randomly assigned to one of two groups; honesty (Group 1) vs. dishonesty (Group 2).	Group 1 19.5 Group 2 20.0	Group 1 72.1 Group 2 74.3	N	**Anxiety** SUDS **Social Phobia** SPS	SCCS

16	**Peleg-Sagy & Shahar. (2015)**									
	Israel									
	Study 1.	NC	Cohort	**194**	Female medical students involved in serious romantic relationships	26.6	100	N	**Depressive Symptoms** CES-D	SCCS
	Study 2.	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	**Reyes et al. (2015)**	NC	Cross-sectional	**566**	Participants who identified themselves as either lesbian, gay, bisexual or transgender.	22.7	36.0	N	**Mental Health Inventory** MHI	SCCS
	Philippines									
18	**Richman et al. (2016)**									
	USA									
	Study 1.	NC	Cross-sectional	**154**	Undergraduate students.	18.9	68.0	N	**Depression** CES-D BDI-II	SCCS
	Study 2.	NC	Cohort	**196** (*98 couples)*	Participants recruited from advertisements around University and the community, in a romantic relationship.	25.3	NR	N	**Depression** DPAS (Depression subscale)	SCCS

18	*Study 3.*	NC	Cohort	**390** *Group 1 150 (75 dating couples)* *Group 2 240 (120 married couples*)	Group 1. Heterosexual dating couples recruited from an undergraduate student sample. Group 2. Heterosexual married couples recruited from a community sample.	Group 1 20.5 Group 2 39.7	Group 1 50.0 Group 2 50.0	N	**Depression** DS	SCCS
19	**Roepke et al. (2011)** Germany	C	Case-control	**40** *Group 1 20* *Group 2 20*	Women with a diagnosis of Borderline Personality Disorder (BPD), all participants met DSM-IV for BPD. Participants were assigned to one of two groups; intervention (Group 1) vs. control (Group 2).	NR	100	Y	**Personality Disorder** CSID-II **Depression** BDI-II **Psychopathological Symptoms** GSI SCL-90-R	SCCS
20	**Schiller, Hammen, & Shahar. (2016)** Israel	NC	Cohort	**170**	Undergraduate students	23.2	68.0	N	**Psychological Distress** BSI	SCCS
21	**Stopa, Brown, Luke, & Hirsch. (2010)**									
	UK *Study 1.*	NC	Cross-sectional	**98**	Undergraduate students	22.3	71.0	N	**Social Anxiety** SIAS **Depression** BDI-II	SCCS

21	*Study 2.*	NC	Cross-sectional	**52** *Group 1* *26* *Group 2* *26*	Participants included undergraduate students and university staff recruited from a local university and participants recruited from the local community. Participants were assigned to either one of two groups following the administration of the SIAS; high socially anxious (Group 1) vs. low socially anxious (Group 2).	Group 1 28.6 Group 2 27.2	Group 1 81.0 Group 2 65.0	N	**Social Anxiety** SIAS **Depression** BDI-II	SCCS
22	***Weinberg et al., (2012)*** *Israel*	C	Cohort	**89**	Outpatients with a clinical diagnosis of schizophrenia spectrum disorder.	42.4	29.7	N	**Symptoms of Schizophrenia** PANSS **Depressive Symptoms** CDSS	SCCS

Note. **APS** – Attenuated Psychotic Symptoms, **BAI** – Beck Anxiety Inventory (Beck, Epstein, Brown, & Steer, 1988), **BDI-II** – Beck Depression Inventory(Beck, Steer, Ball, & Ranieri, 1996), **BSI** – The Brief Symptom Inventory (Derogatis & Spencer, 1982), **C**- Clinical, **CDSS** – Calgary Depression Scale for Schizophrenia (Addington, Addington, & Schissel, 1990), **CAPE** – Community Assessment of Psychic Experience (Mossaheb et al., 2012), **CAPS** - Cardiff Anomalous Perceptions Scale (Bell, Halligan, & Ellis, 2006), **CES-D** - Centre for Epidemiological Studies Depression Scale (Radloff, 1977), **CCAS**- Costello-Comrey Anxiety Scale (Costello & Comrey, 1967), **CISD-II** - Structured Clinical Interview for DSM-IV Personality Disorders (First, Spitzer, Gibbon, Williams, & Benjamin, 1997), **DPAS** - Derogatis Psychological Adjustment Scale (No reference provided or available), **DS** – Depression Scale (Straus, Hamby, Boney-McCoy, & Sugarman, 1999), **GAD** – Generalised Anxiety Disorder, **GAD-Q-IV** - Generalised Anxiety Disorder Questionnaire (Newman et al., 2002), **GSI** – Global Severity Index (Franke, 1995), **ICG-r** - Inventory of Complicated Grief-revised (Prigerson et al., 2009), **ISAS** – Inventory of Statements About Self-Injury (Klonsky & Glenn, 2009), **MHI** – Mental Health Inventory (Veit & Ware, 1983), **MagicId** – Magical Ideation (Eckblad & Chapman, 1983), **NA** – Not applicable to current review, **NC** – Non-clinical, **NR** – Not reported, **PANSS** - Positive and negative syndromes scale (Kay, Fiszbein, & Opler, 1987) **PDQ** – Personality Disorders Questionnaire (Cierpiałkowska, 2009), **PerAb** - Perceptual Aberration Scale (Chapman, Chapman, & Raulin, 1978), **PDI** – Peters Delusion Inventory (Peters, Joseph, Day, & Garety, 2004), **PDS** – Posttraumatic Diagnostic Scale (Foa, Cashman, Jaycox, & Perry, 1997), (**PerMag** - Perceptual Aberration/Magical Ideation (Perceptual Aberration Scale & Magical Ideation combined scores), **PhysAnh** – Physical Anhedonia Scale (Chapman, Chapman, & Raulin, 1976), **PTSD** – Posttraumatic Stress Disorder, **PSQ** – Psychosis Screening Questionnaire (Bebbington & Nayani, 1995), **SCCS** – Self Concept Clarity Scale (Campbell et al. 1996), **RSAS** – Revised Social Anhedonia Scale (Eckblad, Chapman, Chapman, & Mishlove, 1982), **SCL-90-R** – Symptom Checklist-90-Revised (Franke, 1995), **SIAPA** - The structured Interview for Assessing Perceptual Anomalies (Bunney et al., 1999), **SIAS** – Social Interaction and Anxiety Scale (Mattick & Clarke, 1998), **SIPS** - The Structured Interview for Prodromal Syndromes (Miller et al., 2003), **SocAnh** - Social Anhedonia Scale (Eckblad et al., 1982), **SOPS** - Scale of Prodromal Syndromes (Miller et al., 2003), **SPS** – Social Phobia Scale (Mattick & Clarke, 1998), **STAI-S** – State Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), **SUDS** – Subjective Units of Distress Scale (Wolpe, 1958), **SQPS** – Schiztypal Personality Questionnaire (Raine, 1991),**TLC** – Assessment of thought, language and communication (Andreasen, 1986)

a. Abbreviated 5-item measure of SCCS.

Table 6

Summary of the main aims and significant findings for the included studies

Study Number	Author	Aims	Main Findings
1	**Berna et al. (2014)**	1. To compare the differences of several characteristics; self-concept clarity, meaning making and self-function of autobiographical memory between two populations of participants with high attenuated psychotic symptoms (APS) versus low APS. 2. To examine whether an altered way of thinking or reasoning about one's past may account for the reduced clarity of self-concept in individuals with APS.	1. Individuals with high APS had significantly lower SCC than their controls. 2. CAPE negative and positive sub scores were significantly negatively associated with SCC. 3. Individuals with high APS had a significantly higher tendency to scrutinise their past and this was associated with lower levels of SCC. 4. The relationship between CAPE positive and SCC was mediated by the TALE self-function.
2	**Blaztek (2015)**	To examine whether SCC is correlated with personality disorders.	SCC was significantly negatively correlated with the following personality disorders (as defined by the PDQ): paranoid, schizoid, schizotypal, borderline, histrionic, narcissistic, anxious, dependent.
3	**Boelen, Keijsers & van den Hout, (2012)**		
	Study 1.	To examine the relationship between SCC and prolonged grief disorder (PGD)	1. PGD severity was significantly associated with reduced SCC. 2. Lower levels of SCC were found to predict PGD severity.

3	*Study 2.*	To examine changes in SCC overtime in relation to PGD; measuring SCC at three points, (T3) current and immediately (T1) before and (T2) after a loss.	1. A significant decline was noted from retrospective ratings of SCC from T1 to T2. 2. A greater reduction in SCC from T1 to T2 was significantly associated with more severe PGD symptoms at T2. 3. In acute PGD severity, the change in score from T2-T3 was found to explain the variance in PGD severity.
	Study 3.	To examine potential mediators of the anticipated relationship between SCC and PGD severity and to examine the direction of this relationship.	1. Independently self-esteem, depressive avoidance, and rumination all emerged as significant mediators of the linkage between low SCC and PGD at T1. 2. The association of lower SCC and increased PDG severity was partially but not significantly mediated by self-esteem, depressive avoidance and rumination at T2.
4	**Butzer & Kuiper. (2006)**	1. To examine the relationship between SCC and anxiety, and depression. 2. To explore the degree to which SCC may mediate the relationship between depression, anxiety and social comparison.	Lower levels of SCC were significantly associated with high self-reported ratings of anxiety and depression. A meditational revealed that SCC fully mediated the relationship between anxiety, depression and social comparison.
5	**Cicero, Becker, Martin, Docherty, & Kerns. (2013)**		
	Study 1.	To examine whether SCC and aberrant salience interact to predict psychotic like experiences (PLEs).	1. Lower levels of SCC were significantly associated with higher self-reported PLEs (as defined by the PerMag). 2. An interaction between aberrant salience and low SCC had the highest levels of psychotic like experiences.

5	*Study 2.*	1. To examine whether SCC and aberrant salience interact to predict PLEs.	1. Lower levels of SCC were significantly associated with higher self-reported PLEs (as defined by the PerMag).
		2. To examine the specificity of the interaction between SCC, aberrant salience and PLEs by introducing a new measure; the Peters Delusions Inventory (PDI).	2. A significant interaction between aberrant salience, SCC and PLEs. Participants who reported high aberrant salience and low SCC had highest levels of PLEs.
	Study 3.	1. To examine the specificity of aberrant salience interacting with SCC to predict PLEs	1. Low SCC was significantly associated with higher self-reported PLEs.
		2. To test whether the interaction between aberrant salience and SCC is specific to PLEs.	2. There was a significant interaction between aberrant salient and SCC in predicting PLEs, however, SCC and aberrant salience did not interact to predict paranoia. Thus the interaction appears to be specific to PLEs (as defined by the PerMag).
6	**Cicero, Docherty, Becker, Martin, & Kerns. (2015)**	1. To examine the relationship between aberrant salience, SCC and PLEs.	1. Low SCC was significantly associated with PLEs.
		2. To examine whether the relationship could be statistically accounted for by self-esteem.	2. Self-esteem did not mediate the relationship between SCC and PLEs.
7	**Cicero, Martin, Becker, & Kerns. (2016)**	1. To examine whether people with a diagnosis of schizophrenia have lower SCC in comparison to healthy controls.	1. Individuals with a diagnosis of schizophrenia had significantly lower SCC versus healthy controls.
		2. To explore whether SCC is associated with both positive and negative symptoms in people with a diagnosis of schizophrenia.	2. Low SCC was significantly associated both positive and negative symptoms of schizophrenia.
8	**de Sousa, Sellwood, Spray, Fernyhough, & Bentall. (2016)**	1. To examine whether low SCC was more prevalent in individuals with a diagnosis of psychotic-spectrum disorder.	1. Individuals with a diagnosis of psychotic-spectrum disorder had significantly lower SCC versus healthy controls.
		2. To explore whether low SCC was significantly associated with thought disorder in individuals with a diagnosis of psychotic-spectrum disorder.	2. Low SCC was significantly associated with thought disorder, hallucinatory behaviour, delusions, suspiciousness and persecution.
			3. Poor SCC was associated with lower scores on all of the inner speech dimensions – consistent with previous findings that the quality of inner speech contributes to self-knowledge and hence coherence of SCC.

9	**Evans, Reid, Preston, Palmier-Claus, & Sellwood. (2015)**	1. To investigate the relationship between childhood trauma, SCC and dissociation, across a non-clinical group. 2. To examine the extent to which dissociation and SCC mediate the relationship between childhood trauma and psychosis.	1. SCCS was significantly lower in the clinical group vs. control group. 2. All types of childhood maltreatment as measured by the childhood trauma questionnaire (CTQ) were significantly negatively associated with SCCS. 3. SCC mediated the relationship between psychosis and total childhood trauma.
10	**Keschet & Gilboa-Schetchman. (2016)**	To further understand the SCC impairments in the aftermath of sexual assault among women with varying levels of post-traumatic distress.	1. SCC significantly negatively associated with post-traumatic distress, depression and trait anxiety and higher symptom severity was significantly associated with low SCC. 2. Compared to non-traumatised women, women who had experienced sexual assault had significantly lower SCC. 3. Women who met the clinical threshold for PTSD compared to women, who did not meet the clinical threshold for PTSD, had significantly lower SCC. 4. Age at time of trauma emerged as a significant predictor of low SCC.
11	**Kusec, Tallon & Koerner. (2016)**	To examine the extent to which SCC, causal uncertainty and causal importance correlate with pathological worry, and whether these constructs are uniquely associated with high vs. low GAD symptoms.	1. SCCS significantly negatively associated with GAD. 2. SCC significantly lower in high GAD vs. low GAD participant groups. 3. SCC significantly negatively associated with Intolerance of Uncertainty Scale (IUS), Causal Uncertainty Scale (CUS) and Causal Importance Scale (CIS).

12	**Lear & Pepper. (2015)**	1. To examine the relationship between SCC and non-suicidal self-injury (NSSI). 2. To examine the impact of SCC on the relationship between emotion dysregulation and NSSI severity.	1. NSSI engagement was associated with lower SCC levels. 2. SCC significantly predicted NSSI frequency accounting for 22% of the variance and NSSI versatility accounting for 23% of the variance. 3. SCC fully accounted for the unique variance initially explained by dysregulation in NSSI versatility.
13	**Lee-Flynn, Pomaki, DeLongis, Biesanz, & Puterman. (2011)**	1. To examine whether low self-esteem is associated with more depressive symptoms for individuals with lower SCC, compared to individuals with higher SCC.	1. Higher levels of SCC were significantly associated with fewer depressive symptoms at Time 2 in the longitudinal study. 2. SCC was significantly negatively associated with depressive symptoms in participants with low levels of self-esteem versus high levels of self-esteem.
14	**Noyman-Veksler, Weinberg, Fennig, Davidson, & Shahar. (2013)**	To examine whether SCC would independently and prospectively predict an increase in exposure to stigmatisation over time in individuals with a diagnosis of schizophrenia.	1. SCC significantly negatively associated with positive and negative symptoms of schizophrenia. 2. SCC significantly negatively associated with depressive symptoms. 3. SCC was significantly negatively correlated with stigmatisation. 4. SCC emerged as a significant predictor of perceived stigmatisation.
15	**Orr & Moscovitch. (2015)**	To examine whether being dishonest about one's views would lower one's SCC in individuals with high versus low social anxiety.	1. Higher trait social anxiety significantly negatively associated with SCC compared with lower trait SA. 2. Dishonest self-disclosure led to significantly reduced levels of SCC but only amongst participants with higher levels of social anxiety.

16	**Peleg-Sagy & Shahar. (2015)**	1. To examine whether SCC would predict a decrease in depressive symptoms and dyadic and sexual dissatisfaction over a 1-year interval, and would also predict low levels of physical symptoms. 2. To examine whether SCC would buffer against the deleterious effects of self-criticism and silencing the self, both separately and jointly.	1. SCC significantly negatively associated with depression. 2. A statistically significant two-way interaction was found for silencing the self and SCC in predicting depressive symptoms. When SCC was low but not when it was high, silencing the self was positively associated with depressive symptoms.
	Study 1.		
	Study 2.	NA	NA
17	**Reyes et al. (2015)**	To examine self-stigmatisation and SCC and their relationship to mental health in a lesbian, gay, bisexual and transgender (LGBT) population.	1. SCC significantly associated with mental health inventory scores. 2. Multiple regression analyses indicated that the combination of self-stigma and SCC predicted mental health better than either one alone. However, SCC emerged as the more significant predictor of the two.
18	**Richman et al. (2016)**		
	Study 1.	To examine whether SCC mediates the relationship between loneliness and depression, and whether this relationship differed for single participants versus those in romantic relationships.	SCC significantly mediated the relationship between loneliness and depression, in both single participants and those in romantic relationships.
	Study 2.	To examine whether loneliness predicted lower SCC and whether together they would predict higher levels of depressive symptoms.	1. SCC mediated the relationship between loneliness and depression over a 2-year period. 2. Loneliness was found to predict lower levels of SCC, which in turn increased subsequent levels of depression.
	Study 3.	To examine whether SCC mediates the relationship between loneliness and depressive symptoms in dating versus married couples.	1. SCC mediated the relationship between loneliness and depression. 2. Loneliness was found to predict lower levels of SCC, which in turn increased subsequent levels of depression.

19	**Roepke et al. (2011)**	To examine whether a Dialectic Behavioral Therapy (DBT) intervention improves SCC in females with a diagnosis of borderline personality disorder (BPD).	1. Women with BPD experienced significantly impaired SCC compared with reference data from healthy controls. 2. Significant interaction effect between time and group, indicating a significant improvement of SCC in the DBT intervention group. No significant changes to SCC in the waiting list control group.
20	**Schiller, Hammen, & Shahar. (2016)**	To compare three theoretical models to examine the links between SCC, stress and psychopathology.	1. SCC significantly negatively associated with brief symptom inventory (BSI). 2. SCC emerged as a predictor of BSI. 3. Chronic stress emerged as a predictor of levels of SCC.
21	**Stopa, Brown, Luke, & Hirsch. (2010)**		
	Study 1.	To examine whether negative compartmentalisation and lower SCC were associated with social anxiety	1. SCC significantly negatively correlated with social anxiety. 2. SCC significantly negatively associated with depression. 3. SCC emerged as a unique predictor of social anxiety.
	Study 2.	To examine whether high versus low socially anxious participants would have lower SCC.	High socially anxious participants reported significantly lower SCC than low social anxious participants.
22	**Weinberg et al. (2012)**	To examine the role of for self –concept aspects – SCC, self-esteem level, self-esteem instability, and the perception of the self as ill, in participants with a diagnosis of schizophrenia-spectrum disorder.	1. SCC emerged as the only statistically significant predictor of positive symptoms of schizophrenia. 2. When stress levels were high, SCC predicted an increase in positive symptoms over time.

***** APS – Attenuated Psychotic Symptoms, CAPE – Community Assessment of Psychic Experiences, SCC – Self-Concept Clarity, PDQ – Personality Disorders Questionnaire, PLEs – Psychotic Like Experiences, PerMag - Perceptual Aberration/Magical Ideation

Appendices

Appendix 1-A. PsychInfo, PsycArticles, CINAHL Search Strategy

(((((((((DE "Anxiety" OR DE "Computer Anxiety" OR DE "Mathematics Anxiety" OR DE "Performance Anxiety" OR DE "Social Anxiety" OR DE "Speech Anxiety" OR DE "Test Anxiety") OR "Psychological Distress" OR (DE "Anxiety Disorders" OR DE "Acute Stress Disorder" OR DE "Castration Anxiety" OR DE "Death Anxiety" OR DE "Generalized Anxiety Disorder" OR DE "Obsessive Compulsive Disorder" OR DE "Panic Disorder" OR DE "Phobias" OR DE "Post-Traumatic Stress" OR DE "Posttraumatic Stress Disorder" OR DE "Separation Anxiety Disorder")) OR (DE "Depression (Emotion)")) OR (DE "Bipolar Disorder" OR DE "Cyclothymic Personality")) OR (DE "Eating Disorders" OR DE "Anorexia Nervosa" OR DE "Binge Eating Disorder" OR DE "Bulimia" OR DE "Hyperphagia" OR DE "Kleine Levin Syndrome" OR DE "Pica" OR DE "Purging (Eating Disorders)")) OR (DE "Schizophrenia" OR DE "Acute Schizophrenia" OR DE "Catatonic Schizophrenia" OR DE "Childhood Schizophrenia" OR DE "Paranoid Schizophrenia" OR DE "Process Schizophrenia" OR DE "Schizophrenia (Disorganized Type)" OR DE "Schizophreniform Disorder" OR DE "Undifferentiated Schizophrenia")) OR (DE "Psychosis" OR DE "Acute Psychosis" OR DE "Affective Psychosis" OR DE "Alcoholic Psychosis" OR DE "Capgras Syndrome"OR DE "Chronic Psychosis" OR DE "Experimental Psychosis" OR DE "Hallucinosis" OR DE "Paranoia (Psychosis)" OR DE "Postpartum Psychosis" OR DE "Reactive Psychosis" OR DE "Schizophrenia" OR DE "Senile Psychosis" OR DE "Toxic Psychoses")) OR (DE "Mental Disorders" OR DE "Adjustment Disorders" OR DE "Affective Disorders" OR DE "Alexithymia" OR DE "Anxiety Disorders" OR DE "Chronic Mental Illness" OR DE "Dissociative Disorders" OR DE "Eating Disorders" OR DE "Elective Mutism" OR DE "Factitious Disorders" OR DE "Gender Identity Disorder" OR DE "Hoarding Disorder" OR DE "Hysteria" OR DE "Impulse Control Disorders" OR DE

"Koro" OR DE "Mental Disorders due to General Medical Conditions" OR DE "Neurosis" OR DE "Paraphilias" OR DE "Personality Disorders" OR DE "Pseudodementia" OR DE "Psychosis" OR DE "Schizoaffective Disorder")) OR (DE "Mental Disorders" OR DE "Adjustment Disorders" OR DE "Affective Disorders" OR DE "Alexithymia" OR DE "Anxiety Disorders" OR DE "Chronic Mental Illness" OR DE "Dissociative Disorders" OR DE "Eating Disorders" OR DE "Elective Mutism" OR DE "Factitious Disorders" OR DE "Gender Identity Disorder" OR DE "Hoarding Disorder" OR DE "Hysteria" OR DE "Impulse Control Disorders" OR DE "Neurosis" OR DE "Paraphilias" OR DE "Personality Disorders" OR DE "Pseudodementia" OR DE "Psychosis" OR DE "Schizoaffective Disorder")) OR (DE "Suicide" OR DE "Assisted Suicide") OR "Self-Harm" OR "Self-injur*) (((((((((DE "Anxiety" OR DE "Computer Anxiety" OR DE "Mathematics Anxiety" OR DE "Performance Anxiety" OR DE "Social Anxiety" OR DE "Speech Anxiety" OR DE "Test Anxiety") OR "Psychological Distress" OR (DE "Anxiety Disorders" OR DE "Acute Stress Disorder" OR DE "Castration Anxiety" OR DE "Death Anxiety" OR DE "Generalized Anxiety Disorder" OR DE "Obsessive Compulsive Disorder" OR DE "Panic Disorder" OR DE "Phobias" OR DE "Post-Traumatic Stress" OR DE "Posttraumatic Stress Disorder" OR DE "Separation Anxiety Disorder")) OR (DE "Depression (Emotion)")) OR (DE "Bipolar Disorder" OR DE "Cyclothymic Personality")) OR (DE "Eating Disorders" OR DE "Anorexia Nervosa" OR DE "Binge Eating Disorder" OR DE "Bulimia" OR DE "Hyperphagia" OR DE "Kleine Levin Syndrome" OR DE "Pica" OR DE "Purging (Eating Disorders)")) OR (DE "Schizophrenia" OR DE "Acute Schizophrenia" OR DE "Catatonic Schizophrenia" OR DE "Childhood Schizophrenia" OR DE "Paranoid Schizophrenia" OR DE "Process Schizophrenia" OR DE "Schizophrenia (Disorganized Type)" OR DE "Schizophreniform Disorder" OR DE "Undifferentiated Schizophrenia")) OR (DE "Psychosis" OR DE "Acute Psychosis" OR DE "Affective Psychosis" OR DE "Alcoholic

Psychosis" OR DE "Capgras Syndrome" OR DE "Childhood Psychosis" OR DE "Chronic Psychosis" OR DE "Experimental Psychosis" OR DE "Hallucinosis" OR DE "Paranoia (Psychosis)" OR DE "Postpartum Psychosis" OR DE "Reactive Psychosis" OR DE "Schizophrenia" OR DE "Senile Psychosis" OR DE "Toxic Psychoses")) OR (DE "Mental Disorders" OR DE "Adjustment Disorders" OR DE "Affective Disorders" OR DE "Alexithymia" OR DE "Anxiety Disorders" OR DE "Autism Spectrum Disorders" OR DE "Chronic Mental Illness" OR DE "Dementia" OR DE "Dissociative Disorders" OR DE "Eating Disorders" OR DE "Elective Mutism" OR DE "Factitious Disorders" OR DE "Gender Identity Disorder" OR DE "Hoarding Disorder" OR DE "Hysteria" OR DE "Impulse Control Disorders" OR DE "Koro" OR DE "Mental Disorders due to General Medical Conditions" OR DE "Neurosis" OR DE "Paraphilias" OR DE "Personality Disorders" OR DE "Pseudodementia" OR DE "Psychosis" OR DE "Schizoaffective Disorder")) OR (DE "Mental Disorders" OR DE "Adjustment Disorders" OR DE "Affective Disorders" OR DE "Alexithymia" OR DE "Anxiety Disorders" OR DE "Chronic Mental Illness" OR DE "Dissociative Disorders" OR DE "Eating Disorders" OR DE "Elective Mutism" OR DE "Factitious Disorders" OR DE "Gender Identity Disorder" OR DE "Hoarding Disorder" OR DE "Hysteria" OR DE "Impulse Control Disorders" OR DE "Neurosis" OR DE "Paraphilias" OR DE "Personality Disorders" OR DE "Pseudodementia" OR DE "Psychosis" OR DE "Schizoaffective Disorder")) OR (DE "Suicide" OR DE "Assisted Suicide") OR "Self-Harm" OR "Self-injur*) ("anxiety" OR "depression" OR "generalised anxiety disorder" OR "generalized anxiety disorder" OR "GAD" OR "social anxiety disorder" OR "social anxiety" OR "panic" OR "panic disorder" OR "obsessive compulsive disorder" OR "OCD" OR "post traumatic stress disorder" OR "PTSD" OR "bipolar disorder" OR "manic depression” OR “bipolar mood disorder" OR "eating disorder" OR "anorexia" OR "anorexia nervosa" OR "bulimia" OR "bulimia nervosa" OR "psychosis" OR "psychotic" OR "schizophrenia" OR

“personality disorder” OR "mental health difficulties" OR "mental health" OR "mental illness" OR "suicide" OR "self-injury" OR "self-harm" AND "Self-Concept clarity" OR "SCC" OR "Clarity of Self-Concept" OR "Self-Concept Clarity Scale" OR "SCCS”

PubMed Search Strategy – MeSH Terms

((((((((((((((((((((((((((((((anxiety[MeSH Terms]) OR anxiety disorder[MeSH Terms]) OR anxiety disorders[MeSH Terms]) OR anxiety disorder, separation[MeSH Terms]) OR disorder, panic[MeSH Terms]) OR attack, panic[MeSH Terms]) OR attacks, panic[MeSH Terms]) OR panic[MeSH Terms]) OR panic disorders[MeSH Terms])) OR ((((anxiety[Title/Abstract]) OR anxiety disorder[Title/Abstract]) OR panic disorder[Title/Abstract]) OR panic[Title/Abstract])) OR (("psychological distress"[Title/Abstract]) OR distress[Title/Abstract])) OR ((depression[MeSH Terms]) OR bipolar depression[MeSH Terms])) OR ((((psychosis[MeSH Terms]) OR affective psychosis, bipolar[MeSH Terms]) OR borderline schizophrenia[MeSH Terms]) OR disorder, schizophrenic[MeSH Terms])) OR (((((psychosis[MeSH Terms]) OR affective psychosis, bipolar[MeSH Terms]) OR borderline schizophrenia[MeSH Terms]) OR disorder, schizophrenic[MeSH Terms])))) OR ((((psychosis[Title/Abstract]) OR "hearing voices"[Title/Abstract]) OR "unusual experiences") OR "voice hearing")) OR ((((eating disorders[MeSH Terms]) OR eating disorder[MeSH Terms]) OR binge eating disorder[MeSH Terms]) OR anorexia nervosa[MeSH Terms])) OR ((anorexia[Title/Abstract]) OR bulimia[Title/Abstract])) OR ((mental disorder[MeSH Terms]) OR mental disorders[MeSH Terms])) OR ((((((((((personality disorders[MeSH Terms]) OR antisocial personality disorder[MeSH Terms]) OR avoidant personality disorder[MeSH Terms]) OR borderline personality disorder[MeSH Terms]) OR compulsive

personality disorder[MeSH Terms]) OR dependent personality disorder[MeSH Terms]) OR histrionic personality disorder[MeSH Terms]) OR multiple personality disorder[MeSH Terms]) OR narcissistic personality disorder[MeSH Terms]) OR paranoid personality disorder[MeSH Terms])) OR ((personality disorder[Title/Abstract]) OR personality difficulties[Title/Abstract])) OR (((phobia[MeSH Terms]) OR phobias[MeSH Terms]) OR school phobia[MeSH Terms])) OR ((suicide[MeSH Terms]) OR attempted suicide[MeSH Terms])) OR ((deliberate self harm[MeSH Terms]) OR self injurious behavior[MeSH Terms])) OR ((self-harm[Title/Abstract]) OR self-injury[Title/Abstract])) OR (((obsessive compulsive disorder[MeSH Terms]) OR behaviors, obsessive[MeSH Terms]) OR OCD[Title/Abstract])) OR (((acute post traumatic stress disorder[MeSH Terms]) OR post traumatic stress disorder[Title/Abstract]) OR PTSD[Title/Abstract])) OR ((VISUAL HALLUCINATION[Title/Abstract]) OR HALLUCINATION[Title/Abstract])))))) OR (("anxiety" OR "depression" OR "generalised anxiety disorder" OR "generalized anxiety disorder" OR "GAD" OR "social anxiety disorder" OR "social anxiety" OR "panic" OR "panic disorder" OR "obsessive compulsive disorder" OR "OCD" OR "post traumatic stress disorder" OR "PTSD" OR "bipolar disorder" OR "manic depression” OR “bipolar mood disorder" OR "eating disorder" OR "anorexia" OR "anorexia nervosa" OR "bulimia" OR "bulimia nervosa" OR "psychosis" OR "psychotic" OR "schizophrenia" OR “personality disorder” OR "mental health difficulties" OR "mental health" OR "mental illness" OR "suicide" OR "self-injury" OR "self-harm")))) AND ((((((SELF-CONCEPT CLARITY[Title/Abstract]) OR SCC[Title/Abstract]) OR CLARITY OF SELF-CONCEPT[Title/Abstract]) OR SCCS[Title/Abs]

Appendix 1-B. Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?			
2. Was the study population clearly specified and defined?			
3. Was the participation rate of eligible persons at least 50%?			
4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?			
5. Was a sample size justification, power description, or variance and effect estimates provided?			
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?			
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?			
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?			
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?			
10. Was the exposure(s) assessed more than once over time?			
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?			
12. Were the outcome assessors blinded to the exposure status of participants?			
13. Was loss to follow-up after baseline 20% or less?			
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?			

Quality Rating (Good, Fair, or Poor) (see guidance)
Rater #1 initials:
Rater #2 initials:
Additional Comments (If POOR, please state why):

*CD, cannot determine; NA, not applicable; NR, not reported

Appendix 1-C. Quality Assessment of Case-Control Studies

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated and appropriate?			
2. Was the study population clearly specified and defined?			
3. Did the authors include a sample size justification?			
4. Were controls selected or recruited from the same or similar population that gave rise to the cases (including the same timeframe)?			
5. Were the definitions, inclusion and exclusion criteria, algorithms or processes used to identify or select cases and controls valid, reliable, and implemented consistently across all study participants?			
6. Were the cases clearly defined and differentiated from controls?			
7. If less than 100 percent of eligible cases and/or controls were selected for the study, were the cases and/or controls randomly selected from those eligible?			
8. Was there use of concurrent controls?			
9. Were the investigators able to confirm that the exposure/risk occurred prior to the development of the condition or event that defined a participant as a case?			
10. Were the measures of exposure/risk clearly defined, valid, reliable, and implemented consistently (includingthe same time period) across all study participants?			
11. Were the assessors of exposure/risk blinded to the case or control status of participants?			
12. Were key potential confounding variables measured and adjusted statistically in the analyses? If matching was used, did the investigators account for matching during study analysis?			

Quality Rating (Good, Fair, or Poor) (see guidance)
Rater #1 initials:
Rater #2 initials:
Additional Comments (If POOR, please state why):

*CD, cannot determine; NA, not applicable; NR, not reported

Appendix 1-D. Summary of the inter-rater process

Item No.	Błażek. (2015)		Butzer & Kuiper. (2006)		Cicero et al. (2015)		Lear & Pepper. (2015)		Lee-Flynn et al. (2011)		Schiller, Hammen, & Shahar. (2016)		Stopa, Brown, Luke, & Hirsch. (2010) *Study 1*		Stopa, Brown, Luke, & Hirsch. (2010) *Study 2*		IR Agreement (%)
	IR 1	**IR 2**	**IR 1**	**IR 2**	**IR 1**	**IR 2**	**IR 1**	**IR 2**	**IR 1**	**IR 2**	**IR 1**	**IR 2**	**IR 1**	**IR 2**	**IR 1**	**IR 2**	
1	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	*X*	X	✔	✔	✔	✔	**100**
2	*X*	X	*X*	X	*X*	X	✔	✔	✔	✔	✔	✔	*X*	X	✔	✔	**100**
3	*NR*	NR	*NR*	NR	*NR*	NR	✔	X	✔	✔	✔	✔	*NR*	NR	*NR*	NR	**87.5**
4	*NR*	NR	*NR*	NR	*NR*	NR	✔	NR	✔	✔	✔	NR	*NR*	NR	✔	✔	**75**
5	*X*	X	*X*	X	*X*	X	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	**100**
6	*X*	X	*X*	X	*X*	X	*X*	*X*	✔	✔	✔	✔	*X*	*X*	*X*	*X*	**100**
7	*X*	X	*X*	X	*X*	X	*X*	*X*	✔	✔	✔	✔	*X*	*X*	*X*	*X*	**100**
8	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	**100**
9	*X*	X	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	**100**
10	*NA*	NA	X	X	*X*	X	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	*X*	**100**
11	*X*	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	**87.5**
12	*NA*	NA	*NA*	NA	*NA*	NA	*NA*	*NA*	*X*	*X*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**100**
13	*NA*	NA	*NA*	NA	*NA*	NA	*NA*	*NA*	✔	✔	✔	✔	*NA*	*NA*	*NA*	*NA*	**100**
14	*X*	X	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	**100**
Overall Agreement (%)																	**96.4**
Global Quality Rating	***Poor***	**Poor**	***Fair***	**Fair**	***Fair***	**Fair**	***Fair***	**Fair**	***Good***	**Good**	***Good***	**Good**	***Fair***	**Fair**	***Fair***	**Fair**	**100**

* ✔- *Yes, IR – Inter-rater, NA – Non-Applicable, NR – Not Reported, X – No*

Appendix 1-E. Clinical Psychology Review notes for authors

Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

• E-mail address
• Full postal address

All necessary files have been uploaded:

Manuscript:

• Include keywords
• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)

Supplemental files (where applicable)

Further considerations

• Manuscript has been 'spell checked' and 'grammar checked'
• All references mentioned in the Reference List are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
• Relevant declarations of interest have been made
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

Article structure

Manuscripts should be prepared according to the guidelines set forth in the Publication Manual of the American Psychological Association (6th ed., 2009). Of note, section headings should not be numbered.

Manuscripts should ordinarily not exceed 50 pages, *including* references and tabular material. Exceptions may be made with prior approval of the Editor in Chief. Manuscript length can often be managed through the judicious use of appendices. In general the References section should be limited to citations actually discussed in the text. References to articles solely included in meta-analyses should be included in an appendix, which will appear in the on line version of the paper but not in the print copy. Similarly, extensive Tables describing study characteristics, containing material published elsewhere, or presenting formulas and other technical material should also be included in an appendix. Authors can direct readers to the appendices in appropriate places in the text.

It is authors' responsibility to ensure their reviews are comprehensive and as up to date as possible (at least through the prior calendar year) so the data are still current at the time of publication. Authors are referred to the PRISMA Guidelines (http://www.prisma-statement.org/statement.htm) for guidance in conducting reviews and preparing manuscripts. Adherence to the Guidelines is not required, but is

recommended to enhance quality of submissions and impact of published papers on the field.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information

Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. **Note: The title page should be the first page of the manuscript document indicating the author's names and affiliations and the corresponding author's complete contact information.**

Author names and affiliations. Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author within the cover letter.

Corresponding author. Clearly indicate who is willing to handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.**

Present/permanent address. If an author has moved since the work described in the article was done, or was visiting at the time, a "Present address"' (or "Permanent address") may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A concise and factual abstract is required (not exceeding 200 words). This should be typed on a separate page following the title page. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separate from the article, so it must be able to stand alone. References should therefore be avoided, but if essential, they must be cited in full, without reference to the reference list.

Graphical abstract

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images and in accordance with all technical requirements: Illustration Service.

Highlights

Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Electronic artwork

General points

• Make sure you use uniform lettering and sizing of your original artwork.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
• Number the illustrations according to their sequence in the text.

• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the published version.
• Submit each illustration as a separate file.
A detailed guide on electronic artwork is available.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References

Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 1-4338-0559-6, copies of which may be ordered from http://books.apa.org/books.cfm?id=4200067 or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK. Details concerning this referencing style can also be found at http://humanities.byu.edu/linguistics/Henrichsen/APA/APA01.html

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references

This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue

Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference style

References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication. **References should be formatted with a hanging indent (i.e., the first line of each reference is flush left while the subsequent lines are indented).**
Examples: Reference to a journal publication: Van der Geer, J., Hanraads, J. A. J., & Lupton R. A. (2000). The art of writing a scientific article. *Journal of Scientific Communications,* 163, 51-59.
Reference to a book: Strunk, W., Jr., &White, E. B. (1979). *The elements of style.* (3rd ed.). New York: Macmillan, (Chapter 4).
Reference to a chapter in an edited book: Mettam, G. R., & Adams, L. B. (1994). How to prepare an electronic version of your article. In B.S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281-304). New York: E-Publishing Inc.
[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions.* Mendeley Data, v1. http://dx.doi.org/10.17632/xwj98nb39r.1
Video

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 150 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

RESEARCH DATA
This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project. Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section

for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

Data linking

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that give them a better understanding of the research described.
There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.
For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.
In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Transparency

To foster transparency, we encourage you to state the availability of your data in your submission. If your data is unavailable to access or unsuitable to post, this gives you the opportunity to indicate why. If you submit this form with your manuscript as a supplementary file, the statement will appear next to your published article on ScienceDirect.

Chapter Two: Empirical Paper

Adverse Experiences in Childhood and the Onset and Development of Psychosis, Depression and Anxiety: The Role of Self-Concept Clarity

Prepared in accordance with the author guidance for:

Behaviour Research and Therapy

Total word count: 7916

Laura J. Binsale

Doctorate in Clinical Psychology

Division of Health Research

Lancaster University

Lancaster

LA1 4YT

l.binsale@lancaster.ac.uk

Abstract

Self-concept clarity (SCC) is defined as the “extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141). SCC may be an important factor in the onset and development of psychopathology and reduced levels of SCC have been associated with traumatic experiences in childhood. The current research explored the relationship between adverse childhood experiences and SCC and how these two factors may be associated with psychotic experiences, anxiety and depression. Participants (n = 145) were allocated to one of three groups (1) psychosis group (presence of psychotic experiences), (2) anxiety/depression group (moderate-severe levels of anxiety/depression) or (3) control group (no psychotic experiences, mild levels of anxiety/depression). There were significant differences in the number of adverse childhood experiences between the three groups. Adverse experiences in childhood were found to predict anxiety, depression and psychotic experiences. There were no statistically significant differences in levels of SCC between the three groups. However, reduced levels of SCC were associated with elevated anxious and depressive symptoms and SCC emerged as a significant predictor of anxiety and depression. The research supports previous findings, which highlight the potential role that SCC may have in the onset and development of psychopathology. The possible mechanisms underlying this association are discussed.

Keywords: Self-concept clarity (SCC), psychosis, anxiety, depression, trauma

The association between trauma and psychosis in adulthood is widely accepted (Matheson, Shepherd, Pinchbeck, Laurens, & Carr, 2013; Varese et al., 2012). It has been reported that 77% of service users affected by a first episode of psychosis had experienced either physical, emotional and/or sexual abuse as a child and that exposure to childhood trauma was significantly correlated with positive symptoms of psychosis (Duhig et al., 2015). In one review it is also suggested that adverse experiences in childhood, are a causal factor for psychosis and schizophrenia (Read, Os, Morrison, & Ross, 2005). However, trauma may not just be specifically related to psychosis and schizophrenia but rather, may be significant in the development of psychopathology more generally. Traumatic events experienced as a child have been found to significantly predict anxiety disorders and depression in adulthood (Fernandes & Osório, 2015; Gibb, Chelminski, & Zimmerman, 2007; Huh, Kim, Lee, & Chae, 2017; Huh, Kim, Yu, & Chae, 2014).

One problem in understanding the unique origins of psychosis, anxiety and depression in this context, is that they co-occur. The comorbidity of anxiety and depressive symptoms is widely recognised (de Graaf, Bijl, Spijker, Beekman, & Vollebergh, 2003; Jacobi et al., 2004; Kessler, McGonagle, Zhao, & et al, 1994), as is the co-occurrence of anxious, depressive and psychotic symptomology (Wigman et al., 2012). Wigman et al. (2012) reported that 27% of participants, who met the criteria for a diagnosis of either anxiety or depression, displayed at least one symptom congruent with psychosis. Further analysis revealed that the presence of psychotic symptomology was significantly associated with exposure to traumatic experiences. Their findings correspond with recent research which reported that the experience of childhood trauma is significantly related to a mixture of psychosis, anxiety and depression as opposed to these presentations in isolation (van Nierop, Myin-Germeys, & van Winkel, 2016). Recently there has been interest in teasing out causal pathways related to childhood adversity that might distinguish between hallucinations,

paranoia and depression (Bentall et al., 2014; Sitko, Bentall, Shevlin, O'Sullivan, & Sellwood, 2013). In one general population study, particular types of adverse experiences in childhood were found to be related to specific symptoms and furthermore, these associations were mediated by preferred attachment styles (Sitko et al., 2013).

Self-concept clarity (SCC) defined as the "extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable" (Campbell et al., 1996, p.141) is a factor, which may help with these efforts. Low levels of SCC have been consistently associated with psychosis, elevated symptoms of depression, anxiety, as well as other mental health problems (*See Chapter 1 for a review of the literature*).

One hypothesis as to why this could be is that individuals with uncertain self-concepts may be more susceptible to, and influenced by external stimuli (Campbell, 1990) and that an uncertain belief about oneself may result in an over-reliance on the opinions and evaluations of others (Wilson & Rapee, 2006). This is congruent with previous research which suggests that in the context of social anxiety, if SCC is impaired then it might increase the significance of perceived appraisals from others (Stopa, Brown, Luke, & Hirsch, 2010). Similarities can be drawn between this conceptualisation and *social comparison theory*, which proposes that when individuals feel uncertain about their personal attributes, beliefs and opinions, they engage in a process of comparing themselves against others (Festinger, 1954). SCC and social comparison are inversely associated (Butzer & Kuiper, 2006). Butzer and Kuiper (2006) also found that SCC fully mediated the relationship between social comparison and anxiety and depression (*a more in depth discussion of SCC, specifically the similarities and differences between SCC and other theoretical perspectives can be found in Chapter 3.)*

The *self* and particularly *disturbances of the self* have been linked to the onset and development of psychosis (Nelson, Thompson, & Yung, 2012; Sass, 2014). Nelson et al.

(2012) reported that levels of self-disturbance were not only significantly higher in a high risk for psychosis sample compared to a healthy control group, but also significantly predicted the onset of psychosis at a 1.5 year follow up point. It seems that most research to date has not considered SCC as a widely trans-diagnostic issue and analyses have focused either on association or in a few cases, SCC as part of an explanatory pathway. In an example of the latter, Evans et al. (2015), propose that the experience of childhood trauma could disrupt the development of an integrated self-concept. Consistent with this hypothesis, they found that the childhood trauma and psychosis association was dependent upon reduced SCC.

The possible impact of trauma on SCC was further explored by researchers who explored the relationship between SCC and two types of trauma, sexual assault and motor-vehicle accidents (Keshet & Gilboa-Schechtman, 2016). The authors compared three groups of female participants: women who had experienced sexual assault, women who had experienced a motor-vehicle accident and women who stated no trauma history. They reported that women who had experienced sexual assault had significantly lower levels of SCC compared to the other two groups. Furthermore, Keshet and Gilboa-Schechtman (2016), assessed participants for post-traumatic stress disorder (PTSD) and found evidence to suggest that participants who met the clinical threshold for PTSD, versus participants who did not meet the clinical threshold, reported significantly lower levels of SCC. This finding, further supports the association between SCC, trauma and anxiety disorders more generally.

Rationale, Aims and Method

Rationale. Self-concept clarity may play an important role in the onset and development of psychosis (Cicero, Becker, Martin, Docherty, & Kerns, 2013; Cicero, Docherty, Becker, Martin, & Kerns, 2015; Cicero, Martin, Becker, & Kerns, 2015; Dimaggio & Lysaker, 2015), but, as stated above, this factor is also associated with depression and

anxiety (van Nierop et al., 2016; Wigman et al., 2012). Given that some authors highlight issues with self-concept as being a specific route to psychotic phenomena (Evans et al., 2015) there is a need to tease out if SCC is a mediator specifically linking childhood trauma to psychotic symptoms rather than to psychopathology in general. That is, is the mediating role of SCC in psychosis related to those symptoms alone or is it an important mediator between childhood trauma and anxiety and depression as well?

Aims. The aim was to replicate the findings from Evans et al. (2015), where SCC mediated the relationship between childhood trauma and psychosis. The intention was also to expand on previous findings and explore whether SCC mediates the relationship between childhood trauma, depression and anxiety.

Method. To explore these questions, participants were allocated to one of three groups: (1) psychosis group (the presence of psychotic experiences), (2) anxiety/depression group (the presence of moderate-severe levels of anxiety and/or depression) and a (3) control group (the absence of psychotic experiences, anxiety and depression) were compared in terms of the value of SCC as a mediator between childhood trauma and symptomology.

Hypotheses

Self-concept clarity. It was predicted that (1a) SCC will be significantly reduced in the psychosis group, compared to the anxiety/depression and control group and (1b) SCC will be significantly reduced in the anxiety/depression group, versus the control group.

Adverse childhood experiences. Initial hypotheses predicted that there would be a significant difference between self-reported adverse childhood experiences between each of the three groups. More specifically (2a) there would be a significantly higher prevalence of adverse childhood experiences in the psychosis group, compared to the anxiety/depression and control group and (2b) there would be a significantly greater number of adverse childhood experiences reported by the anxiety/depression, versus the control group.

Self-concept clarity as a mediator. It was anticipated that (3a) SCC will either partially or fully mediate the relationship between adverse childhood experiences and psychosis and (3b) will partially or fully mediate the relationship between adverse childhood experiences and anxiety and depression.

Methods

Research Setting

All data were collected via an online database (Qualtrics, 2005). Advertisements were placed in multiple UK National Health Service (NHS) settings, including two Early Intervention for Psychosis Services, one Primary Care Service and several Community Mental Health Teams. The research was also advertised through third sector online sources, such as, the Hearing Voices Network (HVN) social media accounts and through a University in England's research section of their website.

Participants

To take part participants were required to be aged 18-65 years and fluent in the English Language. A total of 164 participants consented to take part in the online study. Of those, 19 participants were excluded: 18 completed ≤50% of the study and one was <18 years old. Thus 145 participants were included.

Measures

Adverse childhood experiences. Adverse Childhood Events (ACE) (Felitti et al., 1998), is a 10-item self-report measure aimed at identifying early life experiences of physical, sexual and emotional abuse and neglect by parents or caregivers. Participants are asked a series of 'yes-no' questions about experiences, which occurred during the first 18 years of their life (e.g. "did a parent or other adult in the household often… push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?"). A "yes"

response receives a score of 1 and a “no” response a score of 0. Individual items are added together to provide an overall score, the maximum overall score is 10.

Kappa coefficients were found to range from good to excellent, indicating that retrospective reports of early abuse and household dysfunction were generally stable over time (Dube, Williamson, Thompson, Felitti, & Anda, 2004). Though no validity data are available, a review of 40 studies assessing the validity of retrospective reports of ACE found that while underreporting of child maltreatments was common, false positives were rare (Hardt & Rutter, 2004).

Anxiety. Generalised Anxiety Disorder Assessment (GAD-7) (Spitzer, Kroenke, Williams, & Lōwe, 2006) is a 7-item self-report measure recommended for screening for generalised anxiety disorder and evaluating its severity. Participants are asked to think about the last 2 weeks and respond to statements related to how they have been feeling (e.g. “feeling nervous, anxious or on edge”) on a 4-point Likert scale, ‘not at all’ (0), ‘several days’ (1), ‘more than half the days’ (2), ‘nearly every day’ (3). Scores range from 0-21 and participants are classified into one of four categories based on their overall score: ‘no anxiety’ (0-4), ‘mild anxiety’ (5-9), ‘moderate anxiety’ (10-14) or, ‘severe anxiety’ (15-21). The GAD-7 has demonstrated good internal consistency (α=0.92) and test-retest reliability (r=0.83). Cronbach’s alpha was computed for the scale in the current research, which showed high internal consistency (α=.93).

Depression. Patient Health Questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001) is a 9-item self-report measure of depression symptom severity. Participants are asked to think about the last 2 weeks and respond to statements related to how they have been feeling (e.g. “feeling bad about yourself – or that you are a failure or have let yourself or your family down”) on a 4-point Likert scale, ‘not at all’ (0), ‘several days’ (1), ‘more than half the days’ (2), ‘nearly every day’ (3). Scores range from 0-27 and participants are classified

into one of five categories based on their overall score: ‘no depression’ (0-4), ‘mild depression’ (5-9), ‘moderate depression’ (10-14), ‘moderately severe depression’ (15-19) or, ‘severe depression’ (20-27). The PHQ- 9 has demonstrated good internal consistency (α=0.89) (Kroenke et al., 2001). Cronbach’s alpha was computed for the scale in the current research, which showed high internal consistency (α=.93).

Psychosis. Psychosis Screening Questionnaire (PSQ) (Bebbington & Nayani, 1995) is a screening tool for psychotic experiences. The PSQ has 6-key questions enquiring about hypomania, thought interference, persecution, perceptual abnormalities and hallucinations all of which have secondary follow-up questions. Participants are asked to consider their experiences over the past year and provide a ‘yes-no’ response to each of the items. For example, the key question corresponding to persecution is ‘over the past year… have there been times when you felt people were against you?’ and one of the two secondary questions asks ‘over the past year… have there been times when you felt that people were deliberately acting to harm you or your interests?’ In total there are 20-items, 6-key questions and 14-secondary questions.

Overall, the PSQ has been reported to have a sensitivity of 96.9%, a specificity of 95.3%, a positive predictive value of 91.2%, and a negative predictive value of 98.4% in determining the presence of psychosis (Bebbington & Nayani, 1995).

For the purpose of the current research the PSQ was used to screen participants for the presence of psychotic experiences. This screening process produced a binary outcome of either the presence of psychotic experiences or the absence of psychotic experiences. This process was used to allocate participants to appropriate groups in preparation for the analysis (see *participants* sub-section - *group allocation - psychosis group*). This approach to identifying individuals with a psychotic disorder is congruent with previous research (Kelleher & DeVylder, 2017).

Self-concept clarity. Self-Concept Clarity Scale (SCCS) (Campbell et al., 1996) is a self-report 12-item scale evaluating the extent to which beliefs about self are clearly defined, stable, and consistent. Participants are asked to reflect on their thoughts, feelings and experiences and respond to each of the statements ('my beliefs about myself often conflict with one another') using a 5-point Likert scale ranging from strongly agree (1) to strongly disagree (5). Items 6 and 11 on the SCCS are reverse scored (e.g. 'I seldom experience conflict between the different aspects of my personality') using a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1). The SCCS has a good internal consistency (α=0.86) and test-retest reliability (r=0.79) (Campbell, Assanand, & Paula, 2003). Cronbach's alpha was computed for the scale in the current research, which showed high internal consistency (α=.89).

Group allocation.

Psychosis group. Participants were allocated to the psychosis group if they answered positively to the auditory and visual hallucinations key question 'PSQ 6: Over the past year, have there been times when you heard or saw things that other people couldn't?' (n = 57). The authors of the PSQ state that if a participant answers positively to this question, automatically they meet the threshold for psychotic experiences, even if they do not answer positively to any of the other key questions.

For each of the items the authors calculated a positive predictive value (PPV) and a negative predictive value (NPV). A PPV indicates that there is a very high likelihood of the presence of psychotic experiences, if a yes response is provided to the question and a NPV indicates that there is a very small likelihood of the presence of psychotic experiences if a no response is provided. The auditory and visual hallucinations key question has a reported PPV of 77% and NPV of 87%. This item has been reported to have robust sensitivity and

specificity, not just for predicting hallucinations but for the prediction of psychotic experiences more generally.

Stage 2. Participants who did not answer positively to the auditory and visual hallucinations key question but who did report that they had received a formal diagnosis of a psychotic disorder were allocated to the psychosis group (n = 1). This approach to identifying psychotic disorders is consistent with previous research (Wiles et al., 2006).

Anxiety/depression group. Participants were allocated to the anxiety/depression group if they met the clinical cut off for moderate - severe anxiety as defined by the GAD-7 (an overall score of ≥ 10) or moderate –severe depression as defined by the PHQ-9 (an overall score of ≥ 10), (n = 34).

Control group. Participants who did not meet the criteria for either the psychosis or anxiety/depression group were allocated to the control group (n = 53). According to the screening criteria these participants were not experiencing clinical levels of anxiety and/or depression, or psychotic experiences.

Procedure

All participants were recruited through either leaflet or poster advertisements (*Appendix 4-D*) across multiple UK NHS sites or through online advertisements, where electronic versions of the leaflet and poster were shared by the HVN social media accounts and through a specific research section of a University website. These contained an online link to a participant information sheet (*Appendix 4-A*), which was reviewed prior to providing informed consent. Once consent was obtained participants were directed to the psychometric measures. On completion participants were provided with the debrief sheet (*Appendix 4-C)* which was available to download.

Participation was anonymous and no personal/identifiable details were collected. However, once the participants had completed the research process there was an option to

provide an e-mail address to receive a summary of the research on completion. These e-mail addresses were saved in a different location to the data to ensure confidentiality and protect their anonymity (n = 86).

Participants were allocated to one of three groups: psychosis, anxiety/depression or control. A detailed description of this process can be found in the '*participants – group allocation'* subsection.

Data Analysis

Power analysis. A sample size calculation was completed using *PowerMediation* package for R-project (R Core Team, 2014) based on a previous study of the mediational effect of self-concept clarity between childhood traumas and psychotic experiences (Evans et al, 2015). Not all details were available from that study, therefore assumptions were made about the size of the odds ratio and confidence intervals. For similar sized groups and assuming an odds ratio of 2 for the mediational effect, a correlation between SCC and childhood trauma of .5, a power of .8 and $\alpha = 0.05$; a sample size of 88 was required ([power=.8, b2=log(2), sigma.m=1, p=29/60, corr.xm=.5](1) 88). Therefore, a target of 90 participants was set so as to obtain equal sized groups),

Assumption of normality. The data were analysed to assess the assumptions for parametric testing, the results of which were conflicting. Further information on this process can be found in Appendix 2-A. The distribution of scores were approximately normal based on the skewness and kurtosis values for each of the variables, with the exception of the control group where the PHQ and ACE variables displayed marginal levels of skew. Consultation was sought from an independent statistician who reviewed the analyses and graphical presentations of the data and reported that the data would be suitable for parametric testing.

Data analysis. Data were analysed using the statistical package SPSS (SPSS Inc., 2009). Pearson's correlation analyses were calculated to explore the associations between each of the four variables: SCCS, PHQ, GAD, and ACE. One of the hypotheses was that SCCS would mediate the relationship between adverse childhood experiences (ACE) and anxiety (GAD), depression (PHQ), and psychosis (PSQ) in adulthood. Thus, in preparation for a mediation analysis, a four-staged methodological approach was taken to test for mediation based on Baron and Kenny's (1986) method (*see Appendix 2-B*), this included a series of linear and binary logistic regressions.

Results

Participants

Participants' age ranged from 18-65 years ($\bar{x}$ = 35.6, SD = 12.4); the majority were men (n = 106, 73.1%) and described their ethnicity as white-Caucasian (n = 140, 96.6%). Demographic characteristics and scores on the psychometric measures for the total sample population and for each of the three groups (psychosis, anxiety/depression and control) are presented in Table 1. Data relating to the participants' mental health history is reported in Table 2. One-way analyses of variances (ANOVA) revealed that the groups did not differ on the following demographic variables, ethnicity, age, level of education, or employment status ($p>.05$) but did differ on gender [$F(2,142) = 3.33$, $p = .04$].

As the groups differed on gender, further analyses were undertaken to examine the presence of gender differences within the variables. Independent t-tests revealed that there were no gender differences in any of the three groups, psychosis, anxiety/depression or control, for all four variables SCCS, PHQ, GAD, and ACE ($p > .05$).

Group Comparisons

One-way analyses of variances (ANOVA) and independent t-tests were used to test the hypothesis that levels of SCC and reported adverse childhood experiences would be significantly different in each of the three groups (Table 3).

Self-concept clarity (SCC). There were slight variations in SCC between each of the three groups. As predicted participants in the control group reported the highest level of SCC ($\bar{x}$ = 37.23) compared to participants in the psychosis group ($\bar{x}$ = 34.95) and the anxiety/depression group ($\bar{x}$ = 33.00). However, these differences did not reach statistical significance [F(2,142) = 1.47, p =.233].

Adverse childhood experiences (ACE). It was predicted that there would be a significant difference between the three groups in relation to the number of reported of adverse childhood experiences, with the psychosis group reporting the highest number of adverse experiences and the control group reporting the lowest.

An ANOVA revealed that there was a significant difference in ACE between the three groups [F(2,142) = 18.03, p =.000]. Post-hoc tests revealed that there was a significant difference between the anxiety/depression ($\bar{x}$ = 3.41, SD = 2.06) and psychosis group [$\bar{x}$ = 4.64, SD = 2.06; t(90) = 2.52, p = .013] and between the psychosis ($\bar{x}$ = 4.64, SD = 2.35) and control group [$\bar{x}$ = 2.23, SD = 1.86; t(109) = 5.96, p = .000]; with the psychosis group reporting the highest number of adverse experiences. Furthermore, there was a significant difference between the anxiety/depression ($\bar{x}$ = 3.41, SD = 2.06) and the control group [$\bar{x}$ = 2.23, SD = 1.86; t(85) = 2.78, p = .007], with the participants in the anxiety and depression group reporting significantly more adverse childhood experiences than the control group.

Anxiety and depression. As expected there were significant differences between the three groups on the anxiety (GAD) [F(2,142) = 146.57, p =.000] and depression (PHQ) [F(2,142) = 86.97, p =.000] measures; participants in the anxiety and depression groups

reported significantly higher levels of anxiety ($\bar{x}$ =15.32, SD = 3.91) and depression ($\bar{x}$ = 13.68, SD = 5.77) compared to the psychosis [GAD ($\bar{x}$ =6.21, SD =9.21; t(89) = -4.13, p =.000, PHQ ($\bar{x}$ = 9.57, SD = 6.84); t(90) = -2.94, p= .004] and control group [GAD ($\bar{x}$ =3.38, SD =2.36); t(49) = 16.06, p =.000, PHQ ($\bar{x}$ = 1.96, SD = 2.26); t(40) = 11.30, p= .000]. Furthermore, the psychosis group reported significantly higher levels of both anxiety and depression than the control group [GAD; t(90) = -4.13, p =.000, PHQ; t(90) = -2.94, p= .004].

Pearson's correlation analyses (Table 4) for the total sample revealed significant associations between lower levels of SCC and higher reported levels of anxiety (r = -.171, p = .040) and depression (r = -.284, p = .001). Higher levels of adverse experiences in childhood were correlated with higher levels of anxiety (r = .355, p = .000) and depression (r = .387, p = .000). Correlation analyses for the total sample (r = .749, p = .000) and for the psychosis (r = .583, p = .000), and anxiety and depression (r = .470, p = .005) groups revealed a consistently significant association between increased levels of depression and anxiety, suggesting that these two constructs co-occur with one another.

Within the psychosis group, there was a significant negative association between increased levels of depression and diminished SCC (r = -420, p = .001); this association was specific to the psychosis group. There was no association between depression and SCC in the anxiety and depression group, however, interestingly there was a significant positive association between levels of SCC and depression in the control group (r = .376, p = .006). An additional finding specific only to the psychosis group was an association between adverse childhood experiences and elevated anxiety levels (r = .261, p = .048); this significant association was not observed in the anxiety and depression or control group.

Regression Analyses

In preparation for the proposed mediation analyses, a series of linear regression (Table 5) and binary logistic regression (Table 6) analyses were completed. Adverse childhood experiences emerged a significant predictor of all three mental health constructs anxiety (GAD; $F(1,143) = 24.33$, $p < .001$, $R^2 = .13$), depression (PHQ; $F(1,143) = 12.88$, $p < .001$, $R^2 = .08$) and psychotic experiences [defined by the PSQ *6*; $F(1,1) = 25.1$, $p < .001$, $R^2 = .22$ (*Nagelkerke*)]. It appeared that adverse childhood experiences accounted for the largest variation as a predictor for psychotic experiences compared to anxiety and depression. Adverse childhood experiences did not emerge as a predictor of levels of SCC ($F(1,143) = .06$, $p > .05$, $R^2 = .00$).

SCC emerged as a predictor for both anxiety ($F(1,143) = 4.28$, $p < .05$, $R^2 = .03$) and depression ($F(1,143) = 12.59$, $p < .001$, $R^2 = .08$), the results indicated that lower levels of SCC partially predicted higher levels of anxiety and depression and SCC accounted for greater variance within the depression variable. SCC did not emerge as a significant predictor for psychotic experiences [defined by the PSQ *6*; $F(1,1) = 5.13$, $p > .05$, $R^2 = .00$ (*Cox & Snell*)]. As the indirect path from adverse childhood experiences through to SCCS was non-significant the data did not meet the assumptions for a mediation analysis (Baron & Kenny, 1986).

Discussion

The present study aimed to further explore the association between SCC and psychosis, anxiety and depression. A specific focus was on the possible association between adverse experiences in childhood and how such experiences may be associated with SCC and psychosis, anxiety and depression in adulthood. In addition, the intention was to replicate previous findings by Evans et al. (2015) and explore whether SCC mediated the relationship

between adverse experiences in childhood and the onset and development of psychosis, anxiety and/or depression in adulthood.

The results of the research present an alternative perspective to the one that was predicted in the initial hypotheses. In summary, greater levels of adverse childhood experiences were associated with elevated levels of anxiety and depression. Regression analyses revealed that adverse experiences predicted the presence of psychosis and anxiety and depressive symptoms in the total sample population. As predicted there were significant differences in the number of reported adverse childhood experiences between each of the three groups, with participants allocated to the psychosis group, reporting significantly higher incidences of adverse experiences compared to the anxiety/depression and control groups which in turn reported a significantly higher prevalence of adverse experiences than the control group.

These findings are consistent with the evidence base which increasingly supports the association between adverse and traumatic experiences in childhood and psychosis, anxiety and depression (Gibb et al., 2007; Huh et al., 2014; Spinhoven et al., 2010) in adulthood. As predicted, both of the clinical groups reported significantly higher adverse experiences in childhood compared to the control group, but interestingly there was also a significant difference between the psychosis and the anxiety/depression group. Regression analyses revealed that adverse experiences in childhood predicted anxiety, depression and psychotic experiences in the current sample and that they accounted for the largest proportion of variance in the relationship with psychotic experiences (22%) compared to anxiety (13%) and depression (8%).

The current research used a key question on the Psychosis Screening Questionnaire (PSQ; Bebbington & Nayani, 1995) to screen participants for psychotic experiences. This question is related to visual hallucinations and voice hearing, it asked participants if over the

past year, they had heard or seen things that other people couldn't. Thus, the vast majority (n= 57, 98%) of participants in the psychosis group were currently or had in the past year experienced visual hallucinations and/or heard voices. The association between childhood trauma and hallucinations has been recognised in the literature, with growing evidence supporting a specific pathway between childhood sexual abuse and the experience of hallucinatory experiences (Hammersley et al., 2003; John Read, Agar, Argyle, & Aderhold, 2003; Sitko et al., 2013).

Although historically hallucinatory experiences have been predominately associated with psychotic disorders, recent research which analysed data from the Adult Psychiatric Morbidity Study, reported that hallucinations were prevalent across all mental disorders including anxiety and depressive disorders (Kelleher & DeVylder, 2017). In light of this recent finding, the screening method used during the group allocation process in the current research is problematic. The findings could, therefore, be inferred as individuals who experience hallucinations report significantly higher adverse childhood experiences rather than individuals who report psychotic experiences. According to Kelleher and DeVylder (2017) the presence of hallucinations may not be indicative of psychotic experiences but may be representative of psychopathology more generally.

The finding that levels of SCC were not statistically different between each of the three groups is contradictory to the initial hypothesis and unexpected. One possible explanation could be limitations related to sampling. In particular, although participants allocated to the control group did not meet the criteria for the psychosis or the anxiety/depression group, the majority of the group (n = 32, 60.4%) did report that they had previously accessed support from a health professional for mental health difficulties and a proportion of the group had been admitted to hospital for mental health difficulties (n = 10,

18.9%) and had received a psychiatric diagnosis (n = 20, 37.7%). Thus, the question arises as to whether they should be considered to be a genuine control group.

The finding that there was no significant difference in levels of SCC between the three groups is contrasted with previous case-control research in this area. In all five comparable research studies, levels of SCC were reported to be significantly impaired in clinical vs. healthy control groups (Berna et al., 2016; David Colin Cicero, Martin, Becker, & Kerns, 2016; de Sousa, Sellwood, Spray, Fernyhough, & Bentall, 2016; Evans, Reid, Preston, Palmier-Claus, & Sellwood, 2015; Roepke et al., 2011). Of these studies, three reported mean scores for the Self-Concept Clarity Scale (SCCS; Campbell et al., 1996) [$\bar{x}$ = 46.56 (Berna et al., 2016); $\bar{x}$ = 44.48 (David Colin Cicero et al., 2016); $\bar{x}$ = 44.56 (de Sousa et al., 2016)] and it is apparent that these control group mean scores are far greater compared to the SCCS score for control group in the current research ($\bar{x}$ = 37.23). Yet, overall the average SCC scores in their clinical groups were similar to that of the current research ($\bar{x}$ = 32.33 (Berna et al., 2016); $\bar{x}$ = 40.63 (David Colin Cicero et al., 2016); $\bar{x}$ = 31.31 (de Sousa et al., 2016), when the average mean of the two clinical groups was combined ($\bar{x}$ = 33.98). Thus suggesting that the unexpected lack of association between SCC and clinical status is attributable to an unusual control group who had impairments in SCC.

The inverse relationship between SCC and anxiety and depression, is congruent with previous research (Butzer & Kuiper, 2006; Keshet & Gilboa-Schechtman, 2016; Kusec, Tallon, & Koerner, 2016; Noyman-Veksler, Weinberg, Fennig, Davidson, & Shahar, 2013; Richman et al., 2016; Stopa, Brown, Luke, & Hirsch, 2010). Analyses revealed that low levels of SCC predicted anxious and depressive symptoms in the total sample. However, this association was not present between SCC and psychotic experiences. One explanation for this is that anxious and depressive symptoms accounted for the relevant variance.

It has been suggested that individuals with uncertain self-concepts may be more susceptible to, and influenced by external stimuli (Campbell, 1990) and that an uncertain belief about oneself may result in an over-reliance on the opinions and evaluations of others (Wilson & Rapee, 2006). Wilson and Rapee (2006) suggest that impaired levels of SCC may be an especially pertinent characteristic of mental disorders that involve negatively biased self-evaluations, such as, depression and anxiety. Thus, perceived negative evaluations from others are of greater significance, as individuals with reduced SCC are uncertain about their positive attributes and, therefore, self-concept. Wilson and Rapee's (2006) conceptualisation of SCC provides an explanation for the current finding that SCC predicts anxiety and depression but not psychotic experiences.

Previous research has highlighted the effect of trauma on SCC (Boelen, Keijsers, & van den Hout, 2012; Keshet & Gilboa-Schechtman, 2016), supporting the notion that trauma could disrupt the development of an integrated self-concept (Evans et al., 2015). However, the findings from the current research do not support this hypothesis; SCC did not correlate with adverse childhood experiences and in turn, reported adverse experiences did not predict levels of SCC. One possible explanation for this null finding could be that there are distinct differences between some specific types of adversity and trauma and thus, differences in the ways that these incidents are experienced and processed. All types of childhood trauma as defined by the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), such as, physical, emotional and sexual abuse were inversely associated with SCC and further analyses revealed that SCC mediated the relationship between SCC and psychosis (Evans et al., 2015). It is plausible that such types of adversity, which were assessed by the Adverse Childhood Experiences (ACE) questionnaire, such as parental separation or parental substance misuse may not interact with SCC in the same way that physical, emotional or sexual abuse may.

Anxiety disorders and depression exhibit a high degree of comorbidity (de Graaf et al., 2003; Jacobi et al., 2004; Kessler RC et al., 1994) and this association was further supported by the findings from the current research where large effect sizes were consistently observed in the relationship between anxiety and depression. Previous research has highlighted the co-existence of psychotic symptomatology, anxiety and depression (van Nierop et al., 2016; Wigman et al., 2012) and this was observed in the current research as participants in the psychosis group reported significantly elevated anxiety and depressive symptoms compared to the control group. The co-occurrence of such presentations presents potential barriers to identifying distinct and unique underlying pathways.

Having said this, it may be that the comorbidity of such presentations and the consistently reported association between diminished levels of SCC and psychopathology more generally (Błażek, 2015; Butzer & Kuiper, 2006; Kusec et al., 2016; Lear & Pepper, 2015; Orr & Moscovitch, 2015; Peleg-Sagy & Shahar, 2015; Reyes et al., 2015; Stopa et al., 2010) may be explained via a shared pathway, such as, chronic stress. Schiller, Hammen and Shahar (2016) compared three theoretical models to examine the links between stress, SCC and psychopathology; they reported that chronic stress emerged as a significant predictor of impaired levels of SCC. These findings were consistent with their proposed *scarring model*, which proposes that psychological distress erodes SCC. However, directionality could not be ascertained and thus, it may be that low levels of SCC increase an individual's susceptibility to stress.

Clinical Implications

The finding from the current research that SCC emerged as a significant predictor for both anxious and depressive symptoms could be used to inform future clinical interventions. As discussed previously it is possible that individuals with reduced levels of SCC may be more attuned to and influenced by perceived appraisals and evaluations of others, which

could result in an increase in specific behaviours such as hyper-vigilance to, and misinterpretation of external stimuli, both of which may act to further reduce levels of SCC (Stopa et al. 2010). Individuals may appear disengaged or distracted and may miss important social cues. Thus, interventions, which aim to reduce such behaviours, by increasing non-judgmental, present moment awareness such as, Acceptance and Commitment Therapy (ACT; Luoma, Hayes, & Walser, 2008), Compassion Focused Therapy (CFT; Gilbert, 2009) and Mindfulness Based Cognitive Therapy (MBCT; Teasdale, Williams, & Segal, 2014), may be beneficial.

The current research further highlights the association between adverse experiences in childhood and psychopathology in adulthood. Therefore, it is important to consider how services can both proactively and reactively respond to an increasing body of literature, which cites an association between childhood trauma and mental health difficulties in adulthood. In response to traumatic experiences it would be beneficial for mental health services to consistently and routinely ask about adverse and traumatic experiences across the lifespan to inform psychological interventions and treatment plans. Recent research has highlighted the benefit of using a structured tool, such as, the CTQ to ask individuals about these experiences as they evaluated unstructured clinical assessments versus the utility of the CTQ in an adult mental health setting (Rossiter et al., 2015). They found that there were significant discrepancies in the enquiry and reporting of traumatic experiences between the two approaches, with 38% of traumatic experiences disclosed through unstructured clinical assessments compared to 77% disclosed using the CTQ. Furthermore, in relation to childhood trauma they reported high rates of non-enquiry from mental health professionals, which was in contrast to the significant level of childhood trauma disclosed by the individuals attending the service.

As the findings from the current research suggest that adverse childhood experiences significantly predicted anxiety, depression and psychotic experiences, individuals who disclose histories of trauma may benefit from specific interventions, which are trauma informed, and promote recovery from trauma. In fact, trauma based interventions for people with psychotic disorders are gaining momentum (Sin & Spain, 2016). Sin and Spain (2016) explored the effectiveness of psychological interventions for trauma in individuals who experience psychosis. They found evidence to suggest that trauma focused psychological interventions such as, Trauma Focused Cognitive Behaviour Therapy (TFCBT) and Eye Movement Desensitisation and Reprocessing (EMDR) were effective in reducing difficulties congruent with the aftermath of trauma such as, intrusive memories and images, hypervigilance and sensitivity to threat, avoidance behaviours and negative self-beliefs. A recent review further supported the effectiveness of trauma focused interventions in individuals who experienced Post-Traumatic Stress Disorder (PTSD), however, results suggest that there may be specific gender differences which impact on the outcome of such interventions (Wade et al., 2016). It appears that women reported significantly greater reductions in PTSD related symptoms than men, following a trauma-focused intervention, yet the specific factors underpinning this gender difference is unknown.

Furthermore, although research and investment aimed at understanding the effects of traumatic and adverse experiences in childhood is important, it is imperative that the focus is also on the prevention of such experiences. Moving beyond the findings from the current research, previous research has focused on implementing and evaluating early interventions, which target the reduction of traumatic incidences. To provide a contextual overview of the potential benefits such early interventions, a report published by the NSPCC provides one of the most comprehensive overviews of child protection issues in the UK (Bentley, O'Hagan, Raff, & Bhatti, 2016). The report stated that in 2014/15 recorded sexual offences against

children increased in all four countries of the UK and that there were a total of 47,008 police recorded incidences of such offences. In the same time frame there were 10,136 police recorded cruelty and neglect offences against children and in England and Wales the number of cruelty and neglect cases had significantly increased. The report estimates that over one in six 11-17 year olds have experienced some type of severe maltreatment thus, highlighting the significant levels of trauma sustained by children within the UK.

The benefits of early interventions targeted specifically at the perinatal period, which include the 1001 critical days from conception to 24 months, have been highlighted (Balbernie & Adams, 2005). During this critical period infants are disproportionately vulnerable to abuse and neglect and in England they are seven times more likely to be killed than older children (Leadsom, Field, Burstow, & Lucas, 2016). A fifteen year follow up of a randomised study which explored the impact of an intervention during the pre-natal and early infancy period, reported that mothers who engaged with the intervention for 24 months were significantly less likely to abuse or neglect their children compared to Mothers who engaged for 9 months or less (Olds, Eckenrode, Henderson, Kitzman, & et al, 1997). A meta-analytic review, which examined the effects of early intervention programs for high-risk families and babies reported that their findings strongly indicated that such early interventions which were flexible, empowering and strengths-based were successful in reducing child maltreatment and promoting family wellness more generally (MacLeod & Nelson, 2000).

Thus, a specific focus on early interventions during the 1001 critical day period are recommended to support at risk families and reduce the number of adverse experiences which may occur. It would be beneficial if such interventions were accompanied by specific therapeutic approaches, such as, family therapy (Friend, 2012) and parent-infant psychotherapy (Baradon, et al., 2005) which have been found to mitigate the transmission and effects of intergenerational trauma within the parent-infant relationship and,

consequently, may have further implications for the reduction of associated mental health difficulties in adulthood.

Limitations

Although the approach taken to screen participants for the psychosis group was guided by previous research (Bebbington & Nayani, 1995; Kelleher & DeVylder, 2017), on reflection this process could have been more robust. Individuals were allocated to the psychosis group if they answered positively to the following question '*PSQ 6: Over the past year, have there been times when you heard or saw things that other people couldn't*?' or if they had previously received a diagnosis of a psychosis-spectrum disorder. This process discounted other key questions asked in the Psychosis Screening Questionnaire (PSQ), such as '*PSQ 2: Have you felt that your thoughts were being directly interfered with or controlled by another person*?' which is reported to have 94% positive predictive value (PPV) and 83% negative predictive value (NPV). Thus, participants allocated to the control group may not have answered positively to the hallucinations key question but may have answered positively to other key questions related to the presence of psychosis.

To strengthen future research in this area, it would useful to consider what other self-report assessment tools are available. Alternative measures of psychotic experiences, such as, the Community Assessment of Psychotic Experiences (CAPE; Mossaheb et al., 2012), which provides clear guidance on the scoring and interpretation process and has been reported to have good reliability and internal validity (Konings, Bak, Hanssen, Van Os, & Krabbendam, 2006), may offer a more robust alternative. It is likely that the process designed to allocate participants to one of the three groups, impacted on the overall results of the study. Particularly in relation to the non-significant differences in levels of SCC and the non-significant indirect pathway from adverse childhood experiences to psychotic experiences.

The demographic composition of the participants included in the current research may limit the generalisability of the overall findings. The majority of participants described their ethnicity as 'White-Caucasian' (n = 140, 96.6%) and this was also true for the psychosis group where 93.3% of participants identified with this classification of ethnicity. Yet, a systematic review and meta-analysis, which explored the incidence and prevalence of psychotic disorders in 'Black-Caribbean' ethnic groups in England, reported that there were consistently higher incidence rates of psychotic disorders within this population, when compared to the baseline population in England (Tortelli et al., 2015). They included available data from 1950-2013 in their analyses and found that a reported higher incidence of psychotic disorders had been present for more than 60 years. The online approach taken to the research was an attempt to increase diversity within the sample population, however, this has not been achieved and thus, the association between SCC and psychopathology amongst minority ethnic groups has not been captured.

Future Research

It appears that the non-significant differences in SCC levels between the three groups may be a consequence of limitations related to the design of the study. As discussed above, levels of SCC within the control group were relatively diminished compared to previous case-control and general population studies (Berna et al., 2016; David Colin Cicero et al., 2016; de Sousa et al., 2016). Thus, future research would benefit from developing a more robust method to screen participants for the presence versus absence of mental health difficulties. Based on findings from the current research it would be advisable to widen the recruitment strategy for future research and recruit participants to the control group from non-healthcare settings only. As there is a growing evidence base supporting an association between SCC and psychopathology more generally it would be useful to replicate the findings from the current research and address the discussed limitations relating to the

recruitment strategy, screening process for group allocation and the measures used to assess psychotic experiences and childhood trauma (*see Chapter 3 for a more in depth discussion*).

To date, there has been only one published study, which explored the impact of a psychological intervention on SCC within a clinical population. Ropeke et al. (2011) used a case-control design to explore the impact on SCC of a Dialectic Behavioural Therapy (DBT) intervention in a sample of female participants who had received a diagnosis of borderline personality disorder. They found that participants in the DBT intervention group compared to participants who remained on a waiting list, reported significant improvements in levels of SCC. Further research would be beneficial to explore whether this finding is specific to a DBT focused intervention or whether it is related to psychological interventions more generally.

The original design of the study stated a proposed data analysis strategy, which included a mediation analysis. However, the data did not meet the required assumptions for a mediation analysis (Baron & Kenny, 1986) as the indirect path from adverse childhood experiences through to self-concept clarity was not significant. Although possible explanations as to why this may have been discussed above, it is important to consider the initial sample size calculation and how the outcome of this calculation could inform future research. A power analysis was completed based on previous research by Evans et al. (2015), however, not all of the details were available and thus, assumptions were made about the size of the odds ratio and confidence intervals. For the current research an odds ration of 2 was assumed, which equated to a total sample size of approximately 90 participants. If a more conservative odds ratio of 1.5 had been applied then this would have required a total sample size of 255, equating to 85 participants per group. Although previous research recruited a total sample of size of 60 (30 participants in each group) and reported a meditational effect

(Evans et al. (2015), it would be beneficial if future research addressed this potential limitation during subsequent study designs.

Conclusion

The current research was the first study to specifically explore the association between adverse experiences in childhood and SCC, and to consider how these two factors may contribute to the underlying mechanisms in the onset and development of psychosis, anxiety and depression in adulthood. The results further support those of previous research regarding an association between adverse childhood experiences and the presence of psychopathology in adulthood. The research highlights significantly higher reported incidences of such experiences in the psychosis sample, compared to the anxiety, depression, and control groups. The findings emphasise the need for health professionals working with individuals experiencing mental health difficulties to undertake a detailed assessment and explicitly ask about experiences of trauma, to ensure that where appropriate trauma informed treatment interventions are offered.

As predicted lower levels of SCC were associated with elevated anxious and depressive symptoms. Further analyses revealed that SCC significantly predicted both anxiety and depression; however, this association was not present in the relationship between SCC and psychotic experiences. The research adds to the increasing body of evidence, which supports an association between SCC and psychopathology. It appears that SCC may be a trans-diagnostic vulnerability factor, thus further research to explore the underlying mechanisms between SCC and psychopathology is recommended. Contrary to original hypotheses, levels of SCC did not significantly vary between the three groups. One possible explanation for this is that the majority of the control group had previously experienced mental health difficulties. Thus, although they were not experiencing anxiety, depression or psychotic experiences, they may have been experiencing other mental health difficulties,

which were not directly assessed in the research. The presence of such difficulties may have impacted on the overall results.

References

Balbernie, R., & Adams, C. (2005). Health visitors and adult mental health: the future begins here. *Community Practitioner : The Journal of the Community Practitioners' & Health Visitors' Association*, *78*(11), 389. https://doi.org/Retrieved from https://search-proquest-com.ezproxy.lancs.ac.uk/docview/213354316?accountid=11979

Baradon, T., Broughton, C., Gibbs, I., James, J., Joyce, A,. & Woodhead, J. (2005). The practice of psychoanalytic parent-infant psychotherapy: Claiming the baby. East Sussex: Routledge.

Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bebbington, P., & Nayani, T. (1995). The psychosis screening questionnaire. *International Journal of Methods in Psychiatric Research*, *5*, 11–19. https://doi.org/1049-8931/95/010011-09

Bentall, R., de Sousa, P., Varese, F., Wickham, S., Sitko, K., Haarmans, M., & Read, J. (2014). From adversity to psychosis: pathways and mechanisms from specific adversities to specific symptoms. *The International Journal for Research in Social and Genetic Epidemiology and Mental Health Services*, *49*(7), 1011–1022. https://doi.org/10.1007/s00127-014-0914-0

Bentley, H., O'Hagan, O., Raff, A., & Bhatti, I. (2016). How safe are our children? The most comprehensive overview of child protection in the UK. NSPCC. Retrieved from https://www.nspcc.org.uk/globalassets/documents/research-reports/how-safe-children-2016-report.pdf

Berna, F., Göritz, A. S., Schröder, J., Martin, B., Cermolacce, M., Allé, M. C., … Moritz, S. (2016). Self-disorders in individuals with attenuated psychotic symptoms: Contribution of a dysfunction of autobiographical memory. *Psychiatry Research, 239*, 333–341. https://doi.org/10.1016/j.psychres.2016.03.029

Bernstein, D., & Fink, L. (1998). *Childhood Trauma Questionnaire: A retrospective self-report manual*. San Antonio, TX: The Psychological Corporation.

Błażek, M. (2015). Structural aspects of self in personality disorders and the quality of life. *Current Issues in Personality Psychology*, *3*(1), 42–50. https://doi.org/10.5114/cipp.2015.50174

Boelen, P. A., Keijsers, L., & van den Hout, M. A. (2012). The role of self-concept clarity in prolonged grief disorder. *Journal of Nervous and Mental Disease*, *200*(1), 56–62. https://doi.org/10.1097/NMD.0b013e31823e577f

Butzer, B., & Kuiper, N. A. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences*, *41*(1), 167–176. https://doi.org/10.1016/j.paid.2005.12.017

Campbell, J. D. (1990). Self-Esteem and Clarity of the Self-Concept. *Journal of Personality and Social Psychology*, *59*(3), 538–549. https://doi.org/10.1037/0022-3514.59.3.538

Campbell, J. D., Assanand, S., & Paula, A. D. (2003). The Structure of the Self-Concept and Its Relation to Psychological Adjustment. *Journal of Personality*, *71*(1), 115–140. https://doi.org/10.1111/1467-6494.t01-1-00002

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-Concept Clarity: Measurement, Personality Correlates, and Cultural Boundaries. *Journal of Personality and Social Psychology*, *70*(1), 141–156. https://doi.org/10.1037/0022-3514.70.1.141

Cicero, D. C., Becker, T. M., Martin, E. A., Docherty, A. R., & Kerns, J. G. (2013). The Role of Aberrant Salience and Self-Concept Clarity in Psychotic-Like Experiences. *Personality Disorders: Theory, Research, and Treatment*, *4*(1), 33–42. https://doi.org/10.1037/a0027361

Cicero, D. C., Docherty, A. R., Becker, T. M., Martin, E. A., & Kerns, J. G. (2015). Aberrant salience, self-concept clarity, and interview-rated psychotic-like experiences. *Journal of Personality Disorders*, *29*(1), 79–99. http://dx.doi.org.ezproxy.lancs.ac.uk/101521pedi201428150

Cicero, D. C., Martin, E. A., Becker, T. M., & Kerns, J. G. (2015). Decreased self-concept clarity in people with schizophrenia. *The Journal of Nervous and Mental Disease*, *0*(0), 1–6. https://doi.org/10.1097/NMD.0000000000000442

Cicero, D. C., Martin, E. A., Becker, T. M., & Kerns, J. G. (2016). Decreased self-concept clarity in people with schizophrenia. *Journal of Nervous and Mental Disease*, *204*(2), 142–147. https://doi.org/10.1097/NMD.0000000000000442

de Graaf, R., Bijl, R. V., Spijker, J., Beekman, A. T. F., & Vollebergh, W. A. M. (2003). Temporal sequencing of lifetime mood disorders in relation to comorbid anxiety and substance use disorders. *Social Psychiatry and Psychiatric Epidemiology*, *38*(1), 1–11. https://doi.org/10.1007/s00127-003-0597-4

de Sousa, P., Sellwood, W., Spray, A., Fernyhough, C., & Bentall, R. (2016). Inner Speech and Clarity of Self-Concept in Thought Disorder and Auditory-Verbal Hallucinations. *The Journal of Nervous and Mental Disease*, *0*(0), 1–9. https://doi.org/10.1097/NMD.0000000000000584

Dimaggio, G., & Lysaker, P. H. (2015). Metacognition and Mentalizing in the Psychotherapy of Patients With Psychosis and Personality Disorders. *Journal of Clinical Psychology*, *71*(2), 117–124. https://doi.org/10.1002/jclp.22147

Dube, S. R., Williamson, D. F., Thompson, T., Felitti, V. J., & Anda, R. F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse & Neglect*, *28*(7), 729–737. https://doi.org/10.1016/j.chiabu.2003.08.009

Duhig, M., Patterson, S., Connell, M., Foley, S., Capra, C., Dark, F., … Scott, J. (2015). The prevalence and correlates of childhood trauma in patients with early psychosis, *49*(7), 651–659. https://doi.org/10.1177/0004867415575379

Evans, G. J., Reid, G., Preston, P., Palmier-Claus, J., & Sellwood, W. (2015). Trauma and psychosis: The mediating role of self-concept clarity and dissociation. *Psychiatry Research*. https://doi.org/10.1016/j.psychres.2015.04.053

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., … Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245–258. https://doi.org/10.1016/S0749-3797(98)00017-8

Fernandes, V., & Osório, F. L. (2015). Are there associations between early emotional trauma and anxiety disorders? Evidence from a systematic literature review and meta-analysis. *European Psychiatry*, *30*(6), 756–764. https://doi.org/10.1016/j.eurpsy.2015.06.004

Friend, J. (2012). Mitigating Intergenerational Trauma Within the Parent-Child Attachment. *Australian & New Zealand Journal of Family Therapy*, *33*(2), 114–127. https://doi.org/ 10.1017/aft.2012.14

Gibb, B. E., Chelminski, I., & Zimmerman, M. (2007). Childhood emotional, physical, and sexual abuse, and diagnoses of depressive and anxiety disorders in adult psychiatric

outpatients. *Depression and Anxiety*, *24*(4), 256–263. https://doi.org/10.1002/da.20238

Gilbert, P. (2009). Compassion Focused Therapy: Distinctive Features. London: Routledge.

Hammersley, P., Dias, A., Todd, G., Bowen-Jones, K., Reilly, B., & Bentall, R. P. (2003). Childhood trauma and hallucinations in bipolar affective disorder: preliminary investigation. *The British Journal of Psychiatry*, *182*(6), 543. https://doi.org/10.1192/bjp.182.6.543

Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry*, *45*(2), 260–273. https://doi.org/10.1111/j.1469-7610.2004.00218.x

Huh, H. J., Kim, K. H., Lee, H.-K., & Chae, J.-H. (2017). The relationship between childhood trauma and the severity of adulthood depression and anxiety symptoms in a clinical sample: The mediating role of cognitive emotion regulation strategies. *Journal of Affective Disorders*, *213*, 44–50. https://doi.org/10.1016/j.jad.2017.02.009

Huh, H. J., Kim, S.-Y., Yu, J. J., & Chae, J.-H. (2014). Childhood trauma and adult interpersonal relationship problems in patients with depression and anxiety disorders. *Annals of General Psychiatry*, *13*, 26. https://doi.org/10.1186/s12991-014-0026-y

Jacobi, F., Wittchen, H.-U., Hölting, C., Höfler, M., Pfister, H., Müller, N., & Lieb, R. (2004). Prevalence, co-morbidity and correlates of mental disorders in the general population: results from the German Health Interview and Examination Survey (GHS). *Psychological Medicine*, *34*(4), 597–611. https://doi.org/10.1017/S0033291703001399

Kelleher, I., & DeVylder, J. . (2017). Hallucinations in borderline personality disorder and common mental disorders. *The British Journal of Psychiatry*, (210), 230–231. https://doi.org/10.1192/bjp.bp.116.185249

Keshet, H., & Gilboa-Schechtman, E. (2016). Symptoms and Beyond: Self-Concept Among Sexually Assaulted Women. *Psychological Trauma : Theory, Research, Practice and Policy*. http://dx.doi.org.ezproxy.lancs.ac.uk/10.1037/tra0000222

Kessler RC, McGonagle KA, Zhao S, & et al. (1994). Lifetime and 12-month prevalence of dsm-iii-r psychiatric disorders in the united states: Results from the national comorbidity survey. *Archives of General Psychiatry*, *51*(1), 8–19. https://doi.org/10.1001/archpsyc.1994.03950010008002

Konings, M., Bak, M., Hanssen, M., Van Os, J., & Krabbendam, L. (2006). Validity and reliability of the CAPE: a self-report instrument for the measurement of psychotic experiences in the general population. *Acta Psychiatrica Scandinavica*, *114*(1), 55–61. https://doi.org/10.1111/j.1600-0447.2005.00741.x

Kroenke, K., Spitzer, R., & Williams, J. (2001). The PHQ-9. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Kusec, A., Tallon, K., & Koerner, N. (2016). Intolerance of uncertainty, causal uncertainty, causal importance, self-concept clarity and their relations to generalized anxiety disorder. *Cognitive Behaviour Therapy*, *45*(4), 307–323. https://doi.org/10.1080/16506073.2016.1171391

Leadsom, A., Field, F., Burstow, P., & Lucas, C. (2016). The 1001 Critical Days: The importance of the conception to age two period. 1001 Critical Days. Retrieved from http://www.1001criticaldays.co.uk/sites/default/files/1001%20days_oct16_1st.pdf

Lear, M. K., & Pepper, C. M. (2015). Self-Concept Clarity and Emotion Dysregulation in Nonsuicidal Self-Injury. *Journal Of Personality Disorders*, 1–15. http://dx.doi.org/10.1521/pedi_2015_29_232

Luoma, J., Hayes, S., & Walser, R. (2008). Learning ACT: An Acceptance and Commitment Therapy Skills-Training Manual for Therapists. London: New Harbinger Publications.

MacLeod, J., & Nelson, G. (2000). Programs for the Promotion of Family Wellness and the Prevention of Child Maltreatment: A Meta-Analytic Review. *Child Abuse & Neglect: The International Journal*, *24*(9), 1127–49. https://doi.org/10.1016/S0145-2134(00)00178-2

Matheson, S. L., Shepherd, A. M., Pinchbeck, R. M., Laurens, K. R., & Carr, V. J. (2013). Childhood adversity in schizophrenia: a systematic meta-analysis, *43*(2), 225–238. https://doi.org/10.1017/S0033291712000785

Mossaheb, N., Becker, J., Schaefer, M. R., Klier, C. M., Schloegelhofer, M., Papageorgiou, K., & Amminger, G. P. (2012). The Community Assessment of Psychic Experience (CAPE) questionnaire as a screening-instrument in the detection of individuals at ultra-high risk for psychosis. *Schizophrenia Research*, *141*(2–3), 210–214. https://doi.org/10.1016/j.schres.2012.08.008

Nelson, B., Thompson, A., & Yung, A. R. (2012). Basic Self-Disturbance Predicts Psychosis Onset in the Ultra High Risk for Psychosis "Prodromal" Population. *Schizophrenia Bulletin*, *38*(6), 1277–1287. https://doi.org/10.1093/schbul/sbs007

Noyman-Veksler, G., Weinberg, D., Fennig, S., Davidson, L., & Shahar, G. (2013). Perceived stigma exposure in schizophrenia: The key role of self-concept clarity. *Self and Identity*, *12*(6), 663–674. https://doi.org/10.1080/15298868.2012.732265

Olds, D. ., Eckenrode, J., Henderson, C. ., Kitzman, H. ., & et al. (1997). Long-term effects of home visitation on maternal life course and child abuse and neglect: Fifteen-year follow-up of a randomized trial. *JAMA*, *278*(8), 637–643. https://doi.org/10.1001/jama.1997.03550080047038

Orr, E. M. J., & Moscovitch, D. A. (2015). Blending in at the cost of losing oneself: Dishonest self-disclosure erodes self-concept clarity in social anxiety. *Journal of Experimental Psychopathology*, *6*(3), 278–296. https://doi.org/10.5127/jep.044914

Peleg-Sagy, T., & Shahar, G. (2015). Female medical students' (silencing the) self: Effects on depression and dyadic/sexual dissatisfaction. *Self and Identity*, *14*(4), 420–440. https://doi.org/10.1080/15298868.2015.1008031

Qualtrics. (2005). *Qualtrics and all other Qualtrics product or service names are registered trademarks or trademarks of Qualtrics*. Provo, UT, USA. Retrieved from http://www.qualtrics.com

R Core Team. (2014). *R: A language and environment for statistical computing.* Vienna, Austria. Retrieved from http://www.R-project.org/

Read, J., Agar, K., Argyle, N., & Aderhold, V. (2003). Sexual and physical abuse during childhood and adulthood as predictors of hallucinations, delusions and thought disorder. *Psychology and Psychotherapy: Theory, Research and Practice*, *76*(1), 1–22. https://doi.org/10.1348/14760830260569210

Read, J., Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis and schizophrenia: a literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica*, *112*(5), 330–350. https://doi.org/ 10.1111/j.1600-0447.2005.00634.x

Reyes, M. E. S., Lanic, P. J. P., Lavadia, E. N. T., Tactay, E. F. J. L., Tiongson, E. R., Tuazon, P. J. G., & McCutcheon, L. E. (2015). Self-stigma, self-concept clarity, and mental health status of Filipino LGBT individuals. *North American Journal of Psychology*, *17*(2), 343–350. Retrieved from https://search-proquest-com.ezproxy.lancs.ac.uk/docview/1686090115?accountid=11979

Richman, S. B., Pond, R. S. J., DeWall, C. N., Kumashiro, M., Slotter, E. B., & Luchies, L. B. (2016). An unclear self leads to poor mental health: Self-concept confusion mediates the association of loneliness with depression. *Journal of Social and Clinical Psychology*, *35*(7), 525–550. https://doi.org/10.1521/jscp.2016.35.7.525

Roepke, S., Schröder-Abé, M., Schütz, A., Jacob, G., Dams, A., Vater, A., … Lammers, C.-H. (2011). Dialectic behavioural therapy has an impact on self-concept clarity and facets of self-esteem in women with borderline personality disorder. *Clinical Psychology & Psychotherapy*, *18*(2), 148. https://doi.org/10.1002/cpp.684

Rossiter, A., Byrne, F., Wota, A. P., Nisar, Z., Ofuafor, T., Murray, I., … Hallahan, B. (2015). Childhood trauma levels in individuals attending adult mental health services: An evaluation of clinical records and structured measurement of childhood trauma. *Child Abuse & Neglect*, *44*, 36–45. https://doi.org/10.1016/j.chiabu.2015.01.001

Sass, L. A. (2014). Self-disturbance and schizophrenia: Structure, specificity, pathogenesis (Current issues, New directions). *Schizophrenia Research*, *152*(1), 5–11. https://doi.org/10.1016/j.schres.2013.05.017

Schiller, M., Hammen, C. C., & Shahar, G. (2016). Links among the self, stress, and psychological distress during emerging adulthood: Comparing three theoretical models. *Self and Identity*, *15*(3), 302–326. https://doi.org/10.1080/15298868.2015.1131736

Sin, J., & Spain, D. (2016). Psychological interventions for trauma in individuals who have psychosis: A systematic review and meta-analysis. *Psychosis*, 1–15. https://doi.org/10.1080/17522439.2016.1167946

Sitko, K., Bentall, R. P., Shevlin, M., O'Sullivan, N., & Sellwood, W. (2013). Associations between specific psychotic symptoms and specific childhood adversities are mediated by attachment styles: An analysis of the National Comorbidity Survey. *Psychiatry Research*. https://doi.org/10.1016/j.psychres.2014.03.019

Spinhoven, P., Elzinga, B. M., Hovens, J. G. F. M., Roelofs, K., Zitman, F. G., van Oppen, P., & Penninx, B. W. J. H. (2010). The specificity of childhood adversities and

negative life events across the life span to anxiety and depressive disorders. *Journal of Affective Disorders, 126*(1), 103–112. https://doi.org/10.1016/j.jad.2010.02.132

Spitzer, R. ., Kroenke, K., Williams, J., & Lōwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of International Medicine*, *166*, 1093–1097. https://doi.org/ 10.1001/archinte.166.10.1092

SPSS Inc. (2009). *PASW Statistics for Windows, Version 18.0*. Chicago: SPSS Inc. Retrieved from https://www.ibm.com/analytics/us/en/technology/spss/

Stopa, L., Brown, M. A., Luke, M. A., & Hirsch, C. R. (2010). Constructing a self: The role of self-structure and self-certainty in social anxiety. *Behaviour Research and Therapy*, *48*(10), 955–965. https://doi.org/10.1016/j.brat.2010.05.028

Teasdale, J., Williams, M., & Segal, Z. (2014). The Mindful Way Workbook: An 8-Week Program to Free Yourself from Depression and Emotional Distress**.** London: Guilford Publications

Tortelli, A., Errazuriz, A., Croudace, T., Morgan, C., Murray, R., Jones, P., … Kirkbride, J. (2015). Schizophrenia and other psychotic disorders in Caribbean-born migrants and their descendants in England: systematic review and meta-analysis of incidence rates, 1950–2013. *The International Journal for Research in Social and Genetic Epidemiology and Mental Health Services*, *50*(7), 1039–1055. https://doi.org/10.1007/s00127-015-1021-6

van Nierop, M., Myin-Germeys, I., & van Winkel, R. (2016). Clinic risk associated with comorbidity of (subclinical) psychosis, anxiety and depressive symptoms: A case for stratified medicine in psychiatry. *European Psychiatry*, *33*, S49–S49. https://doi.org/10.1016/j.eurpsy.2016.01.913

Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., … Bentall, R. P. (2012). Childhood Adversities Increase the Risk of Psychosis: A Meta-analysis

of Patient-Control, Prospective- and Cross-sectional Cohort Studies. *Schizophrenia Bulletin*, *38*(4), 661–671. https://doi.org/10.1093/schbul/sbs050

Wade, D., Varker, T., Kartal, D., Hetrick, S., O'donnell, M., & Forbes, D. (2016). Gender Difference in Outcomes Following Trauma-Focused Interventions for Posttraumatic Stress Disorder: Systematic Review and Meta-Analysis. *Psychological Trauma: Theory, Research, Practice, and Policy*. https://doi.org/10.1037/tra0000110

Wigman, J. T. W., van Nierop, M., Vollebergh, W. A. M., Lieb, R., Beesdo-Baum, K., Wittchen, H.-U., & van Os, J. (2012). Evidence That Psychotic Symptoms Are Prevalent in Disorders of Anxiety and Depression, Impacting on Illness Onset, Risk, and Severity—Implications for Diagnosis and Ultra–High Risk Research. *Schizophrenia Bulletin*, *38*(2), 247–257. https://doi.org/10.1093/schbul/sbr196

Wiles, N. J., Zammit, S., Bebbington, P., Singleton, N., Meltzer, H., & Lewis, G. (2006). Self-reported psychotic symptoms in the general population. *The British Journal of Psychiatry*, *188*(6), 519. https://doi.org/10.1192/bjp.bp.105.012179

Wilson, J. K., & Rapee, R. M. (2006). Self-concept certainty in social phobia. *Behaviour Research and Therapy*, *44*(1), 113–136. https://doi.org/10.1016/j.brat.2005.01.006

Tables

Table 1

Summary of demographic information and individual psychometric measures for the total sample and for each individual group: psychosis, anxiety/depression and control

Variable		Total Sample	Psychosis	Anxiety and Depression	Control	F
Number		145	58	34	53	
Sex (%)	Female	39 (26.9)	9 (15.5)	11 (32.4)	19 (35.8)	3.33*
	Male	106 (73.1)	49 (84.5)	23 (67.6)	34 (64.2)	
Ethnicity (%)	White - Caucasian	140 (96.6)	54 (93.1)	34 (100)	52 (98.1)	.98
	Asian	2 (1.4)	2 (3.4)	-	-	
	Other	2 (2.1)	2 (3.4)	-	1 (1.9)	
Age (years)	Mean $\bar{x}$	35.61	34.97	34.44	37.08	.60
	S D	12.40	12.14	13.09	12.33	
Sexual Orientation (%)	Heterosexual	112 (77.2)	34 (58.6)	30 (88.2)	48 (90.6)	
	Homosexual	15 (18)	11 (19)	2 (5.9)	2 (3.8)	
	Bisexual	18 (12.4)	13 (22.4)	2 (5.9)	3 (5.7)	
Marital Status (%)	Married or living with someone as if married	70 (48.43)	21 (36.2)	18 (52.9)	31 (58.5)	
	Widowed	4 (2.8)	3 (5.2)	1 (2.9)	-	
	Divorced or annulled	4 (2.8)	3 (5.2)	-	1 (1.9)	
	Separated	64 (44.1)	2 (3.4)	-	1 (1.9)	
	Never Married		29 (50)	15 (44.1)	20 (37.7)	
Education (%)	Didn't finish school	6 (4.1)	2 (3.4)	2 (5.9)	2 (3.8)	1.37
	GCSEs/O-Levels	22 (15.2)	9 (15.5)	4 (11.8)	9 (17)	
	A-Levels	16 (11)	8 (13.8)	4 (11.8)	4 (7.5)	
	Undergraduate Degree	57 (39.3)	26 (44.8	14 (41.2)	17 (32.1)	
	Postgraduate Degree	29 (20)	12 (20.7)	8 (23.5)	9 (17)	
	Doctoral Degree	15 (10.3)	1 (1.7)	2 (5.9)	12 (22.6)	
Employment Status (%)	Unemployed	41 (28.3)	22 (37.9)	9 (26.5)	10 (18.9)	1.75
	Working	74 (51)	21 (36.2)	12 (35.3)	41 (77.4)	
	Studying	30 (20.7)	15 (25.9)	13 (38.2)	2 (3.8)	
SCCS Total	Mean $\bar{x}$	35.32	34.95	33.00	37.23	
	S D	11.45	12.06	12.05	10.2	
PHQ-9 Total	Mean $\bar{x}$	7.75	9.57	13.68	1.96	
	S D	7.07	6.84	5.77	2.26	
GAD-7 Total	Mean $\bar{x}$	9.21	10.97	15.32	3.38	
	S D	6.58	6.21	3.91	2.36	
ACE Total	Mean $\bar{x}$	3.47	4.64	3.41	2.25	
	S D	2.35	2.35	2.06	1.86	

**SCCS – Self-Concept Clarity Scale, PHQ – Patient health Questionnaire 9 , GAD – Generalised Anxiety Disorder 7, ACE – Adverse Childhood Experiences*

Table 2

Summary of self-reported mental health history for the total sample and for each individual group: psychosis, anxiety/depression and control

Variable		Total Sample	Psychosis	Anxiety and Depression	Control
Previous support from a health professional for MHD (%)	Yes	114 (78.6)	51 (87.9)	31 (91.2)	32 (60.4)
	No	31 (21.4)	7 (12.1)	3 (8.8)	21 (39.6)
Hospital admission for MHD	Yes	59 (40.7)	38 (65.5)	11 (32.4)	10 (18.9)
	No	86 (59.3)	20 (34.5)	23 (67.6)	43 (81.1)
CMHT or EIS service for MHD	Yes	32 (22.1)	22 (37.9)	7 (20.6)	3 (5.7)
	No	113 (77.9)	36 (62.1)	27 (79.4)	50 (94.3)
Current support from MHS	Yes	59 (40.7)	33 (56.9)	18 (52.9)	8 (15.1)
	No	86 (59.3)	25 (43.1)	16 (47.1)	45 (84.9)
Psychiatric Diagnosis	No Diagnosis	50 (34.5)	9 (15.5)	8 (23.5)	33 (62.3)
	Anxiety	9 (6.2)	1 (1.7)	8 (23.5)	-
	Bipolar Disorder	20 (13.8)	10 (17.2)	4 (11.8)	6 (11.3)
	Depression	18 (12.4)	5 (8.6)	6 (17.6)	7 (13.2)
	Psychosis	11 (7.6)	11 (19)	-	-
	Schizophrenia	4 (2.8)	4 (6.9)	-	-
	Schizoaffective Disorder	4 (2.8)	4 (6.9)	-	-
	Unsure	1 (0.7)		1 (2.9)	-
	Other	28 (19.3)	14 (24.1)	7 (20.6)	7 (13.2)
Currently taking Medication for MHD	Yes	73 (50.3)	33 (56.9)	26 (76.5)	14 (26.4)
	No	72 (49.7	25 (43.1)	8 (23.5)	39 (73.6)

**MHD – Mental Health Difficulties, CMHT – Community Mental Health Team, EIS – Early Intervention Service, MHS – Mental Health Services*

Table 3.

Summary of analysis of variance (ANOVA) and independent t-tests for between group comparisons

	Psychosis (n = 58)		**Anxiety/Depression (n = 34)**		**Control (n = 53)**		**F**	**Psychosis vs. Anx/Dep**	**Psychosis vs. Control**	**Anx/Dep vs. Control**
Variable										
	M	*SD*	*M*	*SD*	*M*	*SD*				
SCCS	34.95	12.06	33.00	12.05	37.23	10.2	1.47	0.75	-1.08 [b]	-1.76
ACE	4.64	2.35	3.41	2.06	2.25	1.86	18.03***	2.52*	5.96***	2.78**
GAD[a]	10.97	6.21	15.32	3.91	3.38	2.36	146.57***	-4.13[b] ***	-8.65[b] ***	-16.06[b] ***
PHQ[a]	9.57	6.84	13.68	5.77	1.96	2.26	86.97***	-3.07**	-8.00[b] ***	-11.30[b] ***

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

a. Levene's test for equality of variance was significant for this scale (p =.000) thus the Welch value is reported instead of the F value.

b. Levene's test for equality of variance revealed that the data not meet the assumption for equal variance between both samples (p<.05), thus adjusted values are reported.

Table 4

Summary of Pearson's Correlations for each of the included psychometric measures

		Total Sample				Psychosis Group				Anxiety/Depression Group				Control Group			
		1	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
SCCS	Pearson Correlation	1	-.284***	-.171*	-.020	1	-.420***	-.167	-.064	1	-.305	-.098	.204	1	.376**	.098	.003
	Sig. (2-tailed)		.001	.040	.808		.001	.211	.635		.080	.579	.248		.006	.485	.981
	N	145	145	145	145	145	58	58	58	34	34	34	34	53	53	53	53
PHQ	Pearson Correlation		1	.749***	.287***		1	.583***	.220		1	.470**	-.083		1	.180	.117
	Sig. (2-tailed)			.000	.000			.000	.097			.005	.642			.198	.406
	N		145	145	145		145	58	58		34	34	34		53	53	53
GAD	Pearson Correlation			1	.355***			1	.261*			1	.171			1	.160
	Sig. (2-tailed)				.000				.048				.333				.251
	N			145	145			145	58			34	34			53	53
ACE	Pearson Correlation				1				1				1				1
	Sig. (2-tailed)																
	N				145				145				34				53

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

Table 5.

Summary of linear regression models and associated coefficients

Variable	R^2	F	B	SE	β	t
GAD	.126	20.57***				
ACE			.99	.22	.36	4.54***
PHQ	.083	12.88***				
ACE			.86	.24	.29	3.59***
GAD	.029	4.28*				
SCCS			-.10	.05	-.17	-2.07*
PHQ	.081	12.59***				
SCCS			-.18	.05	-.28	-3.55***
SCCS	.000	.06				
ACE			-.10	.407	-.02	-.24

***p≤.001, *p<.05

Table 6.

Summary of binary logistic regression models and associated coefficients

			95% CI for Odds Ratio		
	B	**SE**	**Lower**	**Odds**	**Upper**
PSQ ACE[a]	0.40***	.09	1.25	1.49	1.77
PSQ SCCS[b]	.33	.55	.97	.99	1.03

Note. a = R^2 = .16 (Cox & Snell) .22 (Nagelkerke). Model x^2 (1) = 25.1, p < .001.
Note. b = R^2 = .00 (Cox & Snell) .00 (Nagelkerke). Model x^2 (1) = 5.13, p > .05
*** p ≤.001

Appendices

Appendix 2-A

Assumption of normal distribution

The data were analysed to assess the assumptions for parametric testing, the results of which were conflicting. The distribution of scores were approximately normal based on the skewness and kurtosis values for each of the variables, with the exception of the control group where the PHQ and ACE variables displayed marginal levels of skew. Consultation was sought from an independent statistician who reviewed the analyses and graphical presentations of the data and reported that the data would be suitable for parametric testing.

The psychosis, anxiety/depression and control groups were established based on the overall scores of the predictor variables and thus, assumption of normality were checked within each group separately. This was a two-stage process, first to check that the distribution of scores were approximately normal the skewness and kurtosis values for each of the variables, within each of the groups, were converted to z-scores. If the resulting z-score was >1.96, this indicated statistically significant skewness or kurtosis ($p < .05$). This process indicated that normality could be assumed for majority of the variables, with the exception of the control group where the PHQ and ACE variables displayed statistically significant skew (*see appendices Table 2-A*).

Normal distribution was further explored with the Kolmogorov-Smirnov test, which revealed a contradictory outcome to the one above. As the distribution of the majority of variables were reported to be statistically significantly different from a normal distribution ($p<.05$), with the exception of the PHQ and GAD variables in the psychosis group, the GAD variable in and anxiety/depression group and the SCCS variable in the control group ($p>.05$). This may be a direct consequence of the relatively small sample sizes within each of the groups.

Logarithmic and square root transformations were attempted; however, heterogeneous skewness and kurtosis across variables meant no single transformation procedure was corrective for the entire data set. Thus, guidance was sought from a an independent statistician who reviewed the data and advised that based on the histograms and scatter plots, for each of the variables, within each of the groups, it could be assumed that the data were sufficiently normally distributed to meet the assumptions for parametric testing.

Table 2-A.

Assessment of distribution

		Psychosis		**Anxiety/Depression**		**Control**	
		Skewness	*Kurtosis*	*Skewness*	*Kurtosis*	*Skewness*	*Kurtosis*
		-.008	-1.029	-.027	1.410	.606	.383
SCCS	Std.error	.314	.618	.403	.788	.327	.644
	z-scores	-.025	-1.67	-.67	-1.79	1.85	0.59
		.521	-.300	.395	.547	1.179	.756
PHQ	Std.error	.314	.618	.403	.788	.327	.644
	z-scores	1.66	.49	.98	.69	3.60*	1.17
		-.014	-1.12	-.609	-.093	.261	-.887
GAD	Std.error	.314	.618	.403	.788	.327	.644
	z-scores	0.45	1.81	-1.51	-0.12	0.80	1.38
		-.058	-.520	.465	-.229	.648	-.525
ACE	Std.error	.314	.618	.403	.788	.327	.644
	z-scores	-.18	-.84	1.15	0.29	1.98*	-0.812

* p <.05

Appendix 2-B

Four-stage approach to mediation proposed by Baron and Kenny (1986)

X = Adverse Childhood Experiences

Y(1) = Psychosis

Y(2) = Anxiety/Depression

M = Self-Concept Clarity

Stage 1 - Two simple regression analyses will be conducted to test whether X predicts Y(1) and Y(2).

Stage 2 - One simple regression analysis will be conducted to test wither X predicts M.

Stage 3 - Two simple regression analyses will be conducted to test whether M predicts Y(1) and Y(2).

If all of the relationships in stages 1-3 are significant proceed to stage 4, if one or more of the relationships in stages 1-3 are non-significant conclude that mediation is not likely.

Stage 4 - A multiple regression analysis will be conducted with X and M predicting Y(1) and Y(2).

Data analysis approach taken in the current research

Stage 1. Linear regressions were conducted to test whether ACE (X) predicted anxiety (Y_1) and depression (Y_2). A binary logistic regression was conducted to test whether adverse childhood experiences (X), predicted psychosis (Y_3) using the response to the auditory and visual hallucinations key question ‘PSQ 6: Over the past year, have there been times when you heard or saw things that other people couldn’t?’

Stage 2. A linear regression was then conducted to test whether ACE (X) predicted levels of SCC (M). *Stage 3*. Finally, two linear regression analyses were conducted to test whether SCC (M) predicted anxiety (Y_1) and depression (Y_2) and a binary logistic regression was conducted to test whether SCC predicted psychosis (Y_3).

According to Baron and Kenny (1986), if one or more of the regression analyses are non-significant then the data does not meet the assumptions for a mediation analysis as a mediation effect is not likely. The data did not meet the assumptions for a meditation analysis based on this model and thus, a mediation analysis (*stage 4*) was not undertaken on the data.

Appendix 2-C

Behaviour Research and Therapy Notes for Authors

Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address

All necessary files have been uploaded:
Manuscript:
• Include keywords
• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print
Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations
• Manuscript has been 'spell checked' and 'grammar checked'
• All references mentioned in the Reference List are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
• Relevant declarations of interest have been made
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

Preparation

Article structure

Abstract
A concise and factual abstract is required with a maximum length of 200 words. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Graphical abstract
Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.
Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images and in accordance with all technical requirements: Illustration Service.

Highlights
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

Keywords
Immediately after the abstract, provide a maximum of 6 keywords, to be chosen from the APA list of index descriptors. These keywords will be used for indexing purposes.

Abbreviations
Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements
Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources
List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Shorter communications
This option is designed to allow publication of research reports that are not suitable for publication as regular articles. Shorter Communications are appropriate for articles with a specialized focus or of particular didactic value. Manuscripts should be between 3000-5000 words, and must not exceed the upper word limit. This limit includes the abstract, text, and references, but not the title page, tables and figures.

Artwork

Electronic artwork
General points
• Make sure you use uniform lettering and sizing of your original artwork.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the published version.
• Submit each illustration as a separate file.
A detailed guide on electronic artwork is available.
You are urged to visit this site; some excerpts from the detailed information are given here.
Formats
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
EPS (or PDF): Vector drawings, embed all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.
Please do not:
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.

Tables

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table

body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References

Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley and Zotero, as well as EndNote. Using the word processor plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/behaviour-research-and-therapy
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference style
Text: Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 978-1-4338-0561-5, copies of which may be ordered online or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK.

List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.
Examples:
Reference to a journal publication:
Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications, 163,* 51–59.
Reference to a book:
Strunk, W., Jr., & White, E. B. (2000). *The elements of style.* (4th ed.). New York: Longman, (Chapter 4).
Reference to a chapter in an edited book:
Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.
Reference to a website:
Cancer Research UK. Cancer statistics reports for the UK. (2003). http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ Accessed 13.03.03.
Reference to a dataset:
[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. https://doi.org/10.17632/xwj98nb39r.1.

Supplementary material

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Chapter Three: Critical Appraisal

The Conceptualisation of Self-Concept Clarity and a Critique of the Empirical Paper with a Specific Focus on Future Research Directions

Formatted in accordance with:

American Psychological Association Style

Total word count: 3991

Laura J. Binsale

Doctorate in Clinical Psychology

Faculty of Health and Medicine

Lancaster University

Lancaster

LA1 4YT

l.binsale@lancaster.ac.uk

The approach taken to the current critical appraisal was an attempt to expand on the conceptualisation of *self-Concept Clarity* (SCC) and its association with psychopathology. Both Chapters 1 and 2 began to explore how SCC may fit with trans-diagnostic issues but due to word limit constraints such discussions were limited. This is my attempt to engage in a more in-depth discussion of these associations and consider the similarities and differences between SCC and other theoretical perspectives which appear to capture comparable underlying processes such as, social-comparison theory (Festinger, 1954), self-discrepancy theory (Higgins, 1987) and self-concept differentiation (Donahue, Robins, Roberts, & John, 1993).

Specific attention will be paid to how the literature review and empirical paper can contribute to clinical practice to strengthen theory to practice links. Furthermore, key strengths and limitations of the research process will be discussed and the key learning points clearly stipulated. These discussions will inform recommendations for future research directions.

The Conceptualisation of Self-Concept Clarity (SCC)

As the thesis process progressed it became apparent that in an attempt to fully understand self-concept clarity (SCC) it was imperative that I also understood related theories and concepts. It seemed that the more I read the more complex the area appeared to be and I found it increasingly difficult to tease apart and clarify the similarities and differences between related constructs. The structure of the literature review and empirical paper limited an in depth discussion of how SCC fitted within the wider landscape, therefore, in an attempt to bring these two components together this Chapter will engage in this discussion.

Self-concept clarity (SCC) is defined as the “extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141).

According to this definition an individual reporting low SCC would experience an unclear and unstable self-concept, one that would be inconsistent and lack clarity and definition. As shown in Chapter 1, impaired levels of SCC have been consistently associated with a higher reported presence of psychopathology.

One hypothesis as to why this could be is that individuals with uncertain self-concepts may be more susceptible to, and influenced by external stimuli (Campbell, 1990) and that an uncertain belief about oneself may result in an over-reliance on the opinions and evaluations of others (Wilson & Rapee, 2006). This is congruent with previous research which suggests that in the context of social anxiety, if SCC is impaired then it might increase the significance of perceived appraisals from others (Stopa, Brown, Luke, & Hirsch, 2010). Therefore, if you think that another person thinks less of you in a social situation, then unless you are secure in the knowledge regarding your own personal attributes this is likely to have a significant impact.

Similarities can be drawn between this conceptualisation and *social comparison theory*, which proposes that when individuals feel uncertain about their personal attributes, beliefs and opinions, they engage in a process of comparing themselves against others (Festinger, 1954). SCC and social comparison are inversely associated (Butzer & Kuiper, 2006). Butzer and Kuiper (2006) also found that SCC fully mediated the relationship between social comparison and anxiety and depression. This association between SCC and social comparison further advances our understanding of how SCC may contribute to increased levels of psychopathology by indirectly perpetuating an individual's over-reliance on social-comparisons and perceived evaluations from others. If this is the case then clinical interventions targeted at reducing self-focused attention and increasing non-judgemental, present moment awareness may be beneficial.

One of the key characteristics of SCC is internal consistency and a lack of internal consistency associated with lower levels of SCC. *Self-discrepancy theory* (Higgins, 1987) proposes that there are two key dimensions of the self: domains and standpoints. According to Higgins (1987) there are three different domains of self, the actual self (attributes the individual believes they currently possess), the ideal self (desired personal attributions) and the should self (attributes the individual believes they should possess). The standpoints of the self refer to different positions from which the person feels they could be evaluated, this could occur through self-evaluation or perceived evaluations from others. Self-discrepancy theory suggests that a discrepancy occurs when there is a significant difference between the actual self and either, the ideal or should self, from one of the standpoint positions. Therefore, it appears that there could be similarities between self-discrepancy theory and the internal consistency facet of SCC, which is assessed through key items on the Self-Concept Clarity Scale (SCCS; Campbell et al., 1996) such as '*my beliefs about myself often conflict with one another*'. A significant self-discrepancy could also increase self-uncertainty and thus, incidentally reduce SCC.

Given the potential overlap between SCC and self-discrepancy theory, it is important then to understand what the relationship between self-discrepancy and psychopathology may be. According to Higgins (1987), discrepancies between the actual and ideal self are associated with increased levels of shame and depressive symptoms, whereas discrepancies between the actual and ought self are associated with feelings of guilt and increased levels of anxiety. More recent research explored the relationship between self-discrepancy and specific affective states (Barnett, Moore, & Harp, 2017). A significant discrepancy between the actual and ideal self was associated with heightened levels of sadness and diminished levels of self-assurance and joviality. Although the study employed a cross-sectional design and analysis and, therefore, the direction and cause of these associations could not be ascertained, it

appears that increased levels of self-discrepancy between the actual and ideal self may increase levels of uncertainty and sadness. This suggests that internal-inconsistency and uncertainty may be closely inter-linked.

One final construct to consider is that of *self-concept differentiation* (SCD; Donahue et al., 1993). A clear, stable and confidently defined self-concept could be disrupted if an individual reported high levels of self-concept differentiation. This is defined as the perception that an individual holds dissimilar, and at times, conflicting personal attributes across different social roles. Increased levels of SCD have been associated with interpersonal difficulties and elevated levels of emotional distress (Donahue et al., 1993). Unsurprisingly, there is a negative association between SCC and SCD (Bigler, Neimeyer, & Brown, 2001). However, Bigler et al. (2001), argue that although there are similarities, the related concepts also distinctly differ from one another. This proposes that an awareness of multiply held personal attributes and how these relate to different social roles could be beneficial and lead to the achievement of a clear and confidently defined self-concept.

Limitations and Future Research Directions

This was a first attempt to explicitly explore the relationship between SCC and adverse childhood experiences and how these two factors may interact and contribute to the underlying mechanisms associated with the development of psychosis, anxiety and depression. Limitations were discussed in relation to the design of the current research and these were outlined in Chapter 2. It would be beneficial if future research in this area considered the limitations and accompanying recommendations outlined below, in an attempt to strengthen the design of future studies.

Recruitment strategy and group allocation. It appears that a lack of variety within levels of SCC across the three groups may have significantly impacted on the overall results of the study. If this had been the first study that explored the relationship between SCC and

psychopathology, then it could be inferred that SCC may be an unrelated construct. However, as Chapter 1 illustrates this is not the case. There have been five previous case control studies which explore this association (Berna et al., 2016; Cicero, Martin, Becker, & Kerns, 2016; de Sousa, Sellwood, Spray, Fernyhough, & Bentall, 2016; Evans, Reid, Preston, Palmier-Claus, & Sellwood, 2015; Roepke et al., 2011), all of which report significant differences in levels of SCC between the clinical and control groups.

In the current research one possible explanation for a lack of variance in levels of SCC is the recruitment strategy and group allocation process. Although participants allocated to the control group did not meet the criteria for the psychosis or the anxiety/depression groups, the majority of the group (n = 32, 60.4%) did report that they had previously accessed support from a health professional for mental health difficulties and a proportion of the group had been admitted to hospital for mental health difficulties (n = 10, 18.9%) and received a psychiatric diagnosis (n = 20, 37.7%). Thus, the question arises as to whether they should be considered to be a genuine control group.

Future research would benefit from recruiting a core control group of participants who report no history of mental health difficulties. Amending the recruitment strategy and recruiting participants to the control group solely from non-healthcare settings may best achieve this. A rigorous screening process for eligibility to the group would be recommended.

Participants were recruited to the research through online mental health charities, such as, the Hearing Voices Network (HVN) and through clinical settings, such as Early Intervention Services. Thus, recruiting participants who report psychotic experiences who both access and do not access services. This strategy was distinctly different to that of previous case-control studies in this area, who recruited solely from clinical services, such as, Early Intervention Services (Evans et al., 2015). The benefit of recruiting solely from

specialist services is that inclusion to such services is ordinarily achieved succeeding a detailed assessment of the presence of psychosis. Such an approach would ensure a degree of severity and distinguishability between the different participant groups and thus, increase homogeneity within groups.

This is especially pertinent given that it could be argued that there is a distinct difference between individuals who access services for support regarding psychotic experiences compared to those who do not. Comparing the experience of auditory hallucinations in both patients and non-patients, non-patients report feeling less distressed by hallucinations as they perceive them to be predominantly positive and also report feeling in control of their experience, as opposed to the hallucinations controlling them (Honig et al., 1998). The locus of control of the voices is an interesting finding and it would be interesting to explore whether an increased locus of control is associated with increased SCC. As the current research included participants in the psychosis group who could be categorised as either patients (service users) or non-patients (participants not accessing services), there is the possibility that differing perceptions of their psychotic experiences influenced their reported levels of SCC. This highlights the need for clearer group membership as outlined above.

Psychometric measures.

Psychosis. The psychosis screening questionnaire (PSQ; Bebbington & Nayani, 1995) was used to screen participants for psychosis using one key item on the questionnaire which asked specifically about auditory and visual hallucinations. A key limitation associated with this approach is that individuals who answered positively to other key questions on the questionnaire were excluded from the psychosis group; thus, the questionnaire was essentially used to screen out rather than screen in. This approach may have contributed to the limited variance in levels of SCC across the three groups. Furthermore, the prevalence of hallucinations across mental disorders more generally has recently been reported (Kelleher &

DeVylder, 2017) and thus, a positive answer to the hallucinations key question may not be indicative of the presence of psychosis as initially proposed (Bebbington & Nayani, 1995). Future research that addresses this limitation by improving the screening process or recruiting solely from specialist clinical services would significantly strengthen the design of the study.

Trans-diagnostic factors: trauma. The findings of the literature review suggest that SCC may be a trans-diagnostic factor as all of the included studies, regardless of the measure of psychopathology, reported a significant association between lower levels of SCC and higher reported symptoms of psychopathology. In an attempt to understand this association further, I considered what the role of other trans-diagnostic factors may be, drawing on previous research findings and my clinical experience in the process. My aim was to try to conceptualise how SCC may be associated to psychopathology, for example, is it an indirect consequence of other frequently cited trans-diagnostic issues such as, trauma or attachment?

To explore these associations in future research it is important to consider the use of appropriate psychometric measures. The Adverse Childhood Experiences (ACE, Felitti et al., 1998), measure was used in the current research to assess adverse and traumatic experiences in childhood. However, one particular drawback associated with this measure is that it does not differentiate between different forms of adversity; for example, it would have been useful to categorise the questions into physical abuse, emotional abuse, sexual abuse, neglect, social deprivation, and so on. This lack of categorisation meant that the same score was allocated to a participant who reported experiences of sexual abuse and to a participant who experienced parental separation. The ACE, therefore, assumes that a child would automatically find the experience of parental separation difficult, however, it could be the case that the family welcomed parental separation, therefore, it may be that in some instances parental separation alleviates psychological distress. The measure would also benefit from including an additional question within each of the items, one that asks participants to rate the level of

distress associated with each of the reported adverse experiences. The score allocated to this item should then inform the overall numerical value awarded to the item in the question.

To strengthen future research it would be beneficial to consider a different assessment tool to assess traumatic experiences in childhood. For example, the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), which reports test-retest reliability coefficients of 0.79 to 0.86 and internal consistency coefficients of between 0.66 and 0.92 (Bernstein & Fink, 1998). The CTQ assesses previous sexual, physical and emotional abuse and physical and emotional neglect, it explicitly asks about the frequency of such experiences using a five-point Likert scale. The CTQ was utilised in previous research that explored an association between SCC and psychosis, where SCC was reported to mediate the relationship between all types of abuse as measured by the CTQ and psychosis (Evans et al., 2015)

Trans-diagnostic factors: attachment. As discussed in Chapter 1, other trans-diagnostic factors such as attachment styles may help to conceptualise the relationship between SCC and psychopathology. Insecure attachment classifications have consistently been reported to be associated with psychotic phenomenology (Korver-Nieberg, Berry, Meijer, de Haan, & Ponizovsky, 2015; Korver-Nieberg, Berry, Meijer, & Haan, 2014) and other facets of psychopathology, such as, eating disorders (Tasca & Balfour, 2014) and social anxiety (Manning, Dickson, Palmier-Claus, Cunliffe, & Taylor, 2017). Previous research has focused on the potential association between attachment and self-concept; a series of six studies reported consistent findings supporting an association between attachment styles and the content and structure of self-representations (Mikulincer, 1995). Specifically, Mikulincer (1995) reported that individuals with a secure attachment style exhibited a positive, coherent and organised self-structure and reported relatively few incidences of self-discrepancies. This was in contrast to insecurely attached individuals where self-structures were perceived to lack integration and coherency.

A fundamental aspect associated with attachment theory is *mentalisation*; defined as the ability to think about mental states in oneself and in others, where mental states may represent beliefs, emotions and intentions (Fonagy, 2000). The development of mentalisation skills are understood to emerge in early attachment relationships, primarily in the context of securely attached environments (Fonagy, Target, Gergely, Allen, & Bateman, 2003) and the process of mentalisation is thought to be key in the organisation of the self (Fonagy & Target, 1997). An impaired ability to mentalise has been reported in individuals with insecure dismissive attachment styles (Mabeth, Gumley, Schwannauer, & Fisher, 2011). Furthermore, the potential role that mentalisation skills may play in the relationship between attachment and psychopathology, such as, psychosis has been recognised; with recommendations that future research should consider how these three factors relate to one another (Korver-Nieberg et al., 2014). Impaired mentalisation skills and thus, a lack of clarity and reflexivity of one's beliefs, emotions and intentions could be linked to reduced SCC, however, further research is required to explore this potential association.

Thus, it would be interesting if future research aimed to advance the current evidence base by directly exploring this potential link, this could be achieved by incorporating a measure of adult attachment. A self-report measure of adult attachment, such as, the Relationships Questionnaire (RQ; Bartholomew & Horowitz, 1991), would be an appropriate measure to consider. The RQ is a self-report measure of attachment based on a four-category framework: secure, fearful-avoidant, preoccupied, and dismissing-avoidant. The questionnaire reports good reliability and internal consistency and the inclusion of the questionnaire would provide an opportunity to explore the association between SCC and adult attachment styles.

Observational study designs. The current research employed a cross-sectional design and there are specific limitations associated with the interpretation of statistical

analyses conducted on cross-sectional data. For example, it is particularly difficult, if not impossible, to ascertain directionality or causality between the variables. The limitations associated with cross-sectional designs became more apparent during the quality appraisal process for the included studies in Chapter 1.

To assess quality of the included studies, the Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies was initially selected as it is designed to be suitable for all observational study designs and was reported to compare favourably with other tools (Deeks et al., 2003). It is a 21-item measure, which assesses six components: selection bias, study design, confounders, blinding, withdrawals and drop-outs, intervention integrity and analyses.

During the appraisal process it became apparent that the tool penalised studies, which applied a cross-sectional design and thus, rated their overall quality as weak, regardless of the appraisal of other components of the study. Once all of the studies had been appraised I forwarded a random sample (n = 8, 27%) to an independent second rater. This process was particularly interesting as the independent inter-rate raised similar concerns regarding the tools efficacy at appraising cross-sectional studies. Following further discussions and careful consideration it was decided that another tool may be more appropriate and thus, for the purpose of the literature review the included studies were re-appraised using different quality appraisal tools.

This process alerted me to the perceived limitations associated with cross-sectional designs and analyses. Consequently, future research in this area would benefit from employing a cohort design to explore direction and cause within the identified associations.

Clinical Implications

In addition to the clinical implications discussed in Chapters 1 and 2, it would be especially useful to target clinical interventions at specific developmental stages. Stages

which have been identified as key in the development of the self-concept and identity more generally, such as adolescence (Sroufe, Egeland, Carlson, & Collins, 2005). According to Erikson (1968) adolescence is a critical period where individuals embark on a process of identity discovery, during which perceived aspects of their identity are tested, selected and integrated. Potential interventions could include psychologically informed teaching in schools, which aims to educate adolescents on the process of self-identity discovery. Such interventions may increase self-awareness and by engaging with such topics in the classroom environment, it may encourage continued conversations outside of the classroom with friends and family members. Clinical psychologists could play a specific role in such interventions by providing teaching and training to educational establishments and offering on-going consultation to support professionals navigate any potential opportunities or challenges that may arise.

Cross-disciplinary working relationships with Child and Adolescent Mental Health Services (CAMHS) are imperative to further support this process. Trans-diagnostic interventions such as, psychological formulations could be used as brief and targeted interventions, to provide adolescents with the opportunity to clarify and understand how their earlier experiences may have influenced the development of their perceived self-concept.

The findings from both Chapters 1 and 2 support an association between low levels of SCC and psychopathology thus, it is important to consider how professionals working in mental health services could specifically attend to SCC. It may be useful to consider using the SCCS to measure levels of SCC at pre and post intervention points. There are several aspects to SCC as proposed by Campbell et al. (1996), they suggest that when developed, SCC is clearly and confidently defined, internally consistent and temporally stable, and a closer inspection of ratings across these different facets, may guide the formulation and intervention process. For example, an individual may report a clearly and confidently defined

SCC but may lack internal consistency thus, interventions could focus on facilitating an increase in internal consistency and consequently, higher levels of SCC. Specific interventions, which may support this process, have been discussed in Chapter 1.

All services who work directly with children and families are responsible for identifying and adequately responding to at-risk families who may be experiencing adversity or trauma. A recent report highlighted that the mental health needs of children who have experienced abuse are not routinely or adequately assessed (Bentley, O'Hagan, Raff, & Bhatti, 2016). This is concerning given that nine out of ten children who experienced abuse or neglect in early adolescence were reported to have received at least one psychiatric diagnosis before their eighteenth birthday (Sroufe et al., 2005). Although there is the need to increase support for children and families who experience such incidences the current socio-economic context significantly impacts on the delivery of such interventions. What we know is that only 6% of the budget for mental health services in the UK is allocated to services for children and adolescents yet, children and adolescents account for 24% of the total population seeking support for their mental health (Frith, 2016).

One way that clinical psychologists can influence changes to policy and legislation is by contributing to clinically relevant research. It is imperative that clinical psychologists continue to undertake, publish and disseminate robust research findings, which highlight the association between trauma and psychopathology, and the economic benefits associated with targeting interventions at an earlier stage. Given that recent statistics estimate that mental health needs currently cost the economy, NHS and society £105 billion a year in England alone (NHS England, 2016) it is imperative that psychologically informed research is used to develop both preventative and responsive interventions.

Conclusion

Throughout the research process I felt incredibly fortunate to have the opportunity to explore SCC at a relatively in-depth level, yet I sometimes felt that as the research process progressed, with it came increased complexity. I evolved from a position of trying to ascertain the presence of an association between SCC and psychopathology towards a new position of trying to understand what the underlying mechanisms in this association may be. By drawing on previous research, similar theoretical approaches and my own clinical experience I began to explore how impaired levels of SCC may fit with trauma, attachment and mentalisation, all of which are recognised in the literature as trans-diagnostic issues. At times, it felt like I was starting to understand how individual experiences may impact on the development of SCC and the development of a stable, certain, internally consistent and clearly defined self-concept. These discussions then led me to consider how SCC may be maintained, perhaps through recurrent thoughts, behaviours or patterns of relating and how these may perpetuate high or low levels of SCC. In my endeavour to make sense of these intricacies, I drew from various theoretical approaches such as social comparison theory, self-discrepancy theory and self-concept differentiation, which allowed me to critically evaluate SCC as a construct, and consequently, the findings from Chapters 1 and 2.

Throughout this process there were times when I felt as though the scope of the research was far greater than I had envisaged and I frequently felt that I could not do it justice. Yet, simultaneously I felt excited by the emergence of new possibilities and how they could inform clinical practice and future research. On reflection if I had this opportunity again I do not believe that I would necessarily do anything differently, primarily because I have learnt valuable lessons throughout every stage of the process. However, I do wonder how my attempt to conceptualise the association between SCC and psychopathology would have developed had I had the luxury of more space and time.

References

Barnett, M. D., Moore, J. M., & Harp, A. R. (2017). Who we are and how we feel: Self-discrepancy theory and specific affective states. *Personality and Individual Differences*, *111*, 232–237. https://doi.org/10.1016/j.paid.2017.02.024

Bartholomew, K., & Horowitz, L. . (1991). Attachment styles amoung young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*(2), 226–244. https://doi.org/http://dx.doi.org/10.1037/0022-3514.61.2.226

Bebbington, P., & Nayani, T. (1995). The psychosis screening questionnaire. *International Journal of Methods in Psychiatric Research*, *5*, 11–19. https://doi.org/1049-8931/95/010011-09

Bentley, H., O'Hagan, O., Raff, A., & Bhatti, I. (2016). How safe are our children? The most comprehensive overview of child protection in the UK. NSPCC. Retrieved from https://www.nspcc.org.uk/globalassets/documents/research-reports/how-safe-children-2016-report.pdf

Berna, F., Göritz, A. S., Schröder, J., Martin, B., Cermolacce, M., Allé, M. C., … Moritz, S. (2016). Self-disorders in individuals with attenuated psychotic symptoms: Contribution of a dysfunction of autobiographical memory. *Psychiatry Research*, *239*, 333–341. https://doi.org/10.1016/j.psychres.2016.03.029

Bernstein, D., & Fink, L. (1998). *Childhood Trauma Questionnaire: A retrospective self-report manual*. San Antonio, TX: The Psychological Corporation.

Bigler, M., Neimeyer, G., & Brown, E. (2001). The divided self revisited: effects of self-concept clarity and self-concept differentiation on psychological adjustment. *Journal of Social and Clinical Psychology*, *20*(3), 396–415. https://doi.org/10.1521/jscp.20.3.396.22302

Butzer, B., & Kuiper, N. A. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences*, *41*(1), 167–176. https://doi.org/10.1016/j.paid.2005.12.017

Campbell, J. D. (1990). Self-Esteem and Clarity of the Self-Concept. *Journal of Personality and Social Psychology*, *59*(3), 538–549. https://doi.org/10.1037/0022-3514.59.3.538

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-Concept Clarity: Measurement, Personality Correlates, and Cultural Boundaries. *Journal of Personality and Social Psychology*, *70*(1), 141–156. https://doi.org/10.1037/0022-3514.70.1.141

Cicero, D. C., Martin, E. A., Becker, T. M., & Kerns, J. G. (2016). Decreased self-concept clarity in people with schizophrenia. *Journal of Nervous and Mental Disease*, *204*(2), 142–147. https://doi.org/10.1097/NMD.0000000000000442

de Sousa, P., Sellwood, W., Spray, A., Fernyhough, C., & Bentall, R. P. (2016). Inner Speech and Clarity of Self-Concept in Thought Disorder and Auditory-Verbal Hallucinations. *The Journal of Nervous and Mental Disease*, *204*(12), 885. https://doi.org/10.1097/NMD.0000000000000584

Deeks, J. J., Dinnes, J., D'Amico, R., Sowden, A. J., Sakarovitch, C., Song, F., … Altman, D. G. (2003). Evaluating non-randomised intervention studies. *Health Technology Assessment (Winchester, England)*, *7*(27), 1–173. https://doi.org/10.3310/hta7270

Donahue, E. M., Robins, R. W., Roberts, B. W., & John, O. P. (1993). The Divided Self: Concurrent and Longitudinal Effects of Psychological Adjustment and Social Roles on Self-Concept Differentiation. *Journal of Personality and Social Psychology*, *64*(5), 834–846. https://doi.org/10.1037/0022-3514.64.5.834

Erikson, E. H. (1968). *Identity : youth and crisis*. London : Faber & Faber.

Evans, G. J., Reid, G., Preston, P., Palmier-Claus, J., & Sellwood, W. (2015). Trauma and psychosis: The mediating role of self-concept clarity and dissociation. *Psychiatry Research*. https://doi.org/10.1016/j.psychres.2015.04.053

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., … Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245–258. https://doi.org/10.1016/S0749-3797(98)00017-8

Festinger, L. (1954). A Theory of Social Comparison Processes. *Human Relations*, *7*(2), 117–140. https://doi.org/10.1177/001872675400700202

Fonagy, P. (2000). Attachment and Borderline Personality Disorder. *Journal of the American Psychoanalytic Association*, *48*(4), 1129–1146. https://doi.org/10.1177/00030651000480040701

Fonagy, P., & Target, M. (1997). Attachment and reflective function: Their role in self-organization. *Dev. Psychopathol.*, *9*(4), 679–700. Retrieved from https://www-cambridge-org.ezproxy.lancs.ac.uk/core/journals/development-and-psychopathology/article/attachment-and-reflective-function-their-role-in-selforganization/FEC1E2D572C1B3E4A96D2EBA08397562

Fonagy, P., Target, M., Gergely, G., Allen, J. G., & Bateman, A. W. (2003). The Developmental Roots of Borderline Personality Disorder in Early Attachment Relationships: A Theory and Some Evidence. *Psychoanalytic Inquiry*, *23*(3), 412–459. https://doi.org/10.1080/07351692309349042

Frith, E. (2016). CentreForum Commission on Children and Young People's Mental Health: State of the Nation. CentreForum. Retrieved from https://centreforum.org/live/wp-content/uploads/2016/04/State-of-the-Nation-report-web.pdf

Higgins, E. . (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, *94*, 319–340. https://doi.org/http://dx.doi.org.ezproxy.lancs.ac.uk/10.1037/0033-295X.94.3.319

Honig, A., Romme, M. A., Ensink, B. J., Escher, S. D., Pennings, M. H., & Devries, M. W. (1998). Auditory hallucinations: a comparison between patients and nonpatients. *The Journal of Nervous and Mental Disease*, *186*(10), 646. https://doi.org/10.1097/00005053-199810000-00009

Kelleher, I., & DeVylder, J. . (2017). Hallucinations in borderline personality disorder and common mental disorders. *The British Journal of Psychiatry*, (210), 230–231. https://doi.org/10.1192/bjp.bp.116.185249

Korver-Nieberg, N., Berry, K., Meijer, C., de Haan, L., & Ponizovsky, A. M. (2015). Associations between attachment and psychopathology dimensions in a large sample of patients with psychosis. *Psychiatry Research*, *228*(1), 83–88. https://doi.org/10.1016/j.psychres.2015.04.018

Korver-Nieberg, N., Berry, K., Meijer, C. J., & Haan, L. (2014). Adult attachment and psychotic phenomenology in clinical and non-clinical samples: A systematic review. *Psychology & Psychotherapy: Theory, Research & Practice*, *87*(2), 127–154. http://doi.org/ 10.1111/papt.12010

Mabeth, A., Gumley, A., Schwannauer, M., & Fisher, R. (2011). Attachment states of mind, mentalization, and their correlates in a first-episode psychosis sample. *Psychology and Psychotherapy*, *84*(1), 42. https://doi.org/10.1348/147608310X530246

Manning, R. P. C., Dickson, J. M., Palmier-Claus, J., Cunliffe, A., & Taylor, P. J. (2017). A systematic review of adult attachment and social anxiety. *Journal of Affective Disorders*, *211*, 44–59. https://doi.org/10.1016/j.jad.2016.12.020

Mikulincer, M. (1995). Attachment Style and the Mental Representation of the Self. *Journal of Personality and Social Psychology*, *69*(6), 1203–1215. https://doi.org/10.1037/0022-3514.69.6.1203

NHS England. (2016). The Five Year forward view for Mental Health: A report from the independent Mental Health Taskforce to the NHS in England. NHS England. Retrieved from https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf

Roepke, S., Schröder-Abé, M., Schütz, A., Jacob, G., Dams, A., Vater, A., … Lammers, C.-H. (2011). Dialectic behavioural therapy has an impact on self-concept clarity and facets of self-esteem in women with borderline personality disorder. *Clinical Psychology & Psychotherapy*, *18*(2), 148. https://doi.org/10.1002/cpp.684

Sroufe, L., Egeland, B., Carlson, E., & Collins, W. (2005). *The Development of the Person The Minnesota Study of Risk and Adaptation from Birth to Adulthood*. New York: The Guilford Press.

Stopa, L., Brown, M. A., Luke, M. A., & Hirsch, C. R. (2010). Constructing a self: The role of self-structure and self-certainty in social anxiety. *Behaviour Research and Therapy*, *48*(10), 955–965. https://doi.org/10.1016/j.brat.2010.05.028

Tasca, G. A., & Balfour, L. (2014). Attachment and eating disorders: A review of current research. *International Journal of Eating Disorders*, *47*(7), 710–717. https://doi.org/10.1002/eat.22302

Wilson, J. K., & Rapee, R. M. (2006). Self-concept certainty in social phobia. *Behaviour Research and Therapy*, *44*(1), 113–136. https://doi.org/10.1016/j.brat.2005.01.006

Chapter Four: Ethics Application

Ethics Application

Total word count: 5896

Laura J. Binsale

Faculty of Health and Medicine

Division of Health Research

Lancaster University Lancaster

LA1 4YT

l.binsale@lancaster.ac.uk

Welcome to the Integrated Research Application System

IRAS Project Filter

The integrated dataset required for your project will be created from the answers you give to the following questions. The system will generate only those questions and sections which (a) apply to your study type and (b) are required by the bodies reviewing your study. Please ensure you answer all the questions before proceeding with your applications.

Please complete the questions in order. If you change the response to a question, please select 'Save' and review all the questions as your change may have affected subsequent questions.

Please enter a short title for this project (maximum 70 characters)
Childhood Trauma, Self-concept Clarity & Psychosis (Version 3)

1. Is your project research?

(●) Yes ( ) No

2. Select one category from the list below:

( ) Clinical trial of an investigational medicinal product
( ) Clinical investigation or other study of a medical device
( ) Combined trial of an investigational medicinal product and an investigational medical device
( ) Other clinical trial to study a novel intervention or randomised clinical trial to compare interventions in clinical practice
( ) Basic science study involving procedures with human participants
(●) Study administering questionnaires/interviews for quantitative analysis, or using mixed quantitative/qualitative methodology
( ) Study involving qualitative methods only
( ) Study limited to working with human tissue samples (or other human biological samples) and data (specific project only)
( ) Study limited to working with data (specific project only)
( ) Research tissue bank
( ) Research database

If your work does not fit any of these categories, select the option below:

( ) Other study

2a. Please answer the following question(s):

a) Does the study involve the use of any ionising radiation?	( ) Yes	(●) No
b) Will you be taking new human tissue samples (or other human biological samples)?	( ) Yes	(●) No
c) Will you be using existing human tissue samples (or other human biological samples)?	( ) Yes	(●) No

3. In which countries of the UK will the research sites be located? *(Tick all that apply)*

[x] England
[ ] Scotland

☐ Wales
☐ Northern Ireland

3a. In which country of the UK will the lead NHS R&D office be located:

◉ England
◯ Scotland
◯ Wales
◯ Northern Ireland
◯ This study does not involve the NHS

4. Which applications do you require?

IMPORTANT: If your project is taking place in the NHS and is led from England select 'IRAS Form'. If your project is led from Northern Ireland, Scotland or Wales select 'NHS/HSC Research and Development Offices' and/or relevant Research Ethics Committee applications, as appropriate.

☑ IRAS Form
☐ Confidentiality Advisory Group (CAG)
☐ National Offender Management Service (NOMS) (Prisons & Probation)

For NHS/HSC R&D Offices in Northern Ireland, Scotland and Wales the CI must create NHS/HSC Site Specific Information forms, for each site, in addition to the study wide forms, and transfer them to the PIs or local collaborators.

For participating NHS organisations in England different arrangements apply for the provision of site specific information. Refer to IRAS Help for more information.

Most research projects require review by a REC within the UK Health Departments' Research Ethics Service. Is your study exempt from REC review?

◯ Yes ◉ No

5. Will any research sites in this study be NHS organisations?

◉ Yes ◯ No

5a. Are all the research costs and infrastructure costs (funding for the support and facilities needed to carry out research e.g. NHS Support costs) for this study provided by a NIHR Biomedical Research Centre, NIHR Biomedical Research Unit, NIHR Collaboration for Leadership in Health Research and Care (CLAHRC), NIHR Patient Safety Translational Research Centre or a Diagnostic Evidence Co-operative in all study sites?

Please see information button for further details.

◯ Yes ◉ No

Please see information button for further details.

5b. Do you wish to make an application for the study to be considered for NIHR Clinical Research Network (CRN) Support and inclusion in the NIHR Clinical Research Network Portfolio?

Please see information button for further details.

◯ Yes ◉ No

The NIHR Clinical Research Network provides researchers with the practical support they need to make clinical studies happen in the NHS e.g. by providing access to the people and facilities needed to carry out research "on the ground".

If you select yes to this question, you must complete a NIHR Clinical Research Network (CRN) Portfolio Application Form (PAF) immediately after completing this project filter question and before submitting other applications. Failing to complete the PAF ahead of other applications e.g. HRA Approval, may mean that you will be unable to access NIHR CRN Support for your study.

6. Do you plan to include any participants who are children?

○ Yes ◉ No

7. Do you plan at any stage of the project to undertake intrusive research involving adults lacking capacity to consent for themselves?

○ Yes ◉ No

Answer Yes if you plan to recruit living participants aged 16 or over who lack capacity, or to retain them in the study following loss of capacity. Intrusive research means any research with the living requiring consent in law. This includes use of identifiable tissue samples or personal information, except where application is being made to the Confidentiality Advisory Group to set aside the common law duty of confidentiality in England and Wales. Please consult the guidance notes for further information on the legal frameworks for research involving adults lacking capacity in the UK.

8. Do you plan to include any participants who are prisoners or young offenders in the custody of HM Prison Service or who are offenders supervised by the probation service in England or Wales?

○ Yes ◉ No

9. Is the study or any part of it being undertaken as an educational project?

◉ Yes ○ No

Please describe briefly the involvement of the student(s):
The student is the chief researcher for the current study.

9a. Is the project being undertaken in part fulfilment of a PhD or other doctorate?

◉ Yes ○ No

10. Will this research be financially supported by the United States Department of Health and Human Services or any of its divisions, agencies or programs?

○ Yes ◉ No

11. Will identifiable patient data be accessed outside the care team without prior consent at any stage of the project (including identification of potential participants)?

○ Yes ◉ No

Integrated Research Application System
Application Form for Research administering questionnaires/interviews for quantitative analysis or mixed methodology study

The Chief Investigator should complete this form. Guidance on the questions is available wherever you see this symbol displayed. We recommend reading the guidance first. The complete guidance and a glossary are available by selecting Help.

Please define any terms or acronyms that might not be familar to lay reviewers of the application.

Short title and version number: (maximum 70 characters - this will be inserted as header on all forms)
Childhood Trauma, Self-concept Clarity & Psychosis (Version 3)

PART A: Core study information

1. ADMINISTRATIVE DETAILS

A1. Full title of the research:

The role of self-concept clarity in the relationship between childhood trauma and the onset and development of psychosis, depression and anxiety.

A2-1. Educational projects

Name and contact details of student(s):

Student 1

Title	Forename/Initials	Surname
Miss	Laura J.	Binsale

Address	Faculty of Health and Medicine, Lancaster University
	Furness Building
	Lancaster
Post Code	LA1 4YG
E-mail	l.binsale@lancaster.ac.uk
Telephone	01524592754
Fax	

Give details of the educational course or degree for which this research is being undertaken:

Name and level of course/ degree:
Doctorate in Clinical Psychology

Name of educational establishment:
Lancaster University

Name and contact details of academic supervisor(s):

Academic supervisor 1

Title	Forename/Initials	Surname
Professor	Bill	Sellwood

Address	Faculty of Health and Medicine, Lancaster University Furness Building Lancaster
Post Code	LA1 4YG
E-mail	b.sellwood@lancaster.ac.uk
Telephone	01524593998
Fax	

Please state which academic supervisor(s) has responsibility for which student(s):
Please click "Save now" before completing this table. This will ensure that all of the student and academic supervisor details are shown correctly.

Student(s)	Academic supervisor(s)
Student 1 Miss Laura J. Binsale	☐ Professor Bill Sellwood

A copy of a current CV for the student and the academic supervisor (maximum 2 pages of A4) must be submitted with the application.

A2-2. Who will act as Chief Investigator for this study?

- ◉ Student
- ○ Academic supervisor
- ○ Other

A3-1. Chief Investigator:

	Title Forename/Initials Surname
	Miss Laura J. Binsale
Post	Trainee Clinical Psychologist
Qualifications	
Employer	Lancashire Care Foundation Trust
Work Address	Faculty of Health and Medicine, Lancaster University Furness Building Lancaster
Post Code	LA1 4YG
Work E-mail	l.binsale@lancaster.ac.uk
* Personal E-mail	
Work Telephone	
* Personal Telephone/Mobile	07595982012
Fax	

** This information is optional. It will not be placed in the public domain or disclosed to any other third party without prior consent.*
A copy of a current CV (maximum 2 pages of A4) for the Chief Investigator must be submitted with the application.

A4. Who is the contact on behalf of the sponsor for all correspondence relating to applications for this project?
This contact will receive copies of all correspondence from REC and HRA/R&D reviewers that is sent to the CI.

	Title Forename/Initials Surname
	Dr Diane Hopkins
Address	Research Services
	Room B14, Furness College
	Lancaster University, Lancaster
Post Code	LA1 4YW
E-mail	ethics@lancaster.ac.uk
Telephone	01524 592838
Fax	

A5-1. Research reference numbers. *Please give any relevant references for your study:*

Applicant's/organisation's own reference number, e.g. R & D (if available):	
Sponsor's/protocol number:	
Protocol Version:	Version 4
Protocol Date:	14/07/2016
Funder's reference number:	
Project website:	

Additional reference number(s):

Ref.Number	Description	Reference Number

Registration of research studies is encouraged wherever possible. You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you have registered your study please give details in the "Additional reference number(s)" section.

A5-2. Is this application linked to a previous study or another current application?

○ Yes ◉ No

Please give brief details and reference numbers.

2. OVERVIEW OF THE RESEARCH

To provide all the information required by review bodies and research information systems, we ask a number of specific questions. This section invites you to give an overview using language comprehensible to lay reviewers and members of the public. Please read the guidance notes for advice on this section.

A6-1. Summary of the study. *Please provide a brief summary of the research (maximum 300 words) using language easily understood by lay reviewers and members of the public. Where the research is reviewed by a REC within the UK Health Departments' Research Ethics Service, this summary will be published on the Health Research Authority (HRA) website following the ethical review. Please refer to the question specific guidance for this question.*

The research study is looking to explore the relationship between childhood trauma and the development of psychosis, anxiety and/or depression in adulthood. Specifically the research will focus on a construct named self-concept clarity, which is described as a consistent, stable and clear belief that we hold about ourselves. The research will explore whether having this understanding of oneself (self-concept clarity) may protect an individuals' mental health against traumatic early life experiences.

The research will recruit participants who are currently experiencing mental health difficulties and those without mental health difficulties. Posters and leaflets containing information about the research study and an online link to the research questionnaires will be used to recruit participants. All data will be collected anonymously through an online

database. Participants who are currently experiencing mental health difficulties will be recruited from various mental health settings, such as, Community Mental Health Teams (CMHT's), Early Intervention Services (EIS's) and primary care settings as well as being recruited through relevant and appropriate third sector newsletters and websites, such as, The Hearing Voice's Network website. Participants who are not experiencing mental health difficulties will be recruited from primary care settings and a student population from an English University.

Participants will be allocated to one of three groups:
Group 1 - Participants who currently experience psychosis.
Group 2 - Participants who currently experience anxiety and/or depression with no psychotic symptoms.
Group 3 - Participants who are not experiencing psychosis, anxiety and/or depression.

All those recruited will be asked to complete six questionnaires. The online link advertised on the posters and leaflets will take participants to an online database named Qualtrics, which will contain the participants information sheet, consent form, all psychometric measures and a debrief sheet. Data collected will then be analysed according to the proposed analysis strategy.

A6-2. Summary of main issues. *Please summarise the main ethical, legal, or management issues arising from your study and say how you have addressed them.*

Not all studies raise significant issues. Some studies may have straightforward ethical or other issues that can be identified and managed routinely. Others may present significant issues requiring further consideration by a REC, R&D office or other review body (as appropriate to the issue). Studies that present a minimal risk to participants may raise complex organisational or legal issues. You should try to consider all the types of issues that the different reviewers may need to consider.

Some of the questions that the participants will be asked contain sensitive information and may cause them distress. Participants will be asked about any childhood experiences of trauma and about their experiences of psychosis, anxiety and depression. The participant information sheet will be open and transparent about what the questionnaires will be asking and it will provide example questions for the participants to read through before consenting to take part in the study. Participants will also be provided with instructions of how to stop the study and remove themselves from the study at any point during the survey should they experience any distress. Participants will be told that if they choose to withdraw from the study before the study end they will be directed immediately to the debrief sheet, which contains information on support services that they can contact.

In addition to the above participants will be provided with the e-mail address of the researcher and informed that they can contact the researcher to ask any questions they may have regarding the research before they consent to take part. If participants contact the researcher and express that they would like to take part but feel that they may need some support in completing the questionnaires, the researcher will arrange a suitable time slot whereby the participant could be supported by the researcher via the telephone or during a face-to-face meeting to complete the survey. If participants do request to complete the questionnaires during a face-to-face meeting the lone working policies of Mersey Care NHS Trust will be adhered to.

3. PURPOSE AND DESIGN OF THE RESEARCH

A7. Select the appropriate methodology description for this research. *Please tick all that apply*:

- ☐ Case series/ case note review
- ☐ Case control
- ☐ Cohort observation
- ☐ Controlled trial without randomisation
- ☐ Cross-sectional study
- ☐ Database analysis
- ☐ Epidemiology
- ☐ Feasibility/ pilot study
- ☐ Laboratory study
- ☐ Metanalysis
- ☐ Qualitative research

☑ Questionnaire, interview or observation study

☐ Randomised controlled trial

☐ Other (please specify)

A10. What is the principal research question/objective? *Please put this in language comprehensible to a lay person.*

There are two parts to the principal research question.

1. Does self-concept clarity fully or partially mediate the relationship between childhood trauma and psychosis?
2. Does self-concept clarity fully or partially mediate the relationship between childhood trauma and anxiety and/or depression?

A11. What are the secondary research questions/objectives if applicable? *Please put this in language comprehensible to a lay person.*

There are two parts to the secondary research question.

1. Is self-concept clarity reduced in the current psychosis sample in relation to the general population sample?
2. Is self-concept clarity reduced in the anxious and/or depressed sample in relation to the general population sample?

A12. What is the scientific justification for the research? *Please put this in language comprehensible to a lay person.*

The association between trauma and psychosis in adulthood is widely accepted (Matheson et al, 2013; Varese et al 2012). For example, one study reported that 77% of service users affected by a first episode of psychosis had experienced either physical, emotional and/or sexual abuse as a child and that exposure to childhood trauma was significantly correlated with positive symptoms of psychosis (Duhig et al., 2015). The relationship between childhood trauma and the later onset of anxiety and depression has been extensively researched and traumatic events experienced as a child found to significantly predict anxiety and depression in adulthood (Huh, Kim, Yu, & Chae, 2014).

One problem in understanding the origins of psychotic symptoms in this context is that they co-occur with anxiety and depression (The British Psychological Society, 2014). Self-concept clarity the “extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable” (Campbell et al., 1996, p.141) is a factor, which may help with these effort.

According to Evans et al. (2014) the experience of childhood trauma could disrupt the development of an integrated self-concept. Consistent with this hypothesis, they found that self-concept clarity mediated the relationship between childhood trauma and psychosis (Evans, Reid, Preston, Palmier-Claus, & Sellwood, 2015).

Self-concept clarity may play an important role in the onset and development of psychotic-like experiences (Cicero, Becker, Martin, Docherty, & Kerns, 2013; Cicero, Docherty, Becker, Martin, & Kerns, 2015; Cicero, Martin, Becker, & Kerns, 2015; Dimaggio & Lysaker, 2015), but, as stated above, this factor is also associated with later depression and anxiety. Given that some authors highlight issues with self-concept as being a specific route to psychotic phenomena (Evans et al, 2015) there is a need to tease out self-concept clarity as a mediator specifically linking childhood trauma to psychotic symptoms rather than to psychopathology in general.
That is, is the mediating role of self-concept clarity in psychosis related to those symptoms alone or is it an important mediator between childhood trauma and anxiety and depression as well?

To explore this question the current research aims to replicate the findings from Evans et al. (2015) where self-concept clarity mediated the relationship between childhood trauma and psychosis and extend these findings to explore whether self-concept clarity mediates the relationship between childhood trauma, depression and anxiety.

The findings from the current research could be used to identify underlying mechanisms contributing to the onset and development of psychosis, anxiety and depression, which could be used to inform future interventions.

A13. Please summarise your design and methodology. *It should be clear exactly what will happen to the research*

participant, how many times and in what order. Please complete this section in language comprehensible to the lay person. Do not simply reproduce or refer to the protocol. Further guidance is available in the guidance notes.

There will be two recruitment strategies running in parallel. Strategy one will use posters and leaflets to advertise the research and recruit participants currently experiencing psychosis, anxiety and/or depression from various mental health settings such as, CMHT's, EIS's and primary care settings and to recruit participants who are not currently experiencing psychosis, anxiety and/or depression from primary care settings and from a student population at a University in England.

Strategy two will use online advertising to recruit participants currently experiencing psychosis anxiety and/or depression through relevant and appropriate third sector newsletters and websites such as The Hearing Voice's Network website. The research will also be advertised on the University's webpage and intranet site to recruit participants who are not currently experiencing psychosis, anxiety and/or depression.

The leaflets and posters (A4) will contain a brief introduction to the research, clearly state the inclusion criteria, provide the contact details of the chief researcher, and contain an online link to the research materials, taking participants to an online database named Qualtrics. This will provide participants with access to an online participant information sheet (A1), which can be downloaded to the participant's computer, laptop, tablet or mobile device and a consent form (A2), which will be signed and submitted electronically. Once the consent form has been completed the participant will be asked to complete the following 7 questionnaires in order: demographic questionnaire, SCCS, PSQ, PHQ-9, GAD-7 and ACE (a brief summary of each of the questionnaires is outlined below). It is estimated that it will take participants approximately 45 minutes to complete all of the above, from the time the online database is accessed to the time that the last questionnaire is completed.

Once all of the questionnaires have been completed participants will be provided with a debrief sheet (A3) which can be downloaded to their computer, laptop, tablet or mobile device. The debrief sheet will provide participants with further information about the research and the contact details of the chief researcher and research sponsor should they wish to discuss the research or withdraw their data from the research.
In the event that a participant would like to take part in the research but is unable to complete the questionnaires independently. The poster and leaflet advertising materials will provide the e-mail address of the chief researcher and urge participants to contact the chief researcher and arrange a suitable time where appropriate telephone support can be made available to the participant to enable them to partake in the research and complete the questionnaires. The chief researcher will support the participant to complete the questionnaires via a telephone call, which may last up to 60 minutes. A Lancaster University mobile telephone allocated for research purposes will be used to facilitate this telephone call.

All of the data will be downloaded from the Qualtrics online database and securely transferred to statistical software package SPSS for analysis.

Questionnaires

Demographic Questionnaire - Age, gender and ethnicity

Self-Concept Clarity Scale (SCCS) (Campbell et al., 1996)
is a self-report scale with 12 items evaluating the extent to which beliefs about self are clearly defined, stable, and consistent. It has good internal consistency (α=0.86) and test-retest reliability (r=0.79) (Campbell, Assanand, & Paula, 2003) and has been used previously in similar studies.

Psychosis screening Questionnaire (PSQ) (Bebbington & Nayani, 1995). The PSQ will be used as a screening tool to ensure that no participants allocated to group 2 or group 3 are experiencing psychotic symptoms. The PSQ has five probe questions (plus secondary questions) enquiring about mania, thought insertion, paranoia, strange experiences and hallucinations. It has been reported to have a sensitivity of 96.9%, a specificity of 95.3%, a positive predictive value of 91.2%, and a negative predictive value of 98.4% in determining the presence of psychosis (Bebbington and Nayani, 1995).

Patient Health Questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001) is a 9-item self-report measure of depression symptom severity. The PHQ- 9 has demonstrated good internal consistency (α=0.89) (Kroenke et al., 2001).

Generalised Anxiety Disorder Assessment (GAD-7) (Spitzer, Kroenke, Williams, & Lōwe, 2006) is a 7-item self-report measure recommended for screening for generalized anxiety disorder and evaluating its severity. The GAD-7 has demonstrated good internal consistency (α=0.92) and test-retest reliability (r=0.83).

Adverse Childhood Events (ACE) (Felitti et al., 1998) is a 10-item self-report measure developed for the ACE study to identify childhood experiences of abuse and neglect.

A14-1. In which aspects of the research process have you actively involved, or will you involve, patients, service users, and/or their carers, or members of the public?

- [ ] Design of the research
- [ ] Management of the research
- [x] Undertaking the research
- [ ] Analysis of results
- [x] Dissemination of findings
- [ ] None of the above

Give details of involvement, or if none please justify the absence of involvement.
The Lancaster University Public Involvement Network (LUPIN) is a community, which is made up of clinical psychology service users and carers. Throughout the research, LUPIN members will be consulted at various stages, for example, LUPIN members will be asked to provide feedback on the presentation and accessibility of the online database before it goes live for participants to access. Information gathered through consultation processes with LUPIN members will be used to inform the undertaking of the research.

All participants who participate in the research will be provided with a summary report of the research on completion. A copy of the summary report will also be published on the hearing voice's network website. LUPIN members will be consulted on relevant information to be included and the overall presentation of the report.

4. RISKS AND ETHICAL ISSUES

RESEARCH PARTICIPANTS

A15. What is the sample group or cohort to be studied in this research?

Select all that apply:

- [ ] Blood
- [ ] Cancer
- [ ] Cardiovascular
- [ ] Congenital Disorders
- [ ] Dementias and Neurodegenerative Diseases
- [ ] Diabetes
- [ ] Ear
- [ ] Eye
- [ ] Generic Health Relevance
- [ ] Infection
- [ ] Inflammatory and Immune System
- [ ] Injuries and Accidents
- [x] Mental Health
- [ ] Metabolic and Endocrine
- [ ] Musculoskeletal
- [ ] Neurological
- [ ] Oral and Gastrointestinal

- ☐ Paediatrics
- ☐ Renal and Urogenital
- ☐ Reproductive Health and Childbirth
- ☐ Respiratory
- ☐ Skin
- ☐ Stroke

Gender:	Male and female participants
Lower age limit: 18	Years
Upper age limit: 65	Years

A17-1. Please list the principal inclusion criteria (list the most important, max 5000 characters).

1. Participants must be aged between 18-65 years old

2. Participants must be fluent in English

A17-2. Please list the principal exclusion criteria (list the most important, max 5000 characters).

1. Participants who are aged <18 years old and > 65 years old

2. Participants who are not fluent in English

RESEARCH PROCEDURES, RISKS AND BENEFITS

A18. Give details of all non-clinical intervention(s) or procedure(s) that will be received by participants as part of the research protocol. *These include seeking consent, interviews, non-clinical observations and use of questionnaires.*

Please complete the columns for each intervention/procedure as follows:

1. Total number of interventions/procedures to be received by each participant as part of the research protocol.
2. If this intervention/procedure would be routinely given to participants as part of their care outside the research, how many of the total would be routine?
3. Average time taken per intervention/procedure (minutes, hours or days)
4. Details of who will conduct the intervention/procedure, and where it will take place.

Intervention or procedure	1	2	3	4
Demographic Questionnaire	1	0	5 minutes	Completed online
Self-Concept Clarity Questionnaire	1	0	5 minutes	Completed online
Psychosis Screening Questionnaire	1	0	5 minutes	Completed online
Patient Health Questionnaire	1	0	5 minutes	Completed online
Generalised Anxiety Disorder Assessment	1	0	5 minutes	Completed online
Adverse Childhood Events Questionnaire	1	0	10 minutes	Completed online

A21. How long do you expect each participant to be in the study in total?

On average it is anticipated that it will take each participant approximately 45 minutes to complete all questionnaires, however, this may range from 30 to 60 minutes

A22. What are the potential risks and burdens for research participants and how will you minimise them?

For all studies, describe any potential adverse effects, pain, discomfort, distress, intrusion, inconvenience or changes to lifestyle. Only describe risks or burdens that could occur as a result of participation in the research. Say what steps would be taken to minimise risks and burdens as far as possible.

Some of the questions that the participants will be asked contain sensitive information and may cause them distress. Participants will be asked about any childhood experiences of trauma and about their experiences of psychosis, anxiety and depression. The participant information sheet will be open and transparent about what the questionnaires will be asking and it will provide example questions for the participants to read through before consenting to take part in the study. Participants will also be provided with instructions of how to stop the study and remove themselves from the study at any point during the survey should they experience any distress. Participants will be told that if they choose to withdraw from the study before the study end they will be directed immediately to the debrief sheet, which contains information on support services that they can contact.
In addition to the above participants will be provided with the e-mail address of the researcher and informed that they can contact the researcher to ask any questions they may have regarding the research before they consent to take part. If participants contact the researcher and express that they would like to take part but feel that they may need some support in completing the questionnaires, the researcher will arrange a suitable time slot whereby the participant could be supported by the researcher via the telephone to complete the survey.

A23. Will interviews/ questionnaires or group discussions include topics that might be sensitive, embarrassing or upsetting, or is it possible that criminal or other disclosures requiring action could occur during the study?

(●) Yes ( ) No

If Yes, please give details of procedures in place to deal with these issues:

Some of the questions that the participants will be asked contain sensitive information and may cause them distress. Participants will be asked about any childhood experiences of trauma and about their experiences of psychosis, anxiety and depression. The participant information sheet will be open and transparent about what the questionnaires will be asking and it will provide example questions for the participants to read through before consenting to take part in the study. Participants will also be provided with instructions of how to stop the study and remove themselves from the study at any point during the survey should they experience any distress. Participants will be told that if they choose to withdraw from the study before the study end they will be directed immediately to the debrief sheet, which contains information on support services that they can contact.

In addition to the above participants will be provided with the e-mail address of the researcher and informed that they can contact the researcher to ask any questions they may have regarding the research before they consent to take part. If participants contact the researcher and express that they would like to take part but feel that they may need some support in completing the questionnaires, the researcher will arrange a suitable time slot whereby the participant could be supported by the researcher via the telephone to complete the survey.

A24. What is the potential for benefit to research participants?

There are no specific benefits to taking part. However, research findings obtained during the study may help us to better understand the experiences of people who experience psychosis, anxiety and/or depression and may potentially be used to improve psychological treatments.

A26. What are the potential risks for the researchers themselves? *(if any)*

If any data are collected by telephone the researcher my hear distressing information related to experiences of childhood trauma. The researcher will use their clinical skills to manage the situation and seek supervision appropriately.

RECRUITMENT AND INFORMED CONSENT

In this section we ask you to describe the recruitment procedures for the study. Please give separate details for different study groups where appropriate.

A27-1. How will potential participants, records or samples be identified? Who will carry this out and what resources will be used?*For example, identification may involve a disease register, computerised search of social care or GP records, or review of medical records. Indicate whether this will be done by the direct care team or by researchers acting under arrangements with the responsible care organisation(s).*

At no point will the chief researcher have access to participants' medical or GP records. Participants will self volunteer to take part in the research after being informed about the research. Participants may be informed about the research in one of two ways; by receiving a leaflet when they arrive for a clinic appointment from a member of their direct care team or coming into contact with one of the research advertisements, either online or in one of the research advertisement sites.

No research data will be collected on any of the research advertisement sites, all data will be collected online or through telephone interviews. Participation will be anonymous and although a member of the participant's direct care team may provide a participant with an advertisement leaflet they will be unaware as to whether the participants proceed to participate in the research.

A27-2. Will the identification of potential participants involve reviewing or screening the identifiable personal information of patients, service users or any other person?

○ Yes ◉ No

Please give details below:

A28. Will any participants be recruited by publicity through posters, leaflets, adverts or websites?

◉ Yes ○ No

If Yes, please give details of how and where publicity will be conducted, and enclose copy of all advertising material (with version numbers and dates).

There will be two recruitment strategies, which will run parallel to one another. Strategy one will use posters and leaflets to advertise the research and recruit participants currently experiencing psychosis anxiety and/or depression from various mental health settings, such as, CMHT's, EIS's and primary care settings and to recruit participants who are not currently experiencing psychosis, anxiety and/or depression from primary care settings and from a student population at a University in England.
Strategy two will use online advertising to recruit participants currently experiencing psychosis anxiety and/or depression through relevant and appropriate third sector newsletters and websites, such as, The Hearing Voice's Network website. The research will also be advertised on the University's webpage and intranet site to recruit participants who are not currently experiencing psychosis, anxiety and/or depression.
The leaflets and posters (A4) will contain a brief introduction to the research, state the inclusion criteria, provide the contact details of the chief researcher, and contain an online link the research materials.

Copies of which can be found in the Research Protocol (Version 3) appendices sub-section.

A29. How and by whom will potential participants first be approached?

At no point during the research will the chief researcher (Laura Binsale) approach potential participants.
Participants will primarily be recruited through poster and leaflet advertisement and will not be directly approached.
Some participants may be approached by a member of their care team who will provide them with further information about the research and a research leaflet. It will then be the participants decision whether they want to participate in the research. The member of the care staff will not be involved in facilitating their participation further.

A30-1. Will you obtain informed consent from or on behalf of research participants?

◉ Yes ○ No

If you will be obtaining consent from adult participants, please give details of who will take consent and how it will be done, with details of any steps to provide information (a written information sheet, videos, or interactive material). Arrangements for adults unable to consent for themselves should be described separately in Part B Section 6, and for children in Part B Section 7.

If you plan to seek informed consent from vulnerable groups, say how you will ensure that consent is voluntary and fully informed.

Participants will be provided with an link to an online database named Qualtrics. The online database will provide participants with access to an online participant information sheet, which can be downloaded to the participant's computer, laptop, tablet or mobile device. The participant information sheet provides detailed information about the

study and provides example questions from the questionnaires to ensure that the participants are aware of what they will be asked to do during the research before providing consent. Once the participants have read the participant information sheet they will be directed to a consent form, which will be signed and submitted electronically. Once the consent form has been completed the participant will be asked to complete the questionnaires included in the research.

A copy of the consent form can be found in the Research Protocol Appendices sub-section.

If you are not obtaining consent, please explain why not.

Please enclose a copy of the information sheet(s) and consent form(s).

A30-2. Will you record informed consent (or advice from consultees) in writing?

○ Yes ◉ No

If No, how will it be recorded?

It will be recorded online and participants will be asked to tick each of the statements on the consent form that they agree with. When all of the boxes are ticked and the participant agrees with all of the statements, the database will record that the participant has provided their consent.

A copy of the consent form can be found in the Research Protocol Appendices sub-section.

A31. How long will you allow potential participants to decide whether or not to take part?

Participants will be provided with a detailed participant information sheet before the proceed to consent to take part in the research study (a copy of the participant information sheet can be found in the Research Protocol Appendices sub-section).

There is no allocated time from the point where potential participants read a research advertisement poster or leaflet to the point where they consent to take part and complete the questionnaires. However, the online questionnaire database will only be available for a limited period of time of 6 months, the online database will then be closed.

The consent form informs participants that their participation is voluntary and that they are free to withdraw at any time until the end of the survey without giving any reason and without their medical care or legal rights being affected. The consent form also informs participants that once the survey is completed and their responses have been recorded and submitted it will not be possible for them to be withdrawn.

A33-1. What arrangements have been made for persons who might not adequately understand verbal explanations or written information given in English, or who have special communication needs? *(e.g. translation, use of interpreters)*

One of the research study's inclusion criteria is that participants must be fluent in English, therefore, no translators or interpreters will be used.

If participants are experiencing difficulties in reading or responding to the questions in the research they are asked to contact the researcher who can support them in completing the questionnaires. Under these circumstances the researcher will arrange a telephone appointment where they will attempt to make reasonable adjustments to provide the the participant with the best possible change of participating in the research study. This may include providing further clarification of the research questions and wording them in a which the participant is able to understand.

A35. What steps would you take if a participant, who has given informed consent, loses capacity to consent during the study? *Tick one option only.*

○ The participant and all identifiable data or tissue collected would be withdrawn from the study. Data or tissue which is not identifiable to the research team may be retained.

○ The participant would be withdrawn from the study. Identifiable data or tissue already collected with consent would be retained and used in the study. No further data or tissue would be collected or any other research procedures carried out on or in relation to the participant.

○ The participant would continue to be included in the study.

○ Not applicable – informed consent will not be sought from any participants in this research.

◉ Not applicable – it is not practicable for the research team to monitor capacity and continued capacity will be assumed.

Further details:

CONFIDENTIALITY

In this section, personal data means any data relating to a participant who could potentially be identified. It includes pseudonymised data capable of being linked to a participant through a unique code number.

Storage and use of personal data during the study

A36. Will you be undertaking any of the following activities at any stage (including in the identification of potential participants)? *(Tick as appropriate)*

- ☐ Access to medical records by those outside the direct healthcare team
- ☐ Access to social care records by those outside the direct social care team
- ☐ Electronic transfer by magnetic or optical media, email or computer networks
- ☐ Sharing of personal data with other organisations
- ☐ Export of personal data outside the EEA
- ☐ Use of personal addresses, postcodes, faxes, emails or telephone numbers
- ☐ Publication of direct quotations from respondents
- ☐ Publication of data that might allow identification of individuals
- ☐ Use of audio/visual recording devices
- ☑ Storage of personal data on any of the following:
  - ☐ Manual files (includes paper or film)
  - ☐ NHS computers
  - ☐ Social Care Service computers
  - ☐ Home or other personal computers
  - ☑ University computers
  - ☐ Private company computers
  - ☐ Laptop computers

Further details:
Participants will be asked if they would like to receive a summary of the findings on completion of the research, if they tick the box to say that they would, they will then be asked to provide their first name and e-mail address.

The e-mail address will be kept in a separate file to the anonymised responses provided by each participant in response to each of the questionnaires, on a password protected file on the University Computer. Once the study is complete and relevant participants have been sent a copy of the findings, the files containing the participants' personal information will be destroyed.

A37. Please describe the physical security arrangements for storage of personal data during the study?

All data will be collected online, if data is collected via a telephone interview the researcher will record the participants' responses using the online database (Qualtrics).

The following physical security arrangements for storage of personal data is congruent with Lancaster University policy.

All participants' personal details will be kept separately from the data in a separate file on the chief researcher's password protected file space (H drive) on the University server via the VPN. The participants' name and e-mail addresses may be provided if participants state that they would like to receive a copy of the research findings on completion. The file containing the personal details of the participants will be destroyed once the summary of research findings have been disseminated to the participants.

Consent forms will be saved in a separate file to the participants' personal details, on the chief researcher's personal file space my password protected file space (H drive) on the University server via the VPN. These files may be retained for up to 10 years and it is the responsibility of the Research Coordinator to delete them.

A38. How will you ensure the confidentiality of personal data?*Please provide a general statement of the policy and procedures for ensuring confidentiality, e.g. anonymisation or pseudonymisation of data.*

Participants will not be required to provide any identifiable information during the research study and all participation will be anonymous in line with the guidance from the Department of Health Code of Confidentiality.

However, participants will be asked if they would like to receive a copy of the research findings on completion and, if so, they will be asked to provide their first name and a contact e-mail address. This is not a requirement of the research and any personal details are provided on a voluntary basis. No further personal details or identifiable information will be requested.

All participants' personal details will be kept separately from the data in a separate file on the chief researcher's password protected file space (H drive) on the University server via the VPN. The participants' name and e-mail addresses may be provided if participants state that they would like to receive a copy of the research findings on completion. The file containing the personal details of the participants will be destroyed once the summary of research findings have been disseminated to the participants.

A40. Who will have access to participants' personal data during the study? *Where access is by individuals outside the direct care team, please justify and say whether consent will be sought.*

Only the principal researcher will have access to the first names and e-mail addresses of the participants. No other personal or identifiable information will be requested during the research study.

Storage and use of data after the end of the study

A41. Where will the data generated by the study be analysed and by whom?

All data generated by the study will be analysed by the chief researcher and research supervisors. The majority of data analysis will take place on University Campus via the chief researcher's password protected space. If aspects of the data analysis are completed off campus the chief researcher's password protected space will be accessed via the secure VPN on the University server.

A42. Who will have control of and act as the custodian for the data generated by the study?

	Title	Forename/Initials	Surname
	Professor	Bill	Sellwood
Post	Programme Director, Doctorate in Clinical Psychology, Lancaster University		

University of Manchester
PhD Clinical Psychology
2001

University of Manchester
MSc Clinical Psychology

Qualifications	1989 University of Manchester BSc Psychology 1987 HCPC registered practitioner psychologist
Work Address	Division of Health Research Furness College, Lancaster University Lancaster
Post Code	LA1 4YG
Work Email	b.sellwood@lancaster.ac.uk
Work Telephone	01524 593998
Fax	

A43. How long will personal data be stored or accessed after the study has ended?

- ○ Less than 3 months
- ○ 3 – 6 months
- ○ 6 – 12 months
- ○ 12 months – 3 years
- ◉ Over 3 years

If longer than 12 months, please justify:
In accordance with Lancaster University's Research Data Policy all research data will be stored in either electronic or paper form for up to 10 years after the end of a project, unless ethical considerations, participant confidentiality, FOI requirements or external agencies e.g. NHS, specifically require otherwise.

A44. For how long will you store research data generated by the study?

Years: 10
Months:

A45. Please give details of the long term arrangements for storage of research data after the study has ended.*Say where data will be stored, who will have access and the arrangements to ensure security.*

Once the study has ended and the final report has been written up, the research data will be securely transferred to the Research Coordinator at Lancaster University. These files may be retained for up to 10 years and it is the responsibility of the Research Coordinator to delete them.

INCENTIVES AND PAYMENTS

A46. Will research participants receive any payments, reimbursement of expenses or any other benefits or incentives for taking part in this research?

○ Yes ◉ No

A47. Will individual researchers receive any personal payment over and above normal salary, or any other benefits or incentives, for taking part in this research?

○ Yes ◉ No

A48. Does the Chief Investigator or any other investigator/collaborator have any direct personal involvement (e.g. financial, share holding, personal relationship etc.) in the organisations sponsoring or funding the research that may give rise to a possible conflict of interest?

○ Yes ◉ No

NOTIFICATION OF OTHER PROFESSIONALS

A49-1. Will you inform the participants' General Practitioners (and/or any other health or care professional responsible for their care) that they are taking part in the study?

○ Yes ◉ No

If Yes, please enclose a copy of the information sheet/letter for the GP/health professional with a version number and date.

PUBLICATION AND DISSEMINATION

A50-1. Will the research be registered on a public database?

○ Yes ◉ No

Please give details, or justify if not registering the research.
No suitable register exists to record research conducted by Doctorate of Clinical Psychology trainees.

Registration of research studies is encouraged wherever possible.
You may be able to register your study through your NHS organisation or a register run by a medical research charity, or publish your protocol through an open access publisher. If you are aware of a suitable register or other method of publication, please give details. If not, you may indicate that no suitable register exists. Please ensure that you have entered registry reference number(s) in question A5-1.

A51. How do you intend to report and disseminate the results of the study? *Tick as appropriate:*

- ☑ Peer reviewed scientific journals
- ☑ Internal report
- ☑ Conference presentation
- ☑ Publication on website
- ☐ Other publication
- ☐ Submission to regulatory authorities
- ☐ Access to raw data and right to publish freely by all investigators in study or by Independent Steering Committee on behalf of all investigators
- ☐ No plans to report or disseminate the results
- ☑ Other (please specify)

Participants who would like to receive a summary of findings will be sent of a copy of the findings via e-mail once the study is complete.

A52. If you will be using identifiable personal data, how will you ensure that anonymity will be maintained when publishing the results?

N/A

A53. Will you inform participants of the results?

◉ Yes ○ No

Please give details of how you will inform participants or justify if not doing so.
Participants will be asked if they would like to receive a summary of findings once the study is complete. Participants will then provide their e-mail address and a copy of the findings will be sent to them via e-mail once the study is complete.

5. Scientific and Statistical Review

A54-1. How has the scientific quality of the research been assessed?*Tick as appropriate:*

- ☐ Independent external review
- ☐ Review within a company
- ☐ Review within a multi−centre research group
- ☑ Review within the Chief Investigator's institution or host organisation
- ☑ Review within the research team
- ☑ Review by educational supervisor
- ☐ Other

Justify and describe the review process and outcome. If the review has been undertaken but not seen by the researcher, give details of the body which has undertaken the review:
The research has undergone a peer-review process within the Doctorate of Clinical Psychology research team and has been reviewed by the researcher supervisor supervising the research.

For all studies except non-doctoral student research, please enclose a copy of any available scientific critique reports, together with any related correspondence.

For non-doctoral student research, please enclose a copy of the assessment from your educational supervisor/ institution.

A56. How have the statistical aspects of the research been reviewed?*Tick as appropriate:*

- ☐ Review by independent statistician commissioned by funder or sponsor
- ☑ Other review by independent statistician
- ☐ Review by company statistician
- ☐ Review by a statistician within the Chief Investigator's institution
- ☑ Review by a statistician within the research team or multi−centre group
- ☑ Review by educational supervisor
- ☐ Other review by individual with relevant statistical expertise
- ☐ No review necessary as only frequencies and associations will be assessed – details of statistical input not required

In all cases please give details below of the individual responsible for reviewing the statistical aspects. If advice has been provided in confidence, give details of the department and institution concerned.

	Title Forename/Initials Surname
Department	Department of Mathematics and Statistics
Institution	Lancaster University
Work Address	Lancaster

Post Code LA1 4YF
Telephone
Fax
Mobile
E-mail

Please enclose a copy of any available comments or reports from a statistician.

A57. What is the primary outcome measure for the study?

There is no single outcome measure for the study.The dependent variables explored in the research are depression, anxiety and the occurrence of psychosis.

A58. What are the secondary outcome measures?*(if any)*

A59. What is the sample size for the research? *How many participants/samples/data records do you plan to study in total? If there is more than one group, please give further details below.*

Total UK sample size: 90
Total international sample size (including UK):
Total in European Economic Area:

Further details:
Participants will be allocated to one of the following three groups:
Group 1 - Participants who are currently are experiencing psychosis.
Group 2 - Participants who are currently experiencing anxiety and/or depression with no psychotic symptoms.
Group 3 - Participants who are not experiencing psychosis, anxiety and/or depression.

A MINIMUM total of 90 participants will be recruited to the research, 30 participants in each of the three groups. There is no upper maximum number of participants. All participant's data who participate in the research study will be included in the research if the participants meets the inclusion criteria for the research study.

A60. How was the sample size decided upon? *If a formal sample size calculation was used, indicate how this was done, giving sufficient information to justify and reproduce the calculation.*

A sample size calculation was completed using PowerMediation package for R-project based on a previous study of the mediational effect of self-concept clarity between childhood traumas and having psychotic symptoms (Evans et al, 2015). Not all details were available from that study, therefore assumptions were made about the size of the odds ratio and confidence intervals. For similar sized groups and assuming an odds ratio of 2 for the mediational effect, a correlation between SCC and childhood trauma of .5, a power of .8 and $\alpha = 0.05$; a sample size of 88 would be required ([power=.8, b2=log(2), sigma.m=1, p=29/60, corr.xm=.5](1) 88). Therefore, a total of 90 participants would be required (so as to obtain equal sized groups), 30 participants in each group to detect an effect size of $p<0.05$.

However, a more conservative estimated effect size (OR = 1.5) with other assumptions kept the same would require a sample size of 254.9, equating to 85 per group so as to obtain equal sized groups (Mediation.VSMc.logistic(power=.8, b2=log(1.5), sigma.m=1, p=29/60,>corr.xm=.5).

A61-1. Will participants be allocated to groups at random?

○ Yes ◉ No

A62. Please describe the methods of analysis (statistical or other appropriate methods, e.g. for qualitative research) by which the data will be evaluated to meet the study objectives.

Firstly, an independent ANOVA will be used to compare the mean differences of self-concept clarity between Group 1, Group 2 and Group 3.
Secondly, a four-staged approach will be taken to test for mediation based on Baron and Kenny's (1986) method.
X = Childhood Trauma
Y(1) = Psychosis
Y(2) = Anxiety and/or depression
M = Self-Concept Clarity
Stage 1 - Two simple regression analyses will be conducted to test whether X predicts Y(1) and Y(2).
Stage 2 - One simple regression analysis will be conducted to test wither X predicts M.
Stage 3 - Two simple regression analyses will be conducted to test whether M predicts Y(1) and Y(2).
If all of the relationships in stages 1-3 are significant proceed to stage 4, if one or more of the relationships in stages 1-3 are non-significant conclude that mediation is not likely.
Stage 4 - A multiple regression analysis will be conducted with X and M predicting Y(1) and Y(2).

6. MANAGEMENT OF THE RESEARCH

A63. Other key investigators/collaborators. *Please include all grant co−applicants, protocol co−authors and other key members of the Chief Investigator's team, including non-doctoral student researchers.*

	Title Forename/Initials Surname
	Dr Phil Preston
Post	Clinical Psychology
Qualifications	DClinPsy
Employer	[redacted]
Work Address	[redacted]
Post Code	[redacted]
Telephone	[redacted]
Fax	
Mobile	
Work Email	[redacted]

A64. Details of research sponsor(s)

A64-1. Sponsor

Lead Sponsor

Status:
- ○ NHS or HSC care organisation
- ◉ Academic
- ○ Pharmaceutical industry
- ○ Medical device industry
- ○ Local Authority
- ○ Other social care provider (including voluntary sector or private organisation)
- ○ Other

Commercial status:

If Other, please specify:

Contact person

Name of organisation	Lancaster University
Given name	Diane
Family name	Hopins
Address	Research Services, Room B14, Furness College, Lancaster University
Town/city	Lancaster
Post code	LA1 4YT
Country	UNITED KINGDOM
Telephone	01524 592838
Fax	
E-mail	ethics@lancaster.ac.uk

Is the sponsor based outside the UK?

○ Yes ◉ No

Under the Research Governance Framework for Health and Social Care, a sponsor outside the UK must appoint a legal representative established in the UK. Please consult the guidance notes.

A65. Has external funding for the research been secured?

☐ Funding secured from one or more funders

☐ External funding application to one or more funders in progress

☑ No application for external funding will be made

What type of research project is this?

◉ Standalone project

○ Project that is part of a programme grant

○ Project that is part of a Centre grant

○ Project that is part of a fellowship/ personal award/ research training award

○ Other

Other – please state:

A66. Has responsibility for any specific research activities or procedures been delegated to a subcontractor (other than a co-sponsor listed in A64-1) ? *Please give details of subcontractors if applicable.*

○ Yes ◉ No

A67. Has this or a similar application been previously rejected by a Research Ethics Committee in the UK or another country?

○ Yes ◉ No

Please provide a copy of the unfavourable opinion letter(s). You should explain in your answer to question A6-2 how the

reasons for the unfavourable opinion have been addressed in this application.

A68-1. Give details of the lead NHS R&D contact for this research:

	Title	Forename/Initials	Surname
	[redacted]		[redacted]
Organisation	[redacted]		
Address	[redacted]		
	[redacted]		
	[redacted]		
Post Code	[redacted]		
Work Email	[redacted]		
Telephone	[redacted]		
Fax			
Mobile			

Details can be obtained from the NHS R&D Forum website: http://www.rdforum.nhs.uk

A69-1. How long do you expect the study to last in the UK?

Planned start date: 29/07/2016
Planned end date: 12/05/2017
Total duration:
Years: 0 Months: 9 Days: 15

A71-1. Is this study?

- (●) Single centre
- ( ) Multicentre

A71-2. Where will the research take place? *(Tick as appropriate)*

- [x] England
- [ ] Scotland
- [ ] Wales
- [ ] Northern Ireland
- [ ] Other countries in European Economic Area

Total UK sites in study

Does this trial involve countries outside the EU?

( ) Yes (●) No

A72. Which organisations in the UK will host the research? *Please indicate the type of organisation by ticking the box and give approximate numbers if known:*

- [x] NHS organisations in England 1
- [ ] NHS organisations in Wales
- [ ] NHS organisations in Scotland

☐ HSC organisations in Northern Ireland	
☑ GP practices in England	1
☐ GP practices in Wales	
☐ GP practices in Scotland	
☐ GP practices in Northern Ireland	
☐ Joint health and social care agencies (eg community mental health teams)	
☐ Local authorities	
☐ Phase 1 trial units	
☐ Prison establishments	
☐ Probation areas	
☑ Independent (private or voluntary sector) organisations	8
☑ Educational establishments	2
☐ Independent research units	
☐ Other (give details)	
Total UK sites in study:	12

A73-1. Will potential participants be identified through any organisations other than the research sites listed above?

○ Yes ◉ No

A74. What arrangements are in place for monitoring and auditing the conduct of the research?

The research and field supervisors will monitor and audit the conduct of the research, through regular supervisory meetings which will be held monthly and regular draft reads of the different research components.

A76. Insurance/ indemnity to meet potential legal liabilities

***Note:* in this question to NHS indemnity schemes include equivalent schemes provided by Health and Social Care (HSC) in Northern Ireland**

A76-1. What arrangements will be made for insurance and/or indemnity to meet the potential legal liability of the sponsor(s) for harm to participants arising from the management of the research? *Please tick box(es) as applicable.*

Note: Where a NHS organisation has agreed to act as sponsor or co-sponsor, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For all other sponsors, please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (NHS sponsors only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A76-2. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of the sponsor(s) or employer(s) for harm to participants arising from the design of the research? *Please tick box(es) as applicable.*

Note: Where researchers with substantive NHS employment contracts have designed the research, indemnity is provided through NHS schemes. Indicate if this applies (there is no need to provide documentary evidence). For other protocol authors (e.g. company employees, university members), please describe the arrangements and provide evidence.

☐ NHS indemnity scheme will apply (protocol authors with NHS contracts only)

☑ Other insurance or indemnity arrangements will apply (give details below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A76-3. What arrangements will be made for insurance and/ or indemnity to meet the potential legal liability of investigators/collaborators arising from harm to participants in the conduct of the research?

Note: Where the participants are NHS patients, indemnity is provided through the NHS schemes or through professional indemnity. Indicate if this applies to the whole study (there is no need to provide documentary evidence). Where non-NHS sites are to be included in the research, including private practices, please describe the arrangements which will be made at these sites and provide evidence.

☑ NHS indemnity scheme or professional indemnity will apply (participants recruited at NHS sites only)

☑ Research includes non-NHS sites (give details of insurance/ indemnity arrangements for these sites below)

Lancaster University legal liability cover will apply.

Please enclose a copy of relevant documents.

A78. Could the research lead to the development of a new product/process or the generation of intellectual property?

○ Yes ◉ No ○ Not sure

PART C: Overview of research sites

Please enter details of the host organisations (Local Authority, NHS or other) in the UK that will be responsible for the research sites. *For NHS sites, the host organisation is the Trust or Health Board. Where the research site is a primary care site, e.g. GP practice, please insert the host organisation (PCT or Health Board) in the Institution row and insert the research site (e.g. GP practice) in the Department row.*

Investigator identifier	Research site	Investigator Name
IN1	◉ NHS site ○ Non-NHS site Country: England Organisation name [redacted] Address [redacted] Post Code [redacted]	Forename Laura Middle name Jessica Family name Binsale Email l.binsale@lancaster.ac.uk Qualification (MD...) BSc (Hons) Country UNITED KINGDOM

Version 3 24/08/16

Research Protocol

Title

The role of self-concept clarity in the relationship between childhood trauma and the onset and development of psychosis, depression and anxiety.

Trainee Name: Laura J. Binsale

Research Supervisor

Professor Bill Sellwood
b.sellwood@lancaster.ac.uk
Lancaster University
Department of Health and Medicine
0152 4593998

Field Supervisor

Dr Phil Preston
phil.preston@[redacted]
Phil Preston: Clinical Psychologist
[redacted]

Version 3 24/08/16

Introduction

The association between trauma and psychosis in adulthood is widely accepted (Matheson et al, 2013; Varese et al 2012). For example, one study reported that 77% of service users affected by a first episode of psychosis had experienced either physical, emotional and/or sexual abuse as a child and that exposure to childhood trauma was significantly correlated with positive symptoms of psychosis (Duhig et al., 2015). The relationship between childhood trauma and the later onset of anxiety and depression has been extensively researched and traumatic events experienced as a child found to significantly predict anxiety and depression in adulthood (Huh, Kim, Yu, & Chae, 2014).

The *self* and particularly *disturbances of the self* have been increasingly researched in relation to the onset and development of psychosis (Koren, Reznik, Adres, & Parnas, 2011; Nelson, Thompson, & Yung, 2012; Sass, 2014). Nelson et al. (2012) reported that levels of self-disturbance where not only, significantly higher in a high risk for psychosis sample compared to a healthy control group, but also significantly predicted the onset of psychosis at a 1.5 year follow up point.

One problem in understanding the origins of psychotic symptoms in this context is that they co-occur with anxiety and depression (The British Psychological Society, 2014). Recently there has been interest teasing out causal pathways that might distinguish hallucinations, delusions and depression (Bentall, et al., 2014; Sitko, Bentall, Shelvin, O'Sullivan & Sellwood, 2014).

Self-concept clarity the "extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable" (Campbell et al., 1996, p.141) is a factor, which may help with these efforts. Self-concept clarity is relatively diminished in

individuals with a diagnosis of schizophrenia in comparison to a healthy control group (Cicero, et al., 2015).

According to Evans et al. (2014) the experience of childhood trauma could disrupt the development of an integrated self-concept. Consistent with this hypothesis, they found that self-concept clarity mediated the relationship between childhood trauma and psychosis (Evans, Reid, Preston, Palmier-Claus, & Sellwood, 2015).

A longitudinal study exploring self-concept clarity, open communication and, depression and anxiety symptoms across adolescence, reported that lower self-concept clarity significantly predicted higher levels of anxiety and depression over time (Van Dijk et al., 2014), and self-concept clarity was found to fully mediate the relationship between anxiety, depression and social comparison in a sample of 166 undergraduate students (Butzer & Kuiper, 2006).

Self-concept clarity may play an important role in the onset and development of psychotic-like experiences (Cicero, Becker, Martin, Docherty, & Kerns, 2013; Cicero, Docherty, Becker, Martin, & Kerns, 2015; Cicero, Martin, Becker, & Kerns, 2015; Dimaggio & Lysaker, 2015), but, as stated above, this factor is also associated with later depression and anxiety. Given that some authors highlight issues with self-concept as being a specific route to psychotic phenomena (Evans et al, 2015) there is a need to tease out SCC as a mediator specifically linking childhood trauma to psychotic symptoms rather than to psychopathology in general. That is, is the mediating role of self-concept clarity in psychosis related to those symptoms alone or is it an important mediator between childhood trauma and anxiety and depression as well?

To explore this question the current research aims to replicate the findings from Evans et al. (2015) where self-concept clarity mediated the relationship between

childhood trauma and psychosis and extend these findings to explore whether self-concept clarity mediates the relationship between childhood trauma, depression and anxiety.

The findings from the current research could be used to identify underlying mechanisms contributing to the onset and development of psychosis, anxiety and depression, which could be used to inform future interventions.

Version 3 24/08/16

Method

Participants

Participants who are currently experiencing psychosis, anxiety and/or depression will be recruited from various mental health settings, such as, Community Mental Health Teams (CMHT's), Early Intervention Services (EIS's) and primary care settings as well as being recruited through relevant and appropriate third sector newsletters and websites, such as, The Hearing Voice's Network website.

Participants who are not currently experiencing psychosis, anxiety and/or depression will be recruited from primary care settings and from a student population at a University in England.

The research has two inclusion criteria, which are, that participants are aged between 18 – 65 years and are fluent in English.

Participants who meet the above inclusion criteria will be allocated to one of the following three groups:

Group 1 - Participants who are currently are experiencing psychosis.

Group 2 - Participants who are currently experiencing anxiety and/or depression with no psychotic symptoms.

Group 3 - Participants who are not experiencing psychosis, anxiety and/or depression.

A sample size calculation was completed using PowerMediation package for R-project based on a previous study of the mediational effect of self-concept clarity between childhood traumas and having psychotic symptoms (Evans et al, 2015). Not all details were available from that study, therefore assumptions were made about the size of the odds ratio and confidence intervals. For similar sized groups and assuming an odds ratio of 2 for the mediational effect, a correlation between SCC and childhood

trauma of .5, a power of .8 and α = 0.05; a sample size of 88 would be required ([power=.8, b2=log(2), sigma.m=1, p=29/60, corr.xm=.5](1) 88). Therefore, a total of 90 participants would be required (so as to obtain equal sized groups), 30 participants in each group with the significance level set at $p<0.05$.

However, a more conservative estimated effect size (OR = 1.5) with other assumptions kept the same would require a sample size of 254.9, equating to 85 per group so as to obtain equal sized groups (Mediation.VSMc.logistic(power=.8, b2=log(1.5), sigma.m=1, p=29/60,>corr.xm=.5).

Design

This is a quantitative study with a between subjects cross-sectional design. The research proposes to have three groups with a minimum of 30 participants in each group (minimum total of 90 participants) to be recruited to the research.

Materials

4-A Participant Information Sheet

4-B Consent Form

4-C Debrief Sheet

4-D Research advertisement leaflet and poster

4-E Demographic questionnaire.

4-F ***Self-Concept Clarity Scale (SCCS)*** (Campbell et al., 1996)

is a self-report scale with 12 items evaluating the extent to which beliefs about self are clearly defined, stable, and consistent. It has good internal consistency (α=0.86) and test-retest reliability (r=0.79) (Campbell, Assanand, & Paula, 2003).

4-G ***Psychosis screening Questionnaire (PSQ)*** (Bebbington & Nayani, 1995). The PSQ will be used as a screening tool to ensure that no participants allocated group 2 or group 3 are experiencing psychotic symptoms. The PSQ has five probe questions (plus secondary questions) enquiring about mania, thought insertion, paranoia, strange experiences and hallucinations. It has been reported to have a sensitivity of 96.9%, a specificity of 95.3%, a positive predictive value of 91.2%, and a negative predictive value of 98.4% in determining the presence of psychosis (Bebbington and Nayani, 1995).

4-H P***atient Health Questionnaire (PHQ-9)*** (Kroenke, Spitzer, & Williams, 2001) is a 9-item self-report measure of depression symptom severity. The PHQ- 9 has demonstrated good internal consistency (*α=0.89*) (Kroenke et al., 2001).

4-I ***Generalised Anxiety Disorder Assessment (GAD-7)*** (Spitzer, Kroenke, Williams, & Lōwe, 2006) is a 7-item self-report measure recommended for screening for generalized anxiety disorder and evaluating its severity. The GAD-7 has demonstrated good internal consistency (*α=0.92*) and test-retest reliability (r=0.83).

4-J ***Adverse Childhood Events (ACE)*** (Centres for Disease Control and Prevention, 2013; Felitti et al., 1998) is a 10-item self-report measure developed for the ACE study to identify childhood experiences of abuse and neglect. The test–retest reliability of the ACE scale was assessed by administering the survey twice to more than 600 participants and Kappa coefficients were found to range from good to excellent, indicating that retrospective reports of early abuse and household dysfunction were generally stable over time (Dube, Williamson, Thompson, Felitti, & Anda, 2004). Though no validity data are available on the ACE scale itself, a review of 40

studies assessing the validity of retrospective reports of ACE found that while underreporting of child maltreatments was common, false positives were rare (Hardt & Rutter, 2004).

Procedure

There will be two recruitment strategies, which will run parallel to one another. Strategy one will use posters and leaflets to advertise the research and recruit participants currently experiencing psychosis anxiety and/or depression from various mental health settings, such as, CMHT's, EIS's and primary care settings and to recruit participants who are not currently experiencing psychosis, anxiety and/or depression from primary care settings and from a student population at a University in England.

Strategy two will use online advertising to recruit participants currently experiencing psychosis anxiety and/or depression through relevant and appropriate third sector newsletters and websites, such as, The Hearing Voice's Network website. The research will also be advertised on the University's webpage and intranet site to recruit participants who are not currently experiencing psychosis, anxiety and/or depression.

The leaflets and posters (A4) will contain a brief introduction to the research, state the inclusion criteria, provide the contact details of the chief researcher, and contain an online link the research materials.

The online link will take participants to an online database named Qualtrics. The online database will provide participants with access to an online participant information sheet (4-A), which can be downloaded to the participant's computer, laptop, tablet or mobile device and a consent form (4-B), which will be signed and submitted electronically. Once the consent form has been completed the participant will be asked to complete the following questionnaires in order: demographic

questionnaire, SCCS, PSQ, PHQ-9, GAD-7 and ACE. It is estimated that it will take participants a maximum of 45 minutes to complete all of the above, from the time the online database is accessed to the time that the last questionnaire is completed.

Once all of the questionnaires have been completed participants will be provided with a debrief sheet (4-C) which can be downloaded to their computer, laptop, tablet or mobile device. The debrief sheet will provide participants with further information about the research and the contact details of the chief researcher and research sponsor should they wish to discuss the research.

In the event that a participant would like to take part in the research but is unable to complete the questionnaires independently. The poster and leaflet advertising materials will provide the e-mail address of the chief researcher and urge participants to contact the chief researcher and arrange a suitable time where appropriate telephone support can be made available to the participant to enable them to partake in the research and complete the questionnaires. The chief researcher will support the participant to complete the questionnaires via a telephone call, which may last up to 60 minutes. A Lancaster University mobile telephone allocated for research purposes will be used to facilitate this telephone call.

All of the data will be downloaded from the Qualtrics online database and securely transferred to statistical software package SPSS for analysis.

Version 3 24/08/16

Proposed Analysis

Firstly, an independent ANOVA will be used to compare the mean differences of self-concept clarity between Group 1, Group 2 and Group 3.

Secondly, a four-staged approach will be taken to test for mediation based on Baron and Kenny's (1986) method.

X *= Childhood Trauma*

Y(1) *= Psychosis*

Y(2) *= Anxiety and/or depression*

M *= Self-Concept Clarity*

Stage 1 - Two simple regression analyses will be conducted to test whether X predicts Y(1) and Y(2).

Stage 2 - One simple regression analysis will be conducted to test wither X predicts M.

Stage 3 - Two simple regression analyses will be conducted to test whether M predicts Y(1) and Y(2).

If all of the relationships in stages 1-3 are significant proceed to stage 4, if one or more of the relationships in stages 1-3 are non-significant conclude that mediation is not likely.

Stage 4 - A multiple regression analysis will be conducted with X and M predicting Y(1) and Y(2).

Version 3 24/08/16

Practical Issues

The research is exploring a specific population of participants who are currently experiencing psychosis and participant uptake may be limited. Therefore, a wide recruitment strategy will be applied to the research where participants who access early intervention for psychosis services and community mental health teams will be invited to participate in the research and participants who do not access mental health services will be invited to participate in the research through the use of third sector websites and newsletters. The research aims to be inclusive and engage as many participants as possible with the research.

In keeping with the ethos of the research, to be as inclusive as possible during the recruitment process, participants who are unable to complete the questionnaires independently will be given the option to contact the chief researcher. A participant may be unable to complete the questionnaires for many reasons, such as, no access to electronic devices or limited literacy and numeracy skills. In these instances participants will be offered support by the chief researcher where an appropriate appointment can be made and the chief researcher can obtain consent and support the participant to complete the relevant questionnaires. Participants will be given the option to complete the research via a telephone call using a Lancaster University mobile phone allocated for research purposes.

Consent forms will be completed electronically and downloaded to a personal password protected file space (H drive) on the University server via the VPN. These files may be retained for 10 years and it is the responsibility of the Research Coordinator to delete them.

Version 3 24/08/16

All of the data will be downloaded to a personal password protected file space (H drive) on the University server via the VPN, before being transferred into SPSS for statistical analysis.

Version 3 24/08/16

Ethical Concerns

Some of the questions that the participants will be asked contain sensitive information and may cause them distress. Participants will be asked about any childhood experiences of trauma and about their experiences of psychosis, anxiety and depression. The participant information sheet will be open and transparent about what the questionnaires will be asking and it will provide example questions for the participants to read through before consenting to take part in the study. Participants will also be provided with instructions of how to stop the study and remove themselves from the study at any point during the survey should they experience any distress. Participants will be told that if they choose to withdraw from the study before the study end they will be directed immediately to the debrief sheet, which contains information on support services that they can contact.

In addition to the above participants will be provided with the e-mail address of the researcher and informed that they can contact the researcher to ask any questions they may have regarding the research before they consent to take part. If participants contact the researcher and express that they would like to take part but feel that they may need some support in completing the questionnaires, the researcher will arrange a suitable time slot whereby the participant could be supported by the researcher via the telephone or during a face-to-face meeting to complete the survey.

Version 3 24/08/16

Timescale

2016	
January - April	Prepare ethics documentation: Research protocol and HRA application.
27th April	Send 1st draft of research protocol to academic supervisor.
9th May	Send 2nd draft of research protocol to academic and field supervisor.
27th May	Submit research protocol, supplementary materials and HRA documentation to [redacted] for review and sponsorship.
6th June	Contact [redacted] to discuss research and provide a copy of the research protocol before HRA approval.
July	Develop literature review plan and proposal and discuss with academic supervisor.
1st – 14th August	Transfer participant information sheet, consent form, debrief sheet and all relevant questionnaires to online database Qualtrics. Develop strategy to download data from the online database to either Microsoft Excel or SPSS.
15th August	Online database goes live
15th – 25th August	Distribute initial leaflets and posters to relevant services. Share online link with third sector sources to advertise via newsletters, websites and social media.
15th August – 5th December	Data collection
18th November	Submit 1st draft of literature review to academic supervisor.
6th December – 16th January	Data analysis
16th December	Submit 1st draft of introduction and methodology to academic supervisor
2017	
9th January	Submit 2nd draft of literature review to field supervisor
27th January	Submit 3rd draft of literature review to academic supervisor

Version 3 24/08/16

3rd February	Submit 2nd draft of introduction and methodology to field supervisor
20th February	Submit 1st draft of results and discussion to academic supervisor
27th February	Submit 3rd draft of introduction and methodology to academic supervisor
17th March	Submit 2nd draft of results and discussion to academic supervisor
31st March	Submit 3rd draft of results and discussion to field supervisor
3rd April	Submit 1st draft of complete research paper to academic supervisor.
17th April	Submit 2nd Draft of complete research paper to field supervisor
18th April	Submit 1st draft of critical appraisal to academic supervisor
2nd May	Submit 2nd draft of critical appraisal to field supervisor
8th-12th May	Final proof reading and binding of thesis.
12th May	**Submit Thesis**

Version 3 24/08/16

References

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182

Bebbington, P., & Nayani, T. (1995). The psychosis screening questionnaire. International Journal of Methods in Psychiatric Research, 5,11-19

Bentall, R. P., Sousa, P. de, Varese, F., Wickham, S., Sitko, K., Haarmans, M., & Read, J. (2014). From adversity to psychosis: pathways and mechanisms from specific adversities to specific symptoms. Social Psychiatry and Psychiatric Epidemiology, 1–12. doi:10.1007/s00127-014-0914-0

Braga R, J., Reynolds, G.P. & Siris, S.G. (2013). Anxiety comorbidity in schizophrenia. Psychiatry Research, 210 (1), 1–7. doi: 10.1016/j.psychres.2013.07.030

Butzer, B., & Kuiper, N. A. (2006). Relationships between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences*, *41*(1), 167–176. http://doi.org/10.1016/j.paid.2005.12.017

Campbell, J. D., Assanand, S., & Paula, A. D. (2003). The Structure of the Self-Concept and Its Relation to Psychological Adjustment. *Journal of Personality*, *71*(1), 115–140. http://doi.org/10.1111/1467-6494.t01-1-00002

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-Concept Clarity: Measurement, Personality Correlates, and

Version 3 24/08/16
Cultural Boundaries. *Journal of Personality and Social Psychology*, *70*(1), 141–156. http://doi.org/10.1037/0022-3514.70.1.141

Centers for Disease Control and Prevention (CDC). (2013). Adverse childhood experiences study: Prevalence of individual adverse childhood experiences. *Retrieved from http://www.cdc.gov/ace/prevalence.htm*

Cicero, D. C., Becker, T. M., Martin, E. A., Docherty, A. R., & Kerns, J. G. (2013). The Role of Aberrant Salience and Self-Concept Clarity in Psychotic-Like Experiences. *Personality Disorders: Theory, Research, and Treatment*, *4*(1), 33–42. http://doi.org/10.1037/a0027361

Cicero, D. C., Docherty, A. R., Becker, T. M., Martin, E. A., & Kerns, J. G. (2015). Aberrant salience, self-concept clarity, and interview-rated psychotic-like experiences. *Journal of Personality Disorders*, *29*(1), 79–99.

Cicero, D. C., Martin, E. A., Becker, T. M., & Kerns, J. G. (2015). Decreased self-concept clarity in people with schizophrenia. *The Journal of Nervous and Mental Disease*, *00*(00), 1–6. http://doi.org/10.1097/NMD.0000000000000442

Dimaggio, G., & Lysaker, P. H. (2015). Metacognition and Mentalizing in the Psychotherapy of Patients With Psychosis and Personality Disorders. *Journal of Clinical Psychology*, *71*(2), 117–124. http://doi.org/10.1002/jclp.22147

Dube S. R., Williamson D. F., Thompson T., Felitti V. J., Anda R. F. *(2004).* Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse & Neglect, 28, 729-737.*

Version 3 24/08/16

Duhig, M., Patterson, S., Connell, M., Foley, S., Capra, C., Dark, F., … Scott, J. (2015). The prevalence and correlates of childhood trauma in patients with early psychosis, *49*(7), 651–659. http://doi.org/10.1177/0004867415575379

Evans, G. J., Reid, G., Preston, P., Palmier-Claus, J., & Sellwood, W. (2015). Trauma and psychosis: The mediating role of self-concept clarity and dissociation. *Psychiatry Research*. http://doi.org/10.1016/j.psychres.2015.04.053

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., … Marks, J. S. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245–258. http://doi.org/10.1016/S0749-3797(98)00017-8

Freeman, D., & Garety, P.A. (2003). Connecting neurosis and psychosis: the direct influence of emotion on delusions and hallucinations. Behaviour Research and Therapy, 41(8), 923–947. doi:10.1016/S0005-7967(02)00104-3.

Hardt J., Rutter M. *(2004).* Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry, 45, 260-273.*

Huh, H. J., Kim, S.-Y., Yu, J. J., & Chae, J.-H. (2014). Childhood trauma and adult interpersonal relationship problems in patients with depression and anxiety disorders. *Annals of General Psychiatry*, *13*, 26. http://doi.org/10.1186/s12991-014-0026-y

Konings, M., Bak, M., Hanssen, M., Van Os, J., & Krabbendam, L. (2006). Validity and reliability of the CAPE: a self-report instrument for the measurement

Version 3 24/08/16
of psychotic experiences in the general population. *Acta Psychiatrica Scandinavica*, *114*(1), 55–61. http://doi.org/10.1111/j.1600-0447.2005.00741.x

Koren, D., Reznik, N., Adres, M., & Parnas, J. (2011). Disorders of the basic self as a marker of risk for emerging psychosis: A pilot study among non-psychotic help-seeking adolescents. *Schizophr. Bull.*, *37*, 18–18.

Kroenke, K., Spitzer, R., & Williams, J. (2001). The PHQ-9. *Journal of General Internal Medicine*, *16*(9), 606–613. http://doi.org/10.1046/j.1525-1497.2001.016009606.x

Matheson, S.L., Shepherd, A.M., Pinchbeck, R.M., Laurens, K.R., Carr, V.J. (2013). Childhood adversity in schizophrenia: a systematic meta-analysis. Psychological Medicine 43,225–238.

Nelson, B., Thompson, A., & Yung, A. R. (2012). Basic Self-Disturbance Predicts Psychosis Onset in the Ultra High Risk for Psychosis "Prodromal" Population. *Schizophrenia Bulletin*, *38*(6), 1277–1287. http://doi.org/10.1093/schbul/sbs007

Sass, L. A. (2014). Self-disturbance and schizophrenia: Structure, specificity, pathogenesis (Current issues, New directions). *Schizophrenia Research*, *152*(1), 5–11. http://doi.org/10.1016/j.schres.2013.05.017

Spitzer, R. ., Kroenke, K., Williams, J., & Lōwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of International Medicine*, *166*, 1093–1097.

Sitko, K. Bentall, RP, Shevlin, M. O'Sullivan, N. & Sellwood W. (2014) Associations between specific psychotic symptoms and specific childhood adversities

Version 3 24/08/16
are mediated by attachment styles: An analysis of the National Comorbidity Survey. Psychiatry Research: 217, 202-209 http://dx.doi.org/10.1016/j.psychres.2014.03.019

The British Psychological Society (BPS). 2014. Understanding Psychosis and Schizophrenia. The British Psychological Society: Leicester.

Van Dijk, M., Branje, S., Keijsers, L., Hawk, S., Hale, W., & Meeus, W. (2014). Self-Concept Clarity Across Adolescence: Longitudinal Associations With Open Communication With Parents and Internalizing Symptoms. *J. Youth Adolesc.*, *43*(11), 1861–1876. http://doi.org/10.1007/s10964-013-0055-x

Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., Read, J., van Os, J., Bentall, R.P. (2012). Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective-and cross-sectional cohort studies. Schizophrenia Bulletin 38, 661–671

4-A Participant Information Sheet

Research Study: The impact of childhood trauma. Does understanding ourselves protect our mental health?

We would like to invite you to take part in our research study. Before you decide whether you would like to take part in the research, we would like you to understand why the research is being done and what it will involve. Please read the following information carefully, and then click the button at the bottom of the page if you are happy to continue. If you have any questions or queries about taking part in the study, please contact the researcher, Laura Binsale (l.binsale@lancaster.ac.uk). You do not have to make the decision to take part at this time, so if you have any doubts or feel unsure please take some time to think it over.

Who is doing the research and who has approved it?

My name is Laura Binsale and I am conducting this research as part of a doctoral programme in clinical psychology at Lancaster University. The study has been given ethical approval by a NHS Research Ethics Committee.

What is the purpose of the study?

I am carrying out this research because I would like to find out more about experiences of psychosis, anxiety and depression. In particular, I would like to find out if adverse life experiences have any impact on experiences that are related to psychosis, anxiety and depression. This might include experiences such as hearing voices, having unusual beliefs or experiencing paranoia, for example. We also need to hear from people with no mental health problems.

Do I have to take part?

No – it is entirely up to you. If you begin to complete the survey and decide that you no longer want to, you are free to withdraw at any time up until the study end and you do not have to give us a reason. Should you wish to do this, simply close the Internet browser window or press the withdraw button displayed at the bottom of the page containing the questionnaires. Pressing this button will automatically direct you to the debriefing page and support contacts.

Unfortunately, once you have completed the study it will not be possible to ask for your data to be removed, as we will have no way of identifying which sets of answers are your own.

What will I be asked to do if I take part?

You will first be asked to complete an online consent form to let us know that you are happy to take part. This will involve carefully reading this information sheet and the consent form, and ticking the boxes provided. If you agree to take part, you will be directed to an online survey. There are 6 sections to this survey and we expect that completing this survey will take between 20 and 45 minutes in total.

This survey will ask you questions related to your thoughts, feelings and experiences, it will also ask you about any early experiences of trauma and any distress, anxiety and/or depression that you may or may not have experienced. Some of the questions in this survey may be very sensitive for you. These include items on childhood bullying, sexual abuse, stressful events, and symptom experiences. Some example questions are provided below.

E1 . Do you ever feel as if there is a conspiracy against you?

E2. While you were growing up, during your first 18 years of your life. Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you?

E3. Over the last 2 weeks, how often have you felt down, depressed, or hopeless?

What are the possible disadvantages and risks of taking part?

We do not anticipate that your participation will cause you distress. However, if you do experience distress you may discontinue the survey at any time. On completion of the survey, there is a list of contact details of various support services that you may contact if you experience distress as a result of participating. In addition, if you would like to talk directly to me, you can do so by emailing me and providing your contact details and I will respond to you during working hours.

If any of the questions asked during the survey raise any particular concerns or distress we would advise you to contact your G.P. and/or to discuss this with someone that you trust.

What are the possible benefits of taking part?

There are no specific benefits to taking part. However, research findings obtained during the study may help us to better understand the experiences of people who experience psychosis, anxiety and/or depression and may potentially be used to improve psychological treatments.

If you would like me to email you a summary of the findings when the study is complete, please fill in your email address in the box provided at the end of the survey, and tick the box 'summary of findings'.

Will my taking part in the study be kept confidential?

The responses that you provide in the questionnaires are anonymous and your responses are unidentifiable. The anonymous responses from the questionnaires that you complete will be pooled with the anonymous responses from other participants and will be written up in a research report. The data collected during the study will be stored in a secure place and only the named researchers will have access to it. Data files stored on the computer will be password protected. No names or addresses will be included and participants will be identified only by numbers in any computerised data files used in the analysis of the results. The data you provide will be kept anonymously for a maximum of 10 years on the University's secure server. It will then be permanently deleted.

If you provide your email address so that we can send you a summary of the findings, then I will keep this in a secure, password protected file. This information will not be attached to the information you provide on the survey and so the data collected will remain anonymous.

The only time I would need to break confidentiality is if you contacted me directly and told me something that made me concerned about yours, or someone else's safety. If I needed to do break confidentiality, I would try to tell you before I did it. Breaking confidentiality would mean I would need to ask my supervisors for advice, and in urgent circumstances I would need to contact emergency services.

What will happen to the results of the research study?

The results of the research will be included in a report that will be submitted for examination by Lancaster University. The results may also be published within an academic journal, and may be presented at conferences. There will be no personal information about any of the people who participate within any of these reports or presentations.

Who is involved in this research?

The chief investigator of this research is me, Laura Binsale.

My contact details are:
Clinical psychology doctorate programme
Faculty of Health and Medicine, Furness College, Lancaster University
LA1 4YF
l.binsale@lancaster.ac.uk

The research supervisors' details are:

Professor Bill Sellwood
Doctorate of Clinical psychology Programme Director
Faculty of Health and Medicine, Furness College, Lancaster University
LA1 4YF
b.sellwood@lancaster.ac.uk
0152 4593998

If you have any experience during your participation that you are unhappy with and wish to make a complaint, please contact:

Professor Roger Pickup
Faculty of Health and Medicine
Division of Biomedical Life Sciences
Lancaster University, Lancaster
LA1 4YD
r.pickup@lancaster.ac.uk
01524 593746

Where can I obtain further information if I need it?

Should you have any questions regarding this study, please contact Laura Binsale on the following e-mail address l.binsale@lancaster.ac.uk. Alternatively, you may prefer to contact Professor Bill Sellwood (b.sellwood@lancaster.ac.uk) who is supervising the research and is based at the Division of Clinical Psychology at Lancaster University.

Resources in the event of distress

If any of the questions asked during the survey raised any particular concerns or distress we would advise you to contact your local G.P. and/or to discuss this with someone that you trust. If you currently access services, this person may be your care coordinator, named nurse or psychologist.

Should you feel distressed either as a result of taking part, or in the future, the following resources may also be of assistance.

The Samaritans

The Samaritans are open 24 hours a day 365 days a year. You can contact them to talk through anything that is troubling you. For more information visit their website, or contact them on:

See more at: www.samaritans.org

Telephone (Freephone): 116 123

Email: jo@samaritans.org

Mind

Mind is a mental health charity, which provides information on different types of mental health difficulties and provides advice on how to access support.

See more at: www.mind.org.uk

Telephone: 0300 123 3393

Email: info@mind.org.uk

Hearing Voices Network

If you hear voices, the hearing voices network can help.

See more at: www.hearing-voices.org

Victim Support

Victim support offer support to individuals who have been a victim of a crime or have been affected by a crime committed against someone that they know. Victim support's services are free and available to everyone.

See more at: www.victimsupport.org.uk

Telephone (Freephone): 0808 16 89 111

Available: Weekdays 9am to 8pm, weekends 9am to 7pm, bank holidays 9am to 5pm

The National Association for People Abused in Childhood (NAPAC)

NAPAC's mission is to provide a range of services, which offer direct support to survivors and ensure that survivors know where they can go for help. NAPAC aim to work with others to increase the provision and effectiveness of support for survivors and stand up for survivors by representing their interests among those who are in a position to help improve their lives.

See more at: www.napac.org.uk

Telephone (Freephone): 0808 801 0331

The lines are open 10am till 9pm Monday to Thursday, 10am till 6pm on Friday.
If the lines are busy, please be patient and try again.

If you don't want to call the support line, you can also email them at support@napac.org.uk

Police

If you think you or someone else is in immediate danger please call the police on their emergency number 999. Telephone for non-emergency calls: 101

Thank you very much for taking to read this information sheet, please save or print it for future reference.

Laura Binsale, Trainee Clinical Psychologist, Lancaster University
Professor Bill Sellwood, Doctorate of Clinical Psychology Programme Director, Lancaster University
Dr Phil Preston, Clinical Psychologist, [redacted]

4-B Consent Form

Research Study: The impact of childhood trauma. Does understanding ourselves protect our mental health?

We are asking if you would like to take part in a research study, the purpose of which is explore the impact that traumatic events in childhood may, or may not have on the onset and development psychosis, depression and anxiety.
Before you consent to participating in the study we ask that you carefully read the participant information sheet before reading each of the following statements and ticking the box if you agree with each of the statements. If you have any questions or queries before signing the consent form please speak to the researcher, Laura Binsale (l.binsale@lancaster.ac.uk)

1. I confirm that I have read the information sheet and fully understand what is expected of me within this study
2. I confirm that I have had the opportunity to ask any questions and to have them answered.
3. I understand that my answers will be electronically stored and then analysed along with the responses from the other respondents in this survey.
4. I understand that my participation is voluntary and that I am free to withdraw at any time until the end of the survey without giving any reason and without my medical care or legal rights being affected.
5. I understand that once the survey is completed and my responses have been recorded and submitted it will not be possible for them to be withdrawn.
6. I understand that the information from my responses will be pooled with other participants' responses, anonymised and may be published.
7. I consent to anonymous information from my responses being used in reports, conferences and training events.
8. I understand that any information I give within the survey is completely anonymous.
9. I understand that the anonymous data that I give within this survey will be shared with the supervisors of the research.

10. I understand that if I provide my e-mail address, that this will be kept confidential and will not be kept with the anonymous data that I provide within the survey.
11. I understand that if I contact the researcher directly there may be circumstances in which the researcher may need to break confidentiality.
12. I consent to Lancaster University keeping anonymous electronic responses for up to 10 years after the study has finished.
13. I consent to take part in the above study.

4-C: Study Debrief

Research Study: The impact of childhood trauma. Does understanding ourselves protect our mental health?

The study is interested in how experiencing traumatic events as a child may or may not impact on the later development of psychosis, anxiety and depression.

How was this explored?

In this study, participants were asked to complete a survey, which contained 6 different questionnaires. The questionnaires explored experiences of psychosis, anxiety and depression, and asked about early life experiences and how participants viewed themselves and their thoughts and feelings.

Self-concept clarity was the main focus of the current research and refers to how an individual views themselves and how stable, clear and consistent this view of themselves is. Self-concept clarity was measured on the second questionnaire that you completed.

Participants who took part in the research were allocated to one of three groups depending on the answers that they provided on the questionnaires. Group 1 included participants who were experiencing psychosis, Group 2 included participants who were experiencing anxiety and/or depression and Group 3 included participants who were had no mental health problems.

Main questions

There were three main questions in the research study:
1. Is self-concept clarity reduced in the current psychosis group in relation to the general population group?
2. Is self-concept clarity reduced in the anxious and/or depressed group in relation to the general population group?
3. What is the role of self-concept clarity in the relationship between experiences of trauma in childhood and the onset and development of psychosis, anxiety and depression later on in life?

To explore question 3, we looked to see if there was a relationship between experience of trauma in childhood and the later experiences of psychosis, anxiety and depression. If there was a relationship we looked to see whether the role of self-concept clarity was an important factor in this relationship.

Why is this important to study?

It is important to study what factors could contribute to the development of mental health difficulties, such as, psychosis, anxiety and depression because the more we learn about the development of these difficulties the more we can learn about how to support individuals who experience them. It is important to continuously explore how we can develop therapeutic interventions, which enable individuals to recover from mental health difficulties, and we hope that research like this can support us to do this. Therefore, we are grateful that you took the time to participate in this study.

What if I want to know more?

If you would like to receive a report of this research when it is completed please tick 'summary of findings' and provide your e-mail address on the next page.

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:

Professor Bill Sellwood Tel: (01524) 594154
Professor, Head Of Department; Email: B.Sellwood@lancaster.ac.uk
Furness Building
Division of Health Research
Lancaster University, Lancaster
LA1 4YG

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

Professor Roger Pickup Tel: +44 (0)1524 593746
Associate Dean for Research Email: r.pickup@lancaster.ac.uk
Faculty of Health and Medicine
(Division of Biomedical and Life Sciences)
Lancaster University, Lancaster
LA1 4YG

Resources in the event of distress

If any of the questions asked during the survey raised any particular concerns or distress we would advise you to contact your local G.P. and/or to discuss this with someone that you trust. If you currently access services, this person may be your care coordinator, named nurse or psychologist.

Should you feel distressed either as a result of taking part, or in the future, the following resources may also be of assistance.

The Samaritans

The Samaritans are open 24 hours a day 365 days a year. You can contact them to talk through anything that is troubling you. For more information visit their website, or contact them on:

See more at: www.samaritans.org

Telephone (Freephone): 116 123

Email: jo@samaritans.org

Mind

Mind is a mental health charity, which provides information on different types of mental health difficulties and provides advice on how to access support.

See more at: www.mind.org.uk

Telephone: 0300 123 3393

Email: info@mind.org.uk

Hearing Voices Network

If you hear voices, the hearing voices network can help.

See more at: www.hearing-voices.org

Victim Support

Victim support offer support to individuals who have been a victim of a crime or have been affected by a crime committed against someone that they know. Victim support's services are free and available to everyone.

See more at: www.victimsupport.org.uk

Telephone (Freephone): 0808 16 89 111

Available: Weekdays 9am to 8pm, weekends 9am to 7pm, bank holidays 9am to 5pm

The National Association for People Abused in Childhood (NAPAC)

NAPAC's mission is to provide a range of services, which offer direct support to survivors and ensure that survivors know where they can go for help. NAPAC aim to work with others to increase the provision and effectiveness of support for survivors and stand up for survivors by representing their interests among those who are in a position to help improve their lives.

See more at: www.napac.org.uk

Telephone (Freephone): 0808 801 0331

The lines are open 10am till 9pm Monday to Thursday, 10am till 6pm on Friday.
If the lines are busy, please be patient and try again.

If you don't want to call the support line, you can also email them at support@napac.org.uk

Police

If you think you or someone else is in immediate danger please call the police on their emergency number 999

Telephone for non-emergency calls: 101

4-D Research Advertisement Leaflet
(Size A5 - Front)

4-D Research Advertisement Leaflet
(Size A5 - Back)

4-D Poster Advertisement
(A3)

A6 - Demographic Questionnaire

Q1 What is your gender?

- ❍ Male
- ❍ Female
- ❍ Other (please specify) _____

Q2 What is your age in years?

Q3 What is your ethnicity?

- ❍ White - Caucasian
- ❍ Asian
- ❍ Afro-Carribean
- ❍ Black African
- ❍ Black Other
- ❍ Middle-Eastern
- ❍ Other (please specify) _____

Q5 What is your sexual orientation?

- ❍ Heterosexual
- ❍ Homosexual
- ❍ Bisexual
- ❍ Other (please specify) _____

Q6 What is your marital status?

- ❍ Married or living with someone as if married
- ❍ Widowed
- ❍ Divorced or Annulled
- ❍ Separated
- ❍ Never Married

Q7 What level of education did you obtain?

- ❍ I didn't finish school
- ❍ GCSE'S / O-Levels (achieved or currently studying)
- ❍ A-Levels (achieved or currently studying)
- ❍ Undergraduate Degree (achieved or currently studying)
- ❍ Postgraduate Degree (achieved or currently studying)
- ❍ Doctoral Degree (achieved or currently studying)

Q8 Are you working or studying at the moment?

- ❍ Unemployed
- ❍ Working
- ❍ Studying

Q9 Have you ever seen a health professional for support with emotional or mental health difficulties?

- ❍ Yes (please give further information below) _____
- ❍ No

Q10 Have you ever been a patient in hospital for mental health difficulties?

- ❍ Yes (please describe what this was for) _____
- ❍ No

Q11 Have you ever received input from a community mental health team or early intervention team?

- ❍ Yes (please describe what this was for)
- ❍ No

Q12 Are you currently receiving input from mental health services?

- ❍ Yes (please describe what this is for) _____
- ❍ No

Q13 Have you ever been given a psychiatric diagnosis?

- ❍ No
- ❍ Anxiety
- ❍ Bipolar Disorder
- ❍ Brief Psychotic Disorder
- ❍ Delusional Disorder
- ❍ Depression
- ❍ Psychosis (unspecified)
- ❍ Schizophrenia
- ❍ Schizoaffective Disorder
- ❍ Schizophreniform Disorder
- ❍ Unsure
- ❍ Other (please specify) _____

Q14 Do you take medication for mental health difficulties?

- ❍ Yes (please tell us the names of these medications, or, if you can't remember please tell us what they are for) _____
- ❍ No

Appendix 4-F: Self-Concept Clarity Scale (SCCS)

These statements relate to your thoughts, feelings and experiences. There are no right or wrong answers or trick questions, so please answer as honestly as possible.

After each of the following statements, please mark the number that corresponds to your reaction to the statement. For example, placing a mark next to '1' would indicate that you strongly agreed with the statement, whereas placing a mark next to '5' would indicate that you strongly disagreed with the statement etc.

My beliefs about myself often conflict with one another.

Strongly Agree				**Strongly Disagree**
1	**2**	**3**	**4**	**5**

On one day I might have one opinion of myself and on another day I might have a different opinion.

Strongly Agree				**Strongly Disagree**
1	**2**	**3**	**4**	**5**

I spend a lot of time wondering about what kind of person I really am.

Strongly Agree				**Strongly Disagree**
1	**2**	**3**	**4**	**5**

Sometimes I feel that I am not really the person that I appear to be.

Strongly Agree				**Strongly Disagree**
1	**2**	**3**	**4**	**5**

When I think about the kind of person I have been in the past, I'm not sure what I was really like.

Strongly Agree				**Strongly Disagree**
1	**2**	**3**	**4**	**5**

Version 3 24/08/16

I seldom experience conflict between the different aspects of my personality.

Strongly Agree				Strongly Disagree
1	2	3	4	5

Sometimes I think I know other people better than I know myself.

Strongly Agree				Strongly Disagree
1	2	3	4	5

My beliefs about myself seem to change very frequently.

Strongly Agree				Strongly Disagree
1	2	3	4	5

If I were asked to describe my personality, my description might end up being different from one day to another day.

Strongly Agree				Strongly Disagree
1	2	3	4	5

Even if I wanted to, I don't think I could tell someone what I'm really like.

Strongly Agree				Strongly Disagree
1	2	3	4	5

In general, I have a clear sense of who I am and what I am.

Strongly Agree				Strongly Disagree
1	2	3	4	5

It is often hard for me to make up my mind about things because I don't really know what I want.

Strongly Agree				Strongly Disagree
1	2	3	4	5

Appendix 4-G: Psychosis Screening Questionnaire (PSQ)

Over the past year:

Section A		
Have there been times when you felt very happy indeed without a break for days on end?	Yes	No
Was there an obvious reason for this?	Yes	No
Did your relatives or friends think it was strange or complain about it?	Yes	No
During this happy period did you find you were getting on with far more things than usual without getting tired, so that you needed little sleep?	Yes	No
Section B		
Have you ever felt that your thoughts were being directly interfered with or controlled by another person?	Yes	No
Was this just because people were going out of their way to persuasive?	Yes	No
Was it just because people were distracting you?	Yes	No
Or did it come about in a way that many people would find hard to believe, for instance, through telepathy?	Yes	No
Section C		
Have there been times when you felt that people were against you?	Yes	No
Have there been times when you felt that people were deliberately acting to harm you or your interests?	Yes	No
Have there been times you felt that a group of people was plotting to cause you serious harm or injury?	Yes	No
Section D		
Have there been times when things looked or sounded or felt abnormal to you?	Yes	No
Have there been times when you felt that things changed their appearance while you looked at them?	Yes	No

Have there been times when you felt that things changed in size or shape while you looked at them?	Yes	No
Section E		
Have there been times when you felt that something strange was going on?	Yes	No
Did you feel it was so strange that other people would find it very hard to believe?	Yes	No
Did you feel it was so strange that you yourself could not explain it?	Yes	No
Section F		
Have there been times when you heard or saw things that other people couldn't?	Yes	No
Did you at any time hear voices saying quite a few words or sentence when there was no one around that might account for it?	Yes	No
Did you at any times see visions?	Yes	No

Appendix 4-H: Patient Health Questionnaire (PHQ-9)

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	**Several days**	**More than half the days**	**Nearly every day**
Little interest or pleasure in doing things.	0	1	2	3
Feeling down, depressed, or hopeless.	0	1	2	3
Trouble falling or staying asleep, or sleeping too much.	0	1	2	3
Feeling tired or having little energy.	0	1	2	3
Poor appetite or overeating.	0	1	2	3
Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	0	1	2	3
Trouble concentrating on things, such as reading the newspaper or watching television.	0	1	2	3
Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Appendix 4-I: Generalised Anxiety Disorder Questionnaire (GAD-7)

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	**Several days**	**More than half the days**	**Nearly every day**
Feeling nervous, anxious or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Worrying too much about different things	0	1	2	3
Trouble relaxing	0	1	2	3
Being so restless that it is hard to sit still	0	1	2	3
Becoming easily annoyed or irritable	0	1	2	3
Feeling afraid as if something awful might happen.	0	1	2	3

Appendix 4-J: Adverse Childhood Experiences (ACE)

These questions relate to your experiences during your first 18 years of life. You may find some of these questions difficult to think about and/or answer. If you do find that these questions do bring up difficult emotions, please refer to the participant information sheet and make contact with one of the individuals or support services provided, if you feel like you would like to discuss this further.

There are no right or wrong answers or trick questions, so please answer as honestly as possible. For each question please choose either YES or NO.

While you were growing up, during your first 18 years of life:

Did a parent or other adult in the household **often** … Swear at you, insult you, put you down, or humiliate you? **or** Act in a way that made you afraid that you might be physically hurt?	**Yes**	**No**
Did a parent or other adult in the household **often** … Push, grab, slap, or throw something at you? **or** **Ever** hit you so hard that you had marks or were injured?	**Yes**	**No**
Did an adult or person at least 5 years older than you **ever**… Touch or fondle you or have you touch their body in a sexual way? **or** Try to or actually have oral, anal, or vaginal sex with you?	**Yes**	**No**
Did you **often** feel that … No one in your family loved you or thought you were important or special? **or** Your family didn't look out for each other, feel close to each other, or support each other?	**Yes**	**No**

Version 3 24/08/16

Did you **often** feel that … You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? **or** Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	**Yes**	**No**
Were your parents **ever** separated or divorced?	**Yes**	**No**
Was your mother or stepmother: **Often** pushed, grabbed, slapped, or had something thrown at her? **or** **Sometimes or often** kicked, bitten, hit with a fist, or hit with something hard? **or** **Ever** repeatedly hit over at least a few minutes or threatened with a gun or knife?	**Yes**	**No**
Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	**Yes**	**No**
Was a household member depressed or mentally ill or did a household member attempt suicide?	**Yes**	**No**
Did a household member go to prison?	**Yes**	**No**

Appendix 4-K: NHS REC Provisional Opinion

NHS
Health Research Authority

North West - Greater Manchester West Research Ethics Committee

Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0207 104 8021

16 August 2016

Miss Laura J. Binsale
Trainee Clinical Psychologist
Lancashire Care Foundation Trust
Faculty of Health and Medicine, Lancaster University
Furness Building
Lancaster
LA1 4YG

Dear Miss Binsale

Study Title:	**The role of self-concept clarity in the relationship between childhood trauma and the onset and development of psychosis, depression and anxiety.**
REC reference:	**16/NW/0590**
IRAS project ID:	**207548**

The Research Ethics Committee reviewed the above application at the meeting held on 05 August 2016. Thank you for attending to discuss the application.

Provisional opinion

The Committee is unable to give an ethical opinion on the basis of the information and documentation received so far. Before confirming its opinion, the Committee requests that you provide the further information set out below.

1. The Committee would like reassurance from the academic supervisor that asking these questions to people with psychosis would not put these people at a significant risk of triggering a psychotic episode or anxiety or depression.
2. The Committee would like to see references to other studies that have use these patient groups and use online methods to ask these sensitive questionnaires.
3. The Committee would like further clarification on what the maximum sample size could be.
4. The Committee would like the information sheet and debrief sheet checked to make sure all email addresses are correct.
5. The Committee would like the information sheet and debrief sheet to contain information to sign post participants have never spoken to anyone before about their experiences where go and get some advice e.g. GP, support services.
6. The Committee would like the information sheet and debrief sheet to contain the phone numbers of the support groups and include some groups specific to childhood trauma.
7. The Committee would like the posters revised to explain that the childhood experiences could be good and bad.

Authority to consider your response and to confirm the Committee's final opinion has been delegated to the Chair.

If you would find it helpful to discuss any of the matters raised above or seek further clarification from a member of the Committee, you are welcome to contact Anna Bannister nrescommittee-northwest-gmwest@nhs.net

When submitting a response to the Committee, the requested information should be electronically submitted from IRAS. A step-by-step guide on submitting your response to the REC provisional opinion is available on the HRA website using the following link: http://www.hra.nhs.uk/nhs-research-ethics-committee-rec-submitting-response-provisional- opinion/

Please submit revised documentation where appropriate underlining or otherwise highlighting the changes which have been made and giving revised version numbers and dates. You do not have to make any changes to the REC application form unless you have been specifically requested to do so by the REC.

The Committee will confirm the final ethical opinion within a maximum of 60 days from the date of initial receipt of the application, excluding the time taken by you to respond fully to the above points. A response should be submitted by no later than 15 September 2016.

Summary of the discussion at the meeting

Ethical issues raised by the Committee in private discussion, together with responses given by the researcher when invited into the meeting

The Chair welcomed you and thanked you for attending to meeting.

Social or scientific value; scientific design and conduct of the study

The Committee queried if there would be any face to face interviews. You explained that you would offer firstly a telephone interview but if they need technical help they would offer a face to face interview. The Committee asked where they would be conducted. You explained that there are rooms at Mersey Care you could use. The Committee asked if any interview would be conducted at the participant's home. You confirmed you would not be going to participant homes. The Committee had no further issues.

Recruitment arrangements and access to health information, and fair participant selection

The Committee noted there would be 3 groups, 1 group with psychosis, 1 group with anxiety and depression but no psychosis and 1 group with no psychosis and depression or anxiety, and the first two groups could contain participants with and with childhood trauma. You confirmed that was correct. The Committee queried if it could be the case that she would get no participants with childhood trauma. You confirmed that was a risk.

The Committee noted that the researcher would keep on recruiting until you got 30 in each group but could mean that you would have to recruit will over the 90 participants to fill all 3 groups. You confirmed that was correct 90 would be the minimum. The Committee queried if could be in the 100s. You confirmed it could be. The Committee asked if you had a time limit to recruit the 90 in each group. You confirmed you did. The Committee asked what would happen if you did not recruit the 90 in the time limit. You explained that you hope to close the recruitment by December but would have the option to keep the website open until early 2017. You explained you have links with [redacted] who could help with recruitment. The Committee queried what would be their role. You explained that they would give out information sheet to patients and inform patients about the study. The Committee queried if they would filter out any too unwell and unsuitable patients. You confirmed they would not.

Favourable risk benefit ratio; anticipated benefit/risks for research participants (present

and future)

The Committee noted the study had acknowledged that some of the questions contain sensitive information which may cause them distress and they have devised a debrief sheet providing further information contact details of support groups. However the Committee still had had concerns over safe guarding of participants and were of the opinion the application did not offer the reassurance that participants were not put at undue risk and that adequate support was available if participants did become distressed. The Committee asked if the researcher had been to PPI groups and discussed with them if these questions would be likely to cause distress or if compared to normal care questions would not. You explained that you had not approach groups but pervious research has shown that these types of studies are not distressing for patients and that people are not asked enough about past traumas. You explained that you would be happy to submit the research references. The Committee asked if these research studies have been conducted online. You confirmed that they have. You explained that your supervisor was a consultant clinical Psychologist and is a professor of clinical Psychology.

The Committee queried whether the website could only be open during working hours to limit participants filling it out at night when less support was available. You explained that this would not be possible.

The Committee further discussed the risk of distress to participants after the researcher had left the room. The Committee had felt more reassured that the study would not be highly risky for people with psychosis and trigger an acute episode but would like further reassurance from academic supervisor that participation in the study would not cause undue distress or trigger an episode of psychosis.

Care and protection of research participants; respect for potential and enrolled participants' welfare and dignity

The Committee noted that email addresses of participants would be used to send results of the study and queried if there could be any accidental disclosure. You explained that all the questionnaires are anonymised so there would be no individual results, all they would send participants was a copy of the overall results of the study. The Committee had no further issues.

The Committee asked what would happen if a participant only partially completed the questionnaire. You explained that if depends on how much of the questionnaire has been completed whether she would use the data but all participants would be taken to the debrief sheet if they only partially completed the questionnaire. The Committee had no further issues.

Informed consent process and the adequacy and completeness of participant information

The Committee noted the information sheet contained emails and telephone numbers for the Samaritans and Victim support but these were not free phone numbers and the email address was not complete. The Committee asked for the free phone numbers to be added and for other support groups to be included specific to childhood trauma. You agreed to add.

The Committee thought the information sheet and debrief sheet should contain information to sign post participants have never spoken to anyone before about their experiences to sources of advice e.g. GP, support services.

Suitability of supporting information

The Committee were of the opinion that the poster was very vague and did not mention childhood trauma and thought it could be more explicit. The Committee suggested that the poster should say good or bad childhood experiences as that would warn participants that they would be asked about bad experiences. You agreed.

Documents reviewed

The documents reviewed at the meeting were:

Document	*Version*	*Date*
Copies of advertisement materials for research participants	2	01 July 2016
Copies of advertisement materials for research participants [Research Advertising Leaflet]	2	01 July 2016
Covering letter on headed paper		14 July 2016
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance]		20 July 2015
IRAS Application Form [IRAS_Form_20072016]		20 July 2016
IRAS Application Form XML file [IRAS_Form_20072016]		20 July 2016
IRAS Checklist XML [Checklist_21072016]		21 July 2016
Letter from sponsor		16 June 2016
Non-validated questionnaire	2	14 July 2016
Other [Liability Insurance]		01 August 2015
Other [Liability Insurance (2)]		13 August 2015
Participant consent form	3	14 June 2016
Participant information sheet (PIS)	3	14 June 2016
Research protocol or project proposal	2	14 July 2016
Summary CV for Chief Investigator (CI)	1	14 July 2016
Summary CV for student		14 July 2016
Summary CV for supervisor (student research)	1	01 June 2016
Validated questionnaire [Psychosis Screening Questionnaire (PSQ)]		
Validated questionnaire [Adverse Childhood Experience (ACE) Questionnaire]		
Validated questionnaire [Patient Health Questionnaire (PHQ - 9)]		
Validated questionnaire [Self-Concept Clarity Scale (SCCS)]		
Validated questionnaire [Generalised Anxiety Disorder Assessment (GAD- 7)]		

Membership of the Committee

The members of the Committee who were present at the meeting are listed on the attached sheet

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

16/NW/0590 Please quote this number on all correspondence

Yours sincerely

Dr Lorraine Lighton (Chair)
Chair

Email: nrescommittee.northwest-gmwest@nhs.net

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments.*

Copy to: [redacted]

Appendix 4-M: NHS REC Favourable Opinion

Health Research Authority

North West - Greater Manchester West Research Ethics Committee

Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

27 September 2016

Miss Laura J. Binsale
Trainee Clinical Psychologist
Lancashire Care Foundation Trust
Faculty of Health and Medicine, Lancaster University
Furness Building
Lancaster
LA1 4YG

Dear Miss Binsale

Study title:	**The role of self-concept clarity in the relationship between childhood trauma and the onset and development of psychosis, depression and anxiety.**
REC reference:	**16/NW/0590**
IRAS project ID:	**207548**

Thank you for your letter of 23/09/2016, responding to the Committee's request for further information on the above research and submitting revised documentation.

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

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

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Copies of advertisement materials for research participants [Leaflet]	2	01 September 2016
Copies of advertisement materials for research participants [Poster]	2	01 September 2016
Covering letter on headed paper		14 July 2016
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance]		20 July 2015
IRAS Application Form [IRAS_Form_20072016]		20 July 2016
IRAS Application Form XML file [IRAS_Form_20072016]		20 July 2016
IRAS Checklist XML [Checklist_21072016]		21 July 2016
IRAS Checklist XML [Checklist_23092016]		23 September 2016
IRAS Checklist XML [Checklist_23092016]		23 September 2016
Letter from sponsor		16 June 2016
Non-validated questionnaire	2	14 July 2016
Other [Liability Insurance]		01 August 2015
Other [Liability Insurance (2)]		13 August 2015
Other [Supporting Letter Prof. Sellwood]		22 September 2016
Other [NHS REC Review Meeting Response]		22 September 2016
Other [Reference List Childhood Trauma and Online Recruitment]	1	24 August 2016
Other [Study Debrief]	3	24 August 2016
Participant consent form	3	14 June 2016
Participant information sheet (PIS)	4	24 August 2016
Research protocol or project proposal	3	24 August 2016
Summary CV for Chief Investigator (CI)	1	14 July 2016
Summary CV for student		14 July 2016
Summary CV for supervisor (student research)	1	01 June 2016
Validated questionnaire [Psychosis Screening Questionnaire (PSQ)]		
Validated questionnaire [Adverse Childhood Experience (ACE) Questionnaire]		
Validated questionnaire [Patient Health Questionnaire (PHQ - 9)]		
Validated questionnaire [Self-Concept Clarity Scale (SCCS)]		
Validated questionnaire [Generalised Anxiety Disorder Assessment (GAD- 7)]		

Confirmation of ethical opinion

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

Conditions of the favourable opinion

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

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at http://www.rdforum.nhs.uk.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:
http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

16/NW/0590	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

Dr Lorraine Lighton (Chair)
Chair

Email:nrescommittee.northwest-gmwest@nhs.net

Enclosures: "After ethical review – guidance for researchers" *[SL-AR2]*

Copy to: [redacted]

Appendix 4-M: HRA Approval

Miss Laura J. Binsale
Trainee Clinical Psychologist
Lancashire Care Foundation Trust
Faculty of Health and Medicine, Lancaster University
Furness Building
Lancaster
LA1 4YG

Email: hra.approval@nhs.net

31 October 2016

Dear Miss Binsale

Letter of HRA Approval

Study title:	**The role of self-concept clarity in the relationship between childhood trauma and the onset and development of psychosis, depression and anxiety.**
IRAS project ID:	**207548**
REC reference:	**16/NW/0590**
Sponsor	**Lancaster University**

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. **Please read *Appendix B* carefully**, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document *"After Ethical Review – guidance for sponsors and investigators",* issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the HRA website, and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the HRA website.

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please email the HRA at hra.approval@nhs.net. Additionally, one of our staff would be happy to call and discuss your experience of HRA Approval.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

Your IRAS project ID is **207548**. Please quote this on all correspondence.

Yours sincerely

Michael Pate

Assessor

Email: hra.approval@nhs.net

Copy to: [redacted]

Appendix 4-K: R&D Approval

Dear Miss Binsale,

Confirmation of capacity and capability at [redacted]

Trust Ref : 2016/27
Chief Investigator : Miss Laura J. Binsale
Full title : The role of self-concept clarity in the relationship between childhood trauma and the onset and development of psychosis, depression and anxiety.
IRAS : 207548
REC ref: : 16/NW/0590
Ethical approval : 27th September 2016
HRA approval : 31st October, 2016
Attachment : Schedule of Events and agreed Statement of Activities

This email confirms that [redacted] has the capacity and capability to deliver the above study in high and medium secure only.

This support is subject to the research team adhering to all statements in the IRAS application. In order to securely protect participant information and comply with Data Protection Act legislation it is vital that any personal identifiable information is held as per IRAS application. Dropbox accounts should never be used to store personal information as they do not provide adequate security and are hosted outside the European Union. Any potential data breach must be reported immediately to the Trust. If you are unsure about using, storing or sharing information please contact the R&D team in the first instance on [redacted] for advice.

We agree to start this study on 9th January 2017.

Please send an email to [redacted] to confirm the date of your first recruit or if you have any concerns about recruiting your first [redacted] will also contact you regularly to monitor your recruitment

We look forward to working with you to successfully deliver this study.

If you wish to discuss further, please do not hesitate to contact [redacted].

Kind regards,

[redacted]