THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g. PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated.
A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.
This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author.
The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author.
When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

Multiple Adverse Childhood Experiences (ACEs) and experience of shame in adults:

A systematic review of the relationship between multiple ACEs and shame and an empirical study of the associations between ACEs, shame, and proneness to psychosis

Alice Marten

Doctorate in Clinical Psychology

The University of Edinburgh

May 2022

Acknowledgements

Firstly, I would like to thank each and every participant who took part in the study along with the individual charities and forums which helped to advertise the study. I would like to extend my thanks to my supervisors Helen and Angus for all your expert guidance and support throughout. Additionally, thank you to Rowena Stewart for all your great advice and knowledge on systematic reviews.

I would like to give a special thanks to Claire as the co-reviewer for my systematic review, I appreciate all the time and effort you gave to this. Though don't think this settles your debt.

To all my family near and far, who have always shown an interest in what I am doing. To my Mom and Dad, for your continued support in getting me to this stage of the journey from helping me move from city to city to the endless proof reading (I promise this is my last one). To my sister Ruby, the other half of our joint mind, we are one step closer to being a pair of Dr Martens. To my brother Benjamin, who has never failed to remind me that he is bigger and stronger than me, well I believe it is you that has the catching up to do now.

I would especially like to thank my fellow trainees, what a rollercoaster it has been, but I am so glad to have shared it with you. I wish you all the best and know that you're all going to make great psychologists. To those 'Gals who Rock' who have kept me grounded by helping me do the thing I love and for not getting annoyed at me when I'm grumpy I can't flash a 7a. Finally, a big thanks to all my friends who have been there for me throughout, I will reply to your messages now.

Lay Summary

There is a vast amount of literature which suggests that exposure to negative childhood experiences can contribute towards poor outcomes in adulthood. Recent research has proposed that the more negative experiences an individual goes through in childhood the greater the impact this will have on outcomes later in life. It has been argued that the quantity of experiences is more influential than the type of experience.

One type of outcome that can be influenced by negative experiences in childhood is feelings of shame in adulthood. Research has suggested that exposure to multiple negative childhood experiences can lead to greater feelings of shame in adults. There are two types of shame; Internal shame develops inside of the self and involves a negative evaluation and self-criticism of oneself, whereas external shame involves an unpleasant awareness of negative evaluation from others and develops outside of the self. This thesis in chapter one initially reviews and evaluates the existing research investigating the relationship between multiple negative childhood experiences and later feelings of shame taking into account the type of shame.

Another type of outcome that can be influenced by childhood experiences is the development of psychosis and psychotic symptoms. However, the reasons why multiple negative childhood experiences may lead to the development of psychosis are less understood. One mechanism which may help to explain this is shame. The development of shame is suggested to be greatly impacted by negative experiences in childhood and proposed to contribute towards the development of mental illness, including psychosis. However, no research has specifically investigated shame in this relationship.

Within psychosis literature, there is a growing consensus that psychosis and psychotic symptoms, lie on a continuum, with less severe psychotic-like experiences being commonly found within the general population. Past research of non-clinical populations has reported evidence of proneness to

psychosis and psychotic symptoms. This thesis also examines the relationships between negative experiences in childhood, shame, and proneness to psychosis and psychotic symptoms. Furthermore, it explores whether shame can be used to help explain the development of psychosis after negative childhood experiences.

There are several anticipated benefits to this research. Firstly, investigating non-clinical populations can identify early onset and early intervention of mental health problems, including psychosis. This could help public health services by preventing more severe mental health problems, including psychosis, and intensive treatments. Furthermore, by understanding what protects individuals from developing feelings of shame can be used to inform treatment methods to help reduce experiences of shame and mental health problems, including psychosis. For instance, with a compassion focused approach (Gilbert, 2014) to help reduce negative symptoms and improve mental wellbeing.

Table of Contents

Full Thesis Abstract 1

Chapter 1: The cumulative effect of adverse childhood experiences (ACEs) and shame in adults: A systematic review 3

Abstract 4

Introduction 5

Adverse Childhood Experiences (ACEs) 5

Shame 8

ACEs and Shame 10

Present Study 11

Methodology 12

Search Strategy 12

Study Inclusion 12

Study Selection 13

Data Extraction 13

Quality Criteria 14

Results 15

Systematic Search 15

Study Characteristics 15

Outcome Measures 23

Methodological Quality 23

Narrative Synthesis of Results and Key Findings 25

Studies using ACEs Questionnaire 25

Studies using CTQ 25

Studies using CATS 26

Internal and External Shame 26

Discussion 27

Primary Aim 27

Secondary Aim 28

Methodological Factors and Limitations 29

References 35

Chapter 2: An exploration of the relationships between the cumulative effect of Adverse Childhood Experiences (ACEs), shame, and proneness to psychosis within an adult community sample 47

Abstract 48

Introduction 49
Adverse Childhood Experiences 49
Psychosis 50
Shame and Psychosis 53
Present Study 57
Methodology 59
Design 59
Participants 59
Measures 59
Procedure 63
Ethical Considerations 64
Statistical Analyses 64
Sample Size and Power Calculations 64
Missing Data 65
Data Analysis 65
Results 67
Descriptive Statistics 67
Correlational Analysis 67
Primary Regression Analysis 68
Secondary Regression Analysis 70
Primary Mediation Analysis 72
Psychosis Proneness 72
Secondary Mediation Analysis 74
Hallucination Proneness 74
Paranoia Proneness 75
Thought Disorder Proneness 75
Negative Symptom Proneness 76
Post Hoc Analysis 77
Discussion 79
Hypothesis 1 79
Hypothesis 2 81
Hypothesis 3 81
Limitations 83
Implications 87
References 89

Full Thesis References ... 105
Appendix A – Journal guidelines for Clinical Psychology and Psychotherapy ... 125
Appendix B - Search terms ... 135
Appendix C – Data Extraction Form ... 136
Appendix D – Methodological Criteria Checklist ... 138
Appendix E - Demographic Questionnaire ... 141
Appendix F - Philadelphia Adverse Childhood Experiences (PHL ACEs) Scoring ... 142
Appendix G – Participant information sheet ... 144
Appendix H – Participation consent form ... 148
Appendix I – Participation debrief sheet ... 149
Appendix J – Ethics Approval ... 151
Appendix K – Ethics Application ... 152

Word Count: 20,731

Full Thesis Abstract

Background: Research has suggested that there is a dose-response relationship between Adverse Childhood Experiences (ACEs) and poor outcomes in adulthood, including psychopathology. Recently, research has focused on investigating mediating variables which could help explain the relationship between psychopathology and the cumulative effect of ACEs or 'multiple ACEs'.. Despite strong links between multiple ACEs, experiences of shame and psychopathology, little research has investigated shame as a mediating variable.

Objectives: The systematic review set out to identify and synthesize studies which investigate the relationship between multiple ACEs and experiences of shame in adulthood. The empirical project set out to investigate the relationships between multiple ACEs, social emotions and proneness to psychosis and psychotic symptoms, specifically assessing whether internal shame mediates the relationship between ACEs and proneness to psychosis and psychotic symptoms.

Method: For the systematic review, multiple databases were methodically searched to identify studies which investigated the relationship between multiple ACEs and shame, within both clinical and non-clinical populations. For the empirical project, participants were recruited online through various methods and completed questionnaires asking questions regarding their experiences of childhood adversities, psychosis proneness, proneness to psychotic symptoms and social emotions.

Results: Results of the systematic review found that from 13 studies with a total of 2967 participants, all studies supported a relationship between multiple ACEs and experiences of shame in adults. However, no clear comparison was found between internal and external shame. For the empirical project analysis revealed that there were positive correlations between all variables including ACEs, social emotions and proneness to psychosis and psychotic symptoms. Prediction analysis revealed that ACEs and internal shame significantly predicted psychosis proneness and proneness to psychotic symptoms, however other social emotions did not when added to the model.

Finally, mediation analysis showed that internal shame significantly mediated the relationship between ACEs and proneness to psychosis and psychotic symptoms.

Conclusions: Taken together, the results highlight the importance of assessing shame and its impact within individuals with multiple ACEs and psychopathology, including psychosis. Furthermore, it can help to inform treatment methods to help reduce experiences of shame and psychopathology, including psychosis.

Chapter 1: The cumulative effect of adverse childhood experiences (ACEs) and shame in adults: A systematic review

Running title: Multiple ACEs and Shame: A Systematic review

Written in accordance with the author guidelines for the Clinical Psychology and Psychotherapy journal (see Appendix A). Tables and figures are included in text body for the purpose of the DClin Submission as per University of Edinburgh guidance.

The author declares no conflicts of interest.

Word Count: 8,988

Abstract

Objectives: Recent research has suggested that there is a dose-response relationship between Adverse Childhood Experiences (ACEs) and poor outcomes in adulthood. Despite many studies investigating the link between ACEs and experiences of shame in adulthood, the relationship between shame and the cumulative effect of ACEs or 'multiple ACEs' has not been empirically reviewed.

Methods: MEDLINE, APA PsycInfo, Embase, CINAHLPlus, ERIC and SCOPUS databases were systematically searched to identify studies to be included within the review. Inclusion criteria consisted of studies which investigated the relationship between multiple ACEs and shame within adult clinical and non-clinical populations. Studies without validated measures of multiple ACEs and shame were excluded, along with measures investigating only specific components of ACEs and shame. All observational, quasi-experimental and controlled studies were included that were peer-reviewed articles and doctoral theses. Included studies were methodologically assessed against a quality criterion created for the current review and were assessed using a narrative synthesis of results.

Results: 13 studies with a total of 2967 participants met the inclusion criteria. All studies supported a relationship between multiple ACEs and experiences of shame in adults. No clear comparison was found between internal and external shame.

Discussion: Main limitations of the review included the definitions of ACEs within the past literature, with no clear and consistent definition. The relationship between ACEs and shame was consistent across all included studies. However, as the majority of the studies utilised a cross-sectional design, it is difficult to determine causality within the relationship. The findings of this review suggest several implications for clinical work.

Key words: Adverse Childhood Experiences, Childhood Adversities, Shame, Internal Shame, External Shame, Systematic review

Introduction

Adverse Childhood Experiences (ACEs)

ACEs occur during the first 18 years of life and are defined as traumatic or stressful experiences which could have a lasting impact on health and wellbeing (Kajeepeta et al., 2014). ACEs include direct harm to a child, for instance through neglect or abuse, along with indirect experiences through their living environment, for instance substance abuse, parental conflict or mental illness (Hughes et al., 2017). ACEs are commonly experienced within the population. Studies have reported two thirds of individuals experiencing at least one ACE and around 9-14% experiencing more than four ACEs (Boullier, 2018; Kessler et al., 2010).

Research is increasingly identifying the impact that our early life experiences can have on our health and wellbeing (McEwen, 2003). The original ACEs study by CDC-Kaiser (Felitti et al., 1998) was the first to investigate ACEs in relation to health outcomes, r reporting that the greater the quantity of ACEs the greater risk of adverse health outcomes later in life. Several recent systematic reviews have reported similar findings (e.g., Hughes et al., 2017; Panagou & MacBeth, 2022). Growing research into the effects of ACEs has recognised the risk they pose on health outcomes and the importance of early intervention and prevention (Boullier, 2018). Those who have experiences of ACEs, compared to those who do not, tend to go on to develop more mental and physical health problems in adulthood and have higher risk of premature mortality (Anda et al., 2006; Bellis et al., 2015).

Within the relationship between ACEs and health outcome, one of the most notable links has been between ACEs and mental illness within adulthood (e.g., Afifi et al., 2008; Bergen et al., 2004; Edwards et al., 2003; Kessler et al., 2010; MacMillan et al., 2001; Polusny & Follette, 1995). This includes disorders with both internalising domains, for instance depression and anxiety, and externalizing domains, for instance substance misuse and personality disorder, (Dube et al., 2006; Merrick et al., 2017; Sareen et al., 2013; Toth et al., 2002). Furthermore, links have also been made

between ACEs and other personality disorders, eating disorders, psychotic disorders, sleep problems, suicidality, PTSD, and OCD (Sheffler et al., 2020).

ACEs are hypothesised to increase the risk of mental illness as they have been found to have a significant effect on an individual's perception of themselves within their environment and can result in negative self-schemas developing. Consequently, this may affect the individual's ability to recover from stress (Segal, 1988) and result in more negative interpretations of stressful life events (Liu et al., 2013) and more negative self-schemas (Gibb & Abela, 2008; Sachs-Ericsson et al., 2006). This can lead to several negative consequences, including but not limited to the increased risk of mental illness (Sheffler et al., 2020).

Many studies have increasingly investigated the impact of early life experiences on later life (McEwen, 2003). Despite this however, there is some inconsistencies in the literature of the definition and measurement of childhood adversities. Firstly, there is no distinct definition of ACEs and the term is often used interchangeably with early trauma, which by definition is distinct from ACEs. For instance, ACEs is defined as the exposure of a threatening event in childhood, whereas trauma is known as the response to the exposure (Bartlett & Sacks, 2019). Therefore, despite commonly co-occurring, not everyone who experience one will experience the other and consequently using the terms interchangeably makes it difficult to interpret and discuss implications of the research. This has resulted in ACEs being measured differently across studies and the inclusion of different types of adversities amongst measures (McLaughlin, 2016; Panagou & MacBeth, 2022). Recent research identified that 127 different ACEs questionnaires have been used in studies investigating ACEs (Aafjes-van Doorn et al., 2020). This lack of clarity is problematic and raises limitations when comparing literature on ACEs (McLaughlin, 2016).

Furthermore, the measurement of the cumulative effect of ACEs is not well defined either. Some research chooses to focus purely on specific types of ACEs e.g. sexual abuse, physical neglect whereas others focus of the number of ACEs that an individual has experienced and their cumulative

effects. The latter is referred to as ‘multiple ACEs’ in this review henceforth. The measurement of solely specific ACEs has been deemed problematic as it does not give a complete assessment of the breadth of childhood adversities when investigating the relationship between ACEs and shame (Hughes et al., 2017). For instance, recent research has suggested that there is a dose-response relationship between ACEs and poor outcomes in adulthood, suggesting that ACEs are intercorrelated (See Dong et al., 2004 for review). It has been argued that researching only specific ACEs is likely to overlook the impact of co-occurring adversities whereas understanding the impact of multiple ACEs is essential in providing insight into its long-term effects. Consequently, the investigation of solely specific adversities may lead to a number of limitations in research. For instance, within some environments it is common for adversities such as substance abuse, domestic violence and criminal activity to co-occur with a variety of forms of child abuse. When measuring specific adversities in these circumstances this could cause the incorrect interpretation that the presence of one adversity is the same across all conditions and ignores the influence other adversities may have (Caron & Rutter, 1991). Consequently, long term effects of other adversities might be wrongly attributed to the single form of abuse and the impact of multiple ACEs would be overlooked (Anda et al., 1999; Felitti et al., 1998).

Despite the correlation between ACEs and psychopathology, the relationship does not show complete causality as not everyone who has experienced ACEs goes on to develop mental health difficulties in adulthood (Aafjes-van Doorn, 2020). This suggests that individual differences in the susceptibility to ACEs may play a key role in determining mental health outcomes (Belsky & Pluess, 2009; Caspi et al., 2014). As originally outlined by the diathesis-stress model (Rosenthal, 1963) in an attempt to explain why individuals may respond differently to the same adverse experiences and hypothesizes that individuals have varying degrees of vulnerabilities to developing mental health difficulties. However, the specific mechanisms which underlie the relationship between ACEs and psychopathology is less researched and remains a topic of debate (Aafjes-van Doorn, 2020).

Shame

One mechanism which could explain this is shame. Shame is an unconscious emotion which encompasses a negative evaluation of self (Parsa, 2018). It is argued that this unpleasant emotion drives individuals to deny or conceal any perceived wrongdoing (Shein, 2018). Within the literature surrounding shame there is a clear consensus that there are two distinct types of shame: internal and external shame (Gilbert, 1998). Internal shame develops inside of the self and encompasses a negative evaluation and self-criticism of oneself, whereas external shame encompasses an unpleasant awareness of negative evaluation from others and develops outside of the self (Kim et al., 2011).

More specific concepts of shame have arisen, and measures of shame have been discussed within more recent research. These include, but are not limited to, shame around having a mental illness or abuse related shame (Birchwood et al., 2012; Feiring et al., 2009). Within these constructs shame is only measured in relation to these aspects and some more general characteristics of shame relating to one's view of oneself are not included. Similarly, research has also investigated more specific aspects of shame in relation to one's view of oneself, for instance, body shame (McKinley, & Hyde, 1996). In parallel with the more specific concepts of shame discussed, within these measures shame is only evaluated in relation to these specific constructs and more general characteristics of shame are excluded.

Furthermore, shame can draw many similarities with other self-conscious emotions, such as guilt and self-stigma. However, there are important distinctions between these variables. For instance, although both shame and guilt involve negative affect the focus differs. In guilt, the focus encompasses a specific action or failure to act, often evoking regret or remorse, whereas shame involves the entire self (Wojcik et al., 2019). Differences also arise when comparing shame with self-stigma. Self-stigma involves the internalization of a socially devalued status, whereas although shame is a main component of stigma, shame is more specific, whereas self-stigma encompasses a

broader definition (Luoma & Platt, 2015). Additionally, shame may occur through means other than societal devaluation and may in this definition be distinct from self-stigma (Tangney et al., 2007).

According to attributional theories of shame, shame is argued to arise as a result of two conditions, firstly, there is an event or outcome in which the individual fails to meet their own internalised standards, secondly, attributions of the event are made which are internal and global (Lewis 1971, 1992). For instance, if an individual who aspired to be a good student failed an exam this could result in blaming self for that failure on low intelligence (Tangney & Dearing, 2002; Tangney et al. 2007; Tracy & Robins, 2004). By this definition shame involves a failure to live up to one's own internalised standards and attributing failure to oneself negatively and globally. (Lewis, 1992, Tangney et al., 2007).

Repeated experiences of shame are suggested to influence unhelpful thinking styles which over time may affect how an individual acts and feels and consequently results in poorer mental health outcomes (Coates & Messman-Moore, 2014). For instance, experiences of shame may cause an individual to be apprehensive about actual or anticipated social situations. In turn this may cause an individual to avoid situations, withdraw or act out (Bennett et al., 2005; Gold et al., 2011; Webb et al., 2007). Empirical research has reported strong links between shame and psychopathology (see Candea & Szentagotai, 2013 for review).

Importantly, understanding more about how shame may underpin psychopathology could have implications for treatment and interventions within a clinical mental health population and may play an important role as a mechanism of change within psychotherapy (see Candea & Szentagotai, 2013). More recent psychological interventions, for instance Compassion Focus Therapy (CFT) have focused on reducing feelings of shame in order to increase mental wellbeing (Gilbert, 2014). A recent review (Craig et al., 2020) reported that CFT is more effective in treating clinical populations than no treatment and shows great potential in treating conditions which are underpinned by experiences of shame.

It is also important to continue investigating the effects of shame within non-clinical populations. As previously discussed above, not all individuals who have experienced ACEs will go on to experience poor mental health outcomes. This is the same for shame. As a result, it is important to determine why this might be and what protects these individuals from developing feelings of shame. These resilience factors can be used to help inform treatment methods to help reduce experiences of shame and psychopathology (Stainton et al., 2019). Furthermore, continuing to investigate non-clinical populations can identify early onset and early intervention of psychopathology, this could further impact on public health by preventing more severe psychopathological presentation requiring highly intensive treatment (Conus et al., 2014).

ACEs and Shame

Along with significant associations found between shame and adult psychopathology, several empirical studies have found a positive relationship linking ACEs and shame (e.g. Blasini-Mendez, 2020; Braun et al., 2021; Fowke et al., 2012; Healy et al., 2021; Hunziker, 2013; McGinniss, 1997; Simpson et al., 2020; Stricklen, 2019; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b; Van Buren & Meehan, 2015; Wojcik et al., 2019). However, this relationship is yet to be empirically reviewed. Shame can commonly arise following experiences of a traumatic or difficult life event, which if left unresolved could hinder recovery (Van Vliet, 2010). This can be viewed in relation to processes set out in attributional theories, whereby shame arises through internal negative self-attribution (Lewis 1971, 1992). These can develop as childhood adversities can often have a dehumanising and humiliating effect leaving individuals feeling stigmatised, flawed, different and alone (Feiring et al., 1996; Lewis, 1992; Lewis, 1998; Rahm et al., 2013). This may lead individuals to believe that they deserve what is happening to them or that there is something wrong with them (Loader, 1998). This can be further enhanced as abusers will often reinforce feelings of shame by telling their victims they are bad or deserving of this (Tangney et al., 2007).

Present Study

Most research conducted relating to ACEs and shame has investigated specific forms of adversities, e.g. sexual abuse, physical abuse, emotional abuse, and their relationship with shame (see MacGinley & Mowll, 2019). However, there is limited research looking into the relationship of multiple ACEs and shame. Consequently, the aim of the present study was to systematically review existing research on the relationship between multiple ACEs and shame in both clinical and non-clinical populations. Within the current review multiple ACEs refers to the measurement of the number of ACEs whereby some individuals may not have experienced any ACEs. The primary aim of the review is to examine the direct relationship between multiple ACEs and shame and hypothesizes that ACEs would be positively related to shame. The secondary aim of the review included exploring the relationship between ACEs and internal and external shame. In addition to this the methodological quality of the included studies will be critically reviewed.

Methodology

Search Strategy

Systematic searches were commenced using the following online databases: Ovid (including Ovid MEDLINE(R) and In-Process, In-Data-Review & Other Non-Indexed Citations 1946 to October 14, 2021; APA PsycInfo 1806 to October Week 2 2021, Embase Classic+Embase 1947 to 2021 October 14); EBSCOHost (including CINAHLPlus and ERIC) and SCOPUS. All data bases were searched up to the date of the search (14th October 2021). Additionally, reference lists of extracted articles were examined.

The literature search was comprised of variations of the following terms (sham* AND (child* adj3 (advers* OR negative experience* OR negative event* OR maltreat* OR mistreat* OR abuse* OR assault* OR harass* OR exploit* OR trauma* OR neglect*)), see appendix B for full search terms.

A protocol was registered with the International Prospective Register of Systematic Reviews (PROSPERO) and followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (registration number CRD42021249048). Any changes to the review were updated on PROSPERO.

Study Inclusion

Although there has been a substantial body of research into negative childhood experiences and later experiences of shame in adulthood, there has been little research specifically on multiple ACEs and their impact on shame. The inclusion and exclusion criteria for studies is represented in table 1 and comprised of all observational, quasi-experimental and controlled studies. Doctoral theses were included in the current review despite not being peer reviewed due to utilising rigorous methodology and undergoing high levels of scrutiny.

Table 1: Showing Inclusion and Exclusion criteria for study selection process

	Inclusion	**Exclusion**
Patient population	Aged 18 + from clinical and non-clinical populations	Under 18
Measures	A validated measure of multiple ACEs e.g. CTQ and ACEs Questionnaire	Specific adversity measure only
		No total score of multiple ACEs e.g. subscales only
	A validated measure of any type of shame e.g. internal, external, proneness	Shame/Self-stigma measures, e.g. shame around having a mental health illness
		Specific measures of shame e.g. abuse related shame, body shame
Study Design	Quantitative Studies	Qualitative studies
	All published controlled, quasiexperimental and observational studies	Single case studies
Study Characteristics	Peer-reviewed articles	Studies not published within the public domain
	Doctorate Thesis	
	Full text available in English	

Study Selection

Based on the inclusion and exclusion criteria set out above, studies were systematically screened to determine selection for the current review. First duplicate articles were removed, followed by titles and abstracts screening and the remaining studies having full text screened. A second reviewer reviewed 20 percent of the articles at each stage to reduce the risk of any biases or errors. Any disagreements were resolved through discussion until agreement was reached.

Data Extraction

Data was extracted using a form created by the author and included information regarding, patient characteristics, outcome measures and variables, analysis, and results/conclusions (See Appendix C). Due to the vast variation within the data extracted, specifically, populations and measures used across studies it was deemed not appropriate to conduct a meta-analysis which could have resulted in the obscuring of genuine discrepancies of effects (Higgins et al., 2019).

Quality Criteria

The final studies identified for inclusion within this review comprised of all observational studies. Many previously developed assessment tools are aimed at evaluating randomised control trials (RCTs – See Scottish Intercollegiate Guidelines Network (SIGN, 2014) and the Centre for Reviews and Dissemination (CRD, 2009)). Some checklists are developed to specifically look at observational studies, for instance, RTI Item Bank on Risk of Bias and Precision of Observational Studies (Agency for Healthcare Research and Quality (AHRQ), 2012). However, this tool mainly captures response to interventions or exposures as part of the experimental design, whereas within the current review, exposure to ACEs within included studies was measured through recollection. Furthermore, the tools were deemed to not capture all aspects of studies included within the current review, such as specific definitions and measures in relation to ACEs and shame. As a result, a quality assessment tool was developed to assess the methodological quality of the included studies. This was done following recommendations set out by the Strengthening Reporting of Observational Studies in Epidemiology (STROBE; Vandenbroucke et al., 2007; vonElm et al., 2008) initiative to ensure good quality reporting of observational studies along with SIGN (2008), AHRQ (2012) and CRD (2009) guidance on systematic literature reviews.

The final checklist (see Appendix D) incorporated 12 criteria points covering five areas: "Background/Aims" (3 items), "Sample and Selection" (3 items), "Design and Method" (3 items), "Statistical Analysis" (1 item) and "Conclusions" (2 items). Each item was given a score corresponding to the quality represented within the study: 0 = Not applicable/Not reported/Weak, 1 = Moderate, 2 = Strong, with a total score out of 24. Total scores were converted in percentages and rated Weak < 50%, Moderate 50 -75%, Strong > 75%. All the included articles were reviewed independently by a second reviewer to reduce the risk of any biases or errors. Inter-rater reliability was calculated and at first revealed moderate agreement (κ=0.539). Disagreements were reviewed, discussed and amended together with the second reviewer and inter-rater reliability was recalculated and found to be in almost perfect agreement (κ=0.853).

Results

Systematic Search

Databases were searched and reference lists of the included studies were reviewed to identify appropriate studies for the systematic review (see figure 1 for details).

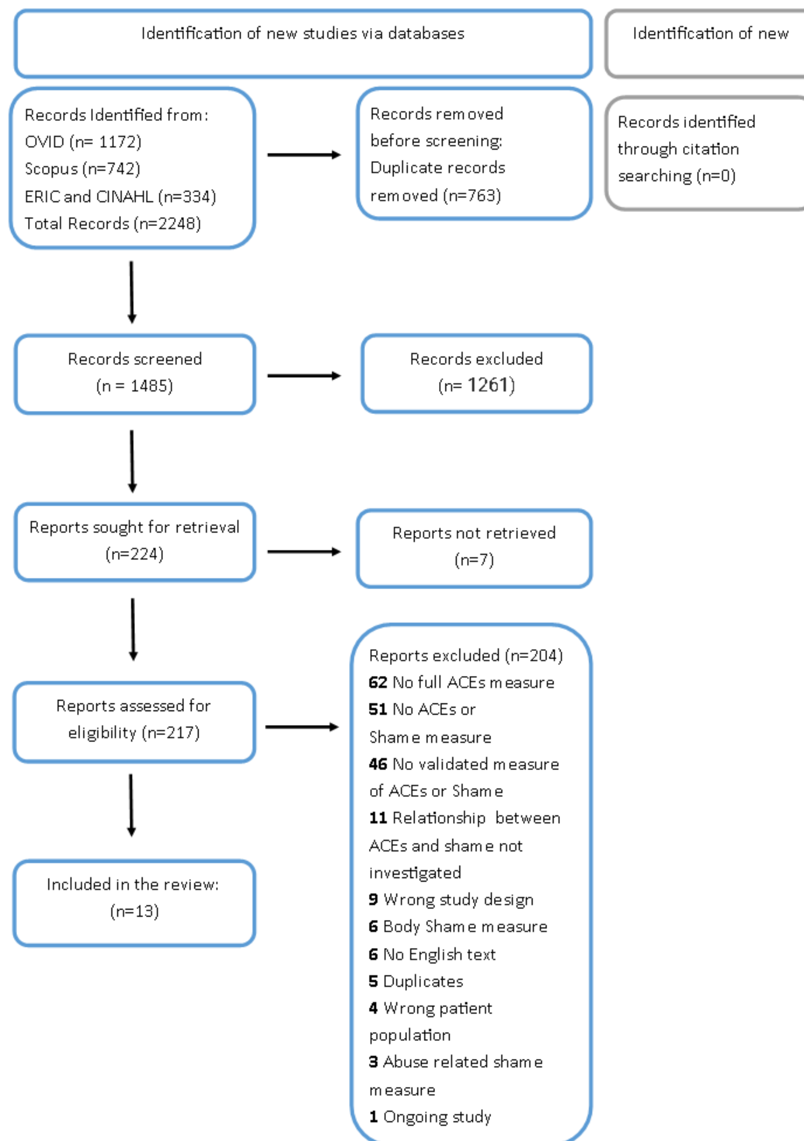

Figure 1: Showing adapted PRISMA of systematic search process – Figure above adapted

Study Characteristics

All studies included within the systematic review are observational studies; with 12 cross sectional (Blasini-Mendez, 2020; Braun et al., 2021; Fowke et al., 2012; Healy et al., 2021; Hunziker,

2013; McGinniss, 1997; Simpson et al., 2020; Stricklen, 2019; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b; Van Buren & Meehan, 2015; Wojcik et al., 2019) and one using a posttest-only research design (Born, 1998). Year of publication ranged from 1997 to 2021. All studies included participants over the age of 18 with oldest reported participant age being 87 across all the studies, with only one study reporting a cut off for age (30; Hunziker, 2013). Within the included studies, 10 of the publications investigated community samples (Blasini-Mendez, 2020; Born, 1998; Healy et al., 2021; Hunziker, 2013; McGinniss, 1997; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b; Van Buren & Meehan, 2015; Wojcik et al., 2019). Only three publications included clinical samples, with one being a psychosis sample (Simpson et al., 2020) and two being physical health samples (Braun et al., 2021; Stricklen, 2019). Only one study included both clinical and non-clinical populations (Fowke et al., 2012). However, the relationship between multiple ACEs and shame was only investigated within the clinical population. Participants were recruited from various settings including from NHS, support groups, community samples, and university samples. Sample sizes ranged across studies from 58 to 612 participants, with a total of 2967 participants in all the studies. Most of the studies included majority female populations with 11 studies reporting between 60-83% female (Braun et al., 2021; Fowke et al., 2012; Healy et al., 2021; Hunziker, 2013; McGinniss, 1997; Simpson et al., 2020; Stricklen, 2019; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b; Van Buren & Meehan, 2015; Wojcik et al., 2019), one study only included male participants (Born, 1998) and one study did not report gender characteristics (Blasini-Mendez, 2020). A variety of statistical analyses were used to assess the relationship between multiple ACEs and shame. Twelve studies used correlational analysis (Blasini-Mendez, 2020; Born, 1998; Braun et al., 2021; Fowke et al., 2012; Healy et al., 2021; Hunziker, 2013; McGinniss, 1997; Simpson et al., 2020; Stricklen, 2019; Thomson & Jaque, 2018a ; Van Buren & Meehan, 2015; Wojcik et al., 2019), with one study reporting regression analysis (Hunziker,2013) and two studies reporting MANCOVAs (Thomson & Jaque, 2018a; Thomson & Jaque,2018b – See table 2 and 3 for study characteristics).

Table 2: Showing characteristics of studies included within the review

Study	**Age**	**Gender**	**Population**	**Clinical Sample**	**Measure of ACEs**	**Measure of Shame**
Blasini-Mendez (2020)	Ages: 18+ mean n/r	Gender distribution n/r	Community Sample in Puerto Rico (N=189)	No	ACEs Q	OAS
Born (1998)	Ages 18-74 Grouped by sexual orientation Heterosexual (n=32) Mean age: 44.72 Gay homosexual (n=32) Mean age: 38.06 Non-gay homosexual (n=28) Mean age 40.39	Male	Christian Community sample (n=92)	No	CATS	ISS
Braun et al. (2021)	Ages 18+ Mean age: 42.28	Gender: 82.1% female	Individuals seeking bariatric surgery (n= 229)	Yes	ACEs Q	ISS
Fowke et al. (2012)	BD group (n=35) Mean age: 45.57 Gender: 62.86% female Control group (n=35) Mean age: 46.20	BD group Gender: 77% female Control group Gender: 62.86% female	BD NHS outpatients and/or local members of a national BD support groups and control participants from community (n=70) Diagnosis: Schizophrenia (n=9, 13%) Schizoaffective disorder (n=6, 9%) Depression with psychotic features (n=12, 17%) Delusional disorder (n=1, 1%) Bipolar with psychotic features (n=10, 14%) Brief psychotic disorder (n=3, 4%) Other (psychosis-related) (n=30, 42%)	Yes – BD Group No - Control group	CTQ	ISS

Healy et al. (2021)	Age range 18+ Mean age: 30.49	Gender: 60.2% female 9.6% transgender	General population (n=167)	No	CTQ	ISS
Hunziker (2013)	Age range: 18-30 Mean age: n/r	Gender: 62.09% female	University students (n=612)	No	CATS	TOSCA-3
McGinniss (1997)	Age range: 18-40 Mean Age: 19.84	Gender: 73.91% female	Undergraduate students from Bay area, California (n=64)	No	CATS	TOSCA-3
Simpson et al. (2020)	Age range: 18-74 Mean age:37.64		Individuals with psychosis/psychotic experiences (n=78)	Yes	CATS	OAS
Stricklen (2019)	Age range: n/r Mean age: 51.86	Gender: 79% female	Bariatric surgery candidates (n=58)	Yes	ACEs Q	ISS
Thomson & Jaque (2018a)	Age range: 18-59 Mean age: 23.34	Gender: 70% female	Adults in professional performing arts (n=234)	No	ACEs Q	ISS
Thomson & Jaque (2019)	Age range: 17-59 Mean age: 23.61	Gender: 66.9% females	Athletes and performing artists (n=577)	No	ACEs Q	ISS
Van Buren & Meehan (2015)	Age range: 18-43 Mean age: 20.29	Gender: 77.52% Female	Undergraduate students (n=129)	No	CTQ	TOSCA-3
Wojcik et al. (2019)	Age range: 18-87 Mean age: 26	Gender: 73.49% Female	Canadian community sample (n=249)	No	ACEs Q	PFQ-2

ACES Q = Adverse Childhood Experiences Questionnaire, CTQ = Childhood Trauma Questionnaire, CATS = Child Abuse and Trauma Scale, TOSCA-3 = Test of Self-Conscious Affect-3, PFQ-2 = Personal Feelings Questionnaire-2, ISS = Internalised Shame Scale, OAS = Other As Shamer scale

Table 3: Showing findings of relationship between multiple ACEs and shame within included studies

Study	**Design**	**Statistical Tests Used to assess relationship between multiple ACEs and shame**	**Key Findings**	**Reported association between ACEs and Shame**
Blasini-Mendez (2020)	Cross-sectional design	Pearson's R correlation	Positive relationship reported between ACES and shame	ACEs/OAS - (r=.375, p<.001)
Born (1998)	Multi-group posttest-only research design	Correlations (type not reported)	Positive relationship reported between ACEs and shame	CATS (total)/ISS – (r=.5110, p<.01)
Braun et al. (2021)	Cross-sectional design	Intercorrelations Multiple Regression Mediation	Positive relationship reported between ACEs and shame	ACEs/ISS - (r=.261, p<.001)
Fowke et al. (2012)	Cross-sectional design	Spearman's rho correlations	For BD group, significant correlations between ISS and CTQ total	CTQ total/ISS -(r= 0.62, p<0.01)
Healy et al. (2021)	Cross-sectional design	Bivariate Correlation analysis	Child maltreatment significantly correlated with internalised shame	CTQ total/ISS - (r =.18, p <.05)
Hunziker (2013)	Cross-sectional design	Regression Correlations (type not reported)	For the total sample of participants, child maltreatment, as measured by the total score of the CATS, predicted shame-proneness. Positive correlation reported between Shame and CATS	Regression – predicting shame proneness CATS total – R^2=.047, F(1,610)=30.228, p<.001, β=.217. CATS total/TOSCA – (r=.113 p<0.1)
McGinniss (1997)	Cross-sectional design	Pearson's correlations	The total scores of the measure for childhood abuse correlated with shame	CATS total/TOSCA-3 – (r=.33, p=.014)
Simpson et al. (2020)	Cross-sectional design	Spearman's correlation	Positive relationship reported between ACES and shame	CATS total/OAS – (r=.62, p<.01)
Stricklen (2019)	Cross-sectional design	Correlations (type not reported) Stepwise Regressions	Positive relationship reported between ACES and shame	ACEs/ISS – (r=.37, p<.01)
Thomson & Jaque (2018a)	Cross-sectional design	MANCOVA	Significant results were reported in the pairwise comparison analyses with shame and number of ACEs	MANCOVA Shame (no ACEs and 1–3 ACEs: p = 0.001; No ACE and ≥4 ACEs: p < 0.001)

Thomson & Jaque (2018b)	Cross-sectional retrospective study	Chi Squared MANCOVA Correlation	The high shame group had a greater distribution of ACEs (especially emotional, physical and sexual abuse, and emotional neglect). Path analyses showed that ACEs had a direct effect on shame. Positive relationship reported between ACEs and Shame	Significant differences in number of ACEs between low shame group (1.66 ± (1.98)) and high shame group (3.08 ± (2.30)), p<.001. Chi squared analysis showed significant differences with more participants within the high shame group than the low shame within the following variables: Emotional Abuse (χ(1) =39.11, p<.001), Physical Abuse (χ(1)=21.04, p<.001), Sexual Abuse (χ(1)=6.64, p<.001), Emotional Neglect (χ(1)=27.92, p<.001), Physical Neglect (χ(1)=1.42, p<.01), Domestic Violence (χ(1)=2.1, p<.01), Family Addiction (χ(1)=0.52, p<.01), Family Mental Illness (χ(1)1.45, p<.01), Family Incarceration (χ(1)=2.83, p<.01), 1 – 3 ACEs (χ(1)=0.32, p<.01) and ≥ 4 ACEs (χ(1)=12.28, p<.001). ACEs/ISS – (r=0.319 p<.001)
Van Buren & Meehan (2015)	Cross- Sectional Design	Correlations (type not reported)	Positive relationship reported between ACES and shame	CTS total/TOSCA-3 - (r=.18, p<.05)
Wojcik et al. (2019)	Cross- Sectional Design	Bivariate Correlations	Positive relationship reported between ACES and shame	ACEs/TOSCA-3 - (r= .262, p<.001)

ACES Q = Adverse Childhood Experiences Questionnaire, CTQ = Childhood Trauma Questionnaire, CATS = Child Abuse and Trauma Scale, TOSCA-3 = Test of Self-Conscious Affect-3, PFQ-2 = Personal Feelings Questionnaire-2, ISS = Internalised Shame Scale, OAS = Other As Shamer scale

Table 4: Showing characteristics of outcome measures within included studies

Name	Studies using measure within review	Measures	Scale	Items	Reliability	Validity
ACEs Measures						
ACEs Q - Felitti et al. (1998)	Blasini-Mendez, (2020); Braun et al. (2021); Stricklen, (2019); Thomson & Jaque, (2018a); Thomson & Jaque, (2018b); Wojcik et al. (2019)	Emotional, physical, and sexual abuse; emotional and physical neglect; domestic violence; household substance abuse; mental illness in the household; parental separation or divorce; and having a criminal household member.	Yes/No response	10-item	Good to excellent test–retest reliability and inter-rater reliability (Dube et al., 2003). Cronbach's α = .88 (Murphy et al., 2014).	Internal validity = .77 Felitti et al. (1998)
CTQ - Bernstein, D. P., & Fink, L. (1998)	Fowke et al. (2012); Healy et al. (2021); Van Buren & Meehan, (2015)	Emotional, physical, and sexual abuse; emotional and physical neglect.	5-point Likert scale - 1 ("Never true") to 5 ("Very often true")	28-item	Test-retest reliability ranging from .79 to .86 Internal consistency reliability coefficients ranging from of .66 to .92 (Bernstein & Fink, 1998)	Convergent validity with both therapist rating and clinician-rated interview of childhood abuse (Bernstein & Fink, 1998).
CATS - Sanders & Becker (1995)	Born, (1998); McGinniss, (1997); Hunziker, (2013); Simpson et al. (2020)	Sexual abuse, Physical abuse/Punishment, and neglect/negative home environment	5-point scale - 0 ("Never") to 4 ("Always)	38-item	The internal consistency Cronbach's alpha was .90. The test-retest reliability .89 (Sanders & Becker-Lausen, 1995).	Significant corelations with associate of childhood trauma and abuse: victimization, difficulties in interpersonal relationships, depression, and dissociation (Sanders & Becker-Lausen, 1995).

Shame Measures						
TOSCA-3 – Shame subscale - Tangney et al. (2002)	Hunziker (2013); McGinniss (1997); Van Buren & Meehan (2015)	Shame Proneness/Internal Shame		16 Item	Internal consistency α = .77 Test-retest reliability = .74 (Rusch et al, 2007)	Good construct validity with in relations to anxiety, depression, and psychosis (Rusch et al, 2007).
PFQ-2 – Shame subscale - Harder et al. (1992)	Wojcik et al. (2019)	Shame-Proneness/Internal Shame	5-point Likert scale 0 (“you never experience the feeling”) - 4 (“you experience the feeling continuously ”)	10-item	Good internal reliability α = .78. Test- retest reliability = .91 (Harder et al, 1992).	Convergent validity with correlations of other shame measure Construct validity - measure predicted social anxiety, shyness and depression (Harder et al, 1992).
ISS – Shame subscale - Cook (1994)	Born (1998); Braun et al. (2021); Fowke et al. (2012); Healy et al. (2021); Stricklen (2019); Thomson & Jaque (2018a); Thomson & Jaque (2018b)	Internal Shame	5-point Likert 0 (“Never”) - 4 (“Almost always”)	24-item	High reliability for shame subscale in both clinical and non-clinical populations (α = 0.97; Rybak & Brown, 1996).	High construct validity for shame subscale in both clinical and non-clinical populations (Rybak & Brown, 1996).
OAS - Matos et al. (2015)	Blasini-Mendez (2020); Simpson et al. (2020)	External Shame	5-point Likert scale 0 (“Never) - 4 (“Almost always”)	18-item	Internal reliability with α = .92 (Goss et al., 1994).	Significant correlations with shame measures in clinical and non-clinical populations (Gilbert, 2000).

ACES Q = Adverse Childhood Experiences Questionnaire, CTQ = Childhood Trauma Questionnaire, CATS = Child Abuse and Trauma Scale, TOSCA-3 = Test of Self-Conscious Affect-3, PFQ-2 = Personal Feelings Questionnaire-2, ISS = Internalised Shame Scale, OAS = Other As Shamer scale

Outcome Measures

Within the current review, the included articles utilised measures of internal and external shame and shame-proneness (see table 4 for measures). For measuring adversities, only outcome measures which were validated and measured multiple adversities were included within the current review (see table 4).

Methodological Quality

Methodological quality was rated for each study using the quality criteria set out above and presented in table 5. The overall quality for studies included in the review ranged from 54-83% with an overall mean of 71% suggesting moderate quality. The majority of studies (8) had strong quality, with the remaining (5) having moderate quality. No included studies were rated to have weak quality. However, studies by Blasini-Mendez (2020) and Van Buren & Meehan (2015) were on the borderline with a lot of variation in quality and many areas of weakness.

Some aspects of methodology were weak amongst most of the included studies. For instance, only Fowke et al. (2012) and Hunziker's (2013) studies included power analysis for determining sample size. Other areas, such as research aims and validity of measure, were moderate or strong by all included studies.

Finally, only studies which used validated measures of ACEs and Shame were used within the current review. However, although one study (Blasini-Mendez, 2020) used the validated measures of the ACEs Questionnaire and the OAS, these measures were translated into Spanish. Although the validity of the translated OAS measure was found to be excellent, the validity of the translated ACE measure was poor which raises questions of its utility within this study.

Table 5: Showing methodological quality ratings of included studies

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**	**Percentage**
Blasini-Mendez (2020)	2	1	2	0	1	0	2	0	1	2	1	2	14	58
Born (1998)	2	1	2	1	1	0	2	2	2	2	1	1	17	70
Braun et al. (2021)	2	1	1	2	1	0	1	2	2	2	2	2	18	75
Fowke et al. (2012)	1	1	1	2	1	2	1	2	2	2	1	2	18	75
Healy et al. (2021)	2	2	0	2	1	0	1	2	2	2	2	2	18	75
Hunziker (2013)	2	1	2	0	1	2	1	2	2	2	2	2	19	79
McGinniss (1997)	2	1	1	0	1	0	1	2	2	2	2	0	14	58
Simpson et al. (2020)	1	0	2	2	1	0	1	2	2	2	1	2	16	66
Stricklen (2019)	2	2	2	1	0	0	2	2	2	1	2	2	18	75
Thomson & Jaque (2018a)	2	1	2	2	1	0	2	2	2	2	2	2	20	83
Thomson & Jaque (2018b)	2	2	2	2	1	0	2	2	2	2	2	1	20	83
Van Buren & Meehan (2015)	2	2	2	0	1	0	0	2	2	1	0	1	13	54
Wojcik et al. (2019)	2	1	2	2	1	0	1	2	2	2	1	1	17	70

Items: 1 = Research aims and Hypothesis, 2 = Definition of ACEs, 3 = Definition of Shame, 4 = Inclusion/Exclusion Criteria, 5 = Recruitment/Sampling procedures, 6 = Sample size, 7 = Data Collection, 8 = ACE measure, 9 = Shame measure, 10 = Statistical analysis, 11 = Generalisability of Findings, 12 = Implications
Individual ratings: 0 = Not applicable/Not reported/Weak, 1 = Moderate, 2 = Strong
Percentages: Weak < 50%, Moderate 50 -75%, Strong > 75%

Narrative Synthesis of Results and Key Findings

All included studies found a significant positive relationship between the two constructs, however the strength of the relationship between multiple ACEs and shame varied across studies which used a correlational analysis, with three finding a large association (r>.05), four a moderate (r=.3-.5) and five a small association (r<.3, Cohen, 1992; see table 3 for overview and key findings of included studies).

Studies using ACEs Questionnaire

Of the 13 studies included, six used the ACEs questionnaire to measure multiple ACEs (See table 4). Within the included studies, two reported small positive correlations between multiple ACEs and shame (Braun et al., 2021; Wojcik et al., 2019), whereas the other four studies reported moderate correlations (Blasini-Mendez, 2020; Stricklen, 2019; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b).

Within the Thomson and Jaque (2018a) and Thomson and Jaque (2018b) studies, both used further MANCOVA analysis to determine if there were any significant differences of experiences of shame and number of ACEs. Both studies found significant differences, with Thomson and Jaque (2018a) finding significant differences in shame scores between individuals reporting no ACEs and 1-3 ACEs along with significant differences between no ACEs and 4 or more ACEs. Similarly, Thomson and Jaque (2018b) found that those categorised as being within a “high shame” group tended to have experienced significantly more ACEs than those categorised to be within a “low shame” group.

Studies using CTQ

Three studies used the CTQ to measure multiple ACES (see table 4). The finding from these studies varied with one study reporting large correlations within a bipolar population (Fowke et al., 2012) and the two other studies reporting small positive correlations within nonclinical populations (Healy et al., 2021; Van Buren & Meehan, 2015).

Studies using CATS

The remaining four studies included used the CATS to measure multiple ACEs (see table 4), with two studies showing strong positive associations between multiple ACEs and shame within psychosis populations (Simpson et al., 2020) and a Christian community sample (Born, 1998). Of the remaining studies included, one found a moderate positive relationship (McGinniss, 1997) and the other a small (Hunziker, 2013). However, additionally, within the Hunziker (2013) study ACEs were also found to significantly predict shame proneness within a regression analysis.

Internal and External Shame

Of the included studies, seven studies utilised sole measures of internal shame (see table 4): the internalised shame scale (ISS). These studies all found positive associations between multiple ACEs and shame (see table 3). Two of these studies reported large positive correlations between ACEs and ISS (Fowke et al., 2012; Born,1998), whereas four studies reported moderate correlations (Blasini-Mendez, 2020; Stricklen, 2019; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b), and one a small positive association (Healy et al., 2021). On the other hand, two explored the relationship between ACEs and external shame using the Other As Shamer scale (OAS). The first study found a moderate positive relationship between multiple ACEs and external shame in a community sample (Blasini-Mendez, 2020), whereas the second found a large positive relationship between ACEs and external shame in a clinical population of those diagnosed with psychosis (Simpson et al., 2020). No included studies explored both internal and external shame within the same sample. However, four studies used instruments which measure shame proneness or trait shame, and within these measures some of the questions are designed to measure internal shame. As a result, this made it difficult to disentangle results from these studies into specific measures of internal shame.

Discussion

The current review synthesised findings of studies which investigated the relationship between ACEs and shame. Consistent with the main hypothesis, the current review supports a link between early childhood adversities and experiences of shame in adults. Despite these positive findings however, it is difficult to determine causality within the relationship and there are many limitations within the research. Furthermore, from the evidence under review it is difficult to disentangle internal and external shame and draw concrete conclusions in relation to the secondary aim of the review.

Primary Aim

The primary aim of the review was to investigate whether there was a direct relationship between multiple ACEs and shame. It was hypothesised that there would be a positive relationship between these variables. The included studies within the review support this hypothesis, as all studies which used correlational analysis found varying positive correlations between the variables. These results were found across clinical and non-clinical samples, including students, bariatric patients, individuals with psychosis and bipolar, general community samples, Christian community sample and performing arts. Furthermore, the three studies which used additional analysis found evidence of a relationship between multiple ACEs and shame through regressions and MANCOVAs. The finding across various groups highlights the importance of considering shame in all individuals, specifically those with multiple ACEs.

Although this is the first review to look specifically at the relationship between multiple ACEs and shame, there has been growing interest in the impact of ACEs on later health outcomes, and investigating multiple ACEs as opposed to specific childhood adversities (Hughes et al., 2017; Panagou & MacBeth, 2022). The findings of the current review are in line with previous research in relation to ACEs and general health outcomes. Results of a previous systematic review suggests that multiple ACEs greatly increases one's risk of developing many health conditions, including both

physical and mental illness. More specifically, much research has suggested that multiple ACEs have a positive relationship with poorer mental health outcomes (Hughes et al., 2017; Panagou & MacBeth, 2022).

Furthermore, the previous findings of the relationship between ACEs and psychopathology does not show complete causality as not everyone who has experienced ACEs goes on to develop mental health difficulties in adulthood (Aafjes-van Doorn, 2020). The findings of the current review could help to explain this, as shame may play a key role in determining mental health outcomes in those who have experienced ACEs. This is in line with past research reporting strong findings in relation to shame and psychopathology (Candea & Szentagotai, 2013) along with the diathesis-stress model (Rosenthal, 1963) which hypothesizes that individuals have varying degrees of vulnerabilities to developing mental health difficulties.

Secondary Aim

The secondary aim of the review was to determine if there was an association between ACEs and types of shame: internal and external. When looking at the included studies for internal and external shame, these all found significant positive relationships, however the strength of the relationships varied and were not consistent across specific measures. Furthermore, no studies looked at comparing these directly.

Although it is difficult to draw concrete conclusions from these findings, along with only two of the included studies investigating external shame within the review, these results seem in line with the characteristics of internal and external shame. For instance, internal shame encompasses the preoccupation of negative self-evaluations, whereas external shame surrounds the preoccupation of being negatively viewed by others (Øktedalen et al., 2014). Both concepts can be viewed in relation to ACEs and trauma, where internal shame can arise as a result of an individual personalising traumatic events, or in this case childhood adversities, and consequently confirming their views of personal failure (Gilbert, 1998; Gilbert & Andrews, 1998). On the other hand, external

shame can arise as a result of how one is seen and evaluated by others as a result of their trauma, or adversities (Gilbert, 1998). Consequently, it can be difficult to disentangle these concepts in relation to childhood adversities and trauma as it is difficult to determine whether external shame can occur without negative self-evaluations or whether it arises within these contexts because of it. Consequently, research has indicated that in the context of trauma, shame is likely to be a "uniform phenomenon", which would support the findings of the current review (Øktedalen et al., 2014).

Methodological Factors and Limitations

Although the majority of the studies within the review had at least moderate methodological quality, there were certain aspects that many of the studies fell short on, with the most prominent being in relation to the sampling, recruitment and design (see table 5). For instance, as the majority of studies within the review are cross sectional in nature, the findings cannot be determined to have a cause-and-effect relationship or explain the causal mechanisms of the relationship. However, theories discussed above can be used to explain how shame may arise as a result of ACEs and consequently how this may impact the development of mental illness (Candea & Szentagotai, 2013 Tangney & Dearing, 2002; Tangney et al., 2007; Tracy & Robins, 2004).

Furthermore, within the included articles only two studies stated the power calculations to determine adequate sample sizes. This raises potential issues when analysing the methodological quality as it is unknown whether the sample sizes recruited was sufficient to detect a clinically significant difference. Underpowered studies are problematic as it makes it more likely to evoke type II errors, where the null hypothesis is incorrectly accepted (Jones et al., 2003). This can result in inconsistencies in literature and incorrect interpretation of results (Maxwell, 2004). However, most studies included did report large sample sizes (see table 5). The impact of these limitations could have been ameliorated by conducting a meta-analysis which could have provided more precise estimate of the effects of ACEs (Lee, 2019). However, it was deemed this would not be appropriate due to the vast variation within the populations and measures used across studies. Consequently,

this could have resulted in the obscuring of genuine discrepancies of effects and thus the conduction of meta-analysis being meaningless (Higgins et al., 2019). Furthermore, it is difficult to fully assess the risk of bias within and across studies due to the observational design (Metelli & Chaimani, 2020). As a result, conducting a meta-analysis of studies at risk of bias has the potential to heighten errors and produce misleading results (Higgins et al., 2019).

In relation to the risk of bias within studies, all the included studies had only a moderate recruitment method with potential degree of biases, with one study giving no detail of recruitment methods. Biases arose from using convenience sampling methods. These ranged from using financial rewards or course credit for completing the study, to recruiting from participants via the internet or those accessing certain service or organisations. Convenience sampling is a very common recruitment method due to its ease. Potential limitations arise as sampling is non-random and convenient to the researcher. This may result in not being representative of the population under examination and as a result lack external validity (Sedgwick, 2013).

Thirdly, many of the studies did not adequately define the concepts of both ACEs and shame. Looking specifically at ACEs this is something that has been poorly defined across literature as no distinct definition of ACEs exists and the term is often used interchangeably with early trauma (McLaughlin, 2016). Furthermore, the definition of ACEs is constantly expanding to include more adversities (Karatekin, & Hill, 2019). This has resulted in ACEs being measured differently across studies and the inclusion of different forms of adversities within specific measure leading to the potential exclusion of important ACEs (McLaughlin, 2016). For instance, this can be seen within the measures used within the included studies where some measures only include measures of childhood physical, sexual and emotional abuse and physical and emotional neglect (e.g. CTQ - Bernstein, & Fink, 1998), whereas others have been expanded to include difficult family environments growing up (ACEs – Felitti et al., 2004). Even more recently developed measures have argued for the further inclusion of adversities such as bullying and discrimination, which are not

included in previous measures (Cronholm et al., 2015; Karatekin, & Hill, 2019). This raises questions when examining the evidence as to whether the studies are truly comparable.

Furthermore, in relation to the measure used within the included studies, all studies included instruments which measured ACEs retrospectively, whereby memory and bias effects may be present when recalling childhood memories. For instance, recent research found in a longitudinal study that retrospectively measuring ACEs did not closely converse with measuring prospectively (Berg et al. 2021). Consequently, this casts doubts on the validity of the retrospective measures used within the included studies and should be considered when interpreting the findings of the current review.

Moreover, within the current review, only studies which included multiple ACEs within their measures were included. As a result, those studies which only measured specific ACEs or only reported subscales of full measures were excluded. Consequently, no specific conclusions can be drawn around differences between specific types of adversities and shame. Furthermore, Despite this however, some previous research suggests that it is the dose-response relationship between ACEs and poor outcomes in adulthood that is important (See Dong et al., 2004 for review). This strengthens the argument for measuring multiple ACEs, as it is not focused on the specific types of adversities but the impact of the quantity of adverse experiences regardless of type (Sheffler et al., 2020), which may reduce the impact of the limitations discussed.

Further limitations arise from the focus of multiple ACEs and how they are measured within the included studies of this review. Specifically, all of the measures give all ACEs an equal weighting. By doing this it suggests that experiences such as parental divorce and living with someone with a mental illness will have the same impact as sexual or physical abuse. This is problematic as it fails to consider the differential impact of these experiences and weights them all equally. Moreover, it fails to assess how one ACE may influence another, for instance parental divorce may be protective in some situations as it could prevent against the contribution of further ACEs including, child abuse

and witnessing violence. However, in some instances ACEs may contribute to cascade effects of other ACEs, for instance, living with someone with mental health difficulties may lead to further experiences of abuse. This raises questions around the effectiveness of these measures as it fails to gather crucial information which could contribute to prevention of adverse health outcomes (Reidy et al. 2021).

Further limitations arise when discussing the measurement of ACEs in relation to the binary interpretation of ACEs being classified as either present or absent. This is problematic as the frequency of occurrence for an ACE to be “present” differs across each category, where some ACEs have to occur frequently, e.g. physical abuse, to be defined as present whereas others, e.g. sexual abuse, only need to occur once. This raises limitations with the measure as it assumes infrequent forms of some abuse is not adverse and fails to take into account the individual’s interpretation of the events. Furthermore, it assumes equal weighting for different experiences of the same adversity, for instance, one instance of sexual touching is weighted the same as being repeatedly and frequently raped. This limits the understanding of the context in which ACEs occur and the impact that they have as a result (Reidy et al. 2021). Consequently, future research should focus on developing these measurements to reduce these limitations and assess it’s relationship with shame.

Similarly, limitations arise when discussing the outcome measure and definitions of shame in the included research. Shame was poorly defined across the majority of the articles and was not always clear what type of shame was being investigated. As this study only included measures which measured general shame in relation to one’s view of themselves, this helped to define the concepts of shame being reviewed.

Finally, the review itself is subject to certain limitations. For instance, the review only contains articles with full English text available. This was primarily due to lack of language resources such as translator services. Although some researchers have argued there is minimal impact on overall findings from excluding non-English research (Dechartres et al., 2018; Hartling et al. 2017;

Nussbaumer-Streit et al. 2020a), other researchers have suggested that it can result in evidence being missed as well as contribute to an increased risk of bias and reduce the generalisability of the findings (Aali et al., 2021; Pieper et al., 2020; Nussbaumer-Streit et al. 2020b; Song et al., 2010). Consequently, this needs to be considered when interpreting the findings of the current review. Additionally, due to time constraints, the second reviewer for the current review screened only 20 percent of identified articles at each stage which may have led to some errors in the process being missed, which again needs to be considered when interpreting finding. However, it is worth noting that of the 20 percent reviewed, no differences were found between the reviewers.

Implications and Future Research

Despite the limitations of the current review, the finding of a positive relationship between ACEs and shame was consistent across all of the included studies, suggesting that it is likely that there is a positive association between these variables. However, the strength of the relationship is less clear. Consequently, it is important for future research to expand on this by reducing the methodological problems raised in the past research to better understand the strength of any mechanisms which may underpin the relationship.

The findings of this review suggest several implications for clinical work. Firstly, it highlights the importance of having an awareness of shame within individuals who present to physical and mental health services who have experienced ACEs. Secondly, as there is a strong correlation between shame and mental health psychopathology (Lewis, 1971) it offers implications for psychological work within mental health services specifically. It highlights the importance of assessing shame and its impact within individuals with multiple ACEs. For instance, by understanding what protects these individuals from developing feelings of shame can be used inform treatment methods to help reduce experiences of shame and psychopathology (Stainton et al., 2019). Furthermore, continuing to investigate non-clinical populations can identify early onset and early

intervention of psychopathology. This could have further impact on public health by preventing more severe psychopathological presentation and high intensive treatments (Conus et al., 2014).

Moreover, shame could be explored within clinical populations through assessment and formulation of patients presenting problems or as the focus of therapeutic intervention, for instance, with a compassion focused approach (Gilbert, 2014) to help reduce negative symptoms and improve mental wellbeing. This is in line with a recent review (Craig et al., 2020) which highlighted the positive potential of CFT in treating conditions which are underpinned by experiences of shame. This also suggests potential ideas for future research, looking at the effectiveness of compassion focus therapy in reducing shame within individual with ACEs.

Furthermore, the results of the current review highlight the relationship between multiple ACEs and shame. As there is already strong links shown between multiple ACEs and psychopathology Hughes et al., 2017) and shame and psychopathology (Lewis, 1971), it brings about the question as to whether shame could be a causal link between these variables. Some research has shown shame as a mediator between multiple ACEs and anxiety (Thomson & Jaque, 2018b), eating disorders (Murray & Waller, 2002) and depression (Matos et al., 2013). However, there are some conditions, such as psychosis, which have yet to be investigated. Finally, methodological limitations could be strengthened in future research. For instance, research could specifically look at the relationship between multiple ACEs and both internal and external shame so that findings could be compared more effectively.

References

Aafjes-van Doorn, K., Kamsteeg, C., & Silberschatz, G. (2020). Cognitive mediators of the relationship between adverse childhood experiences and adult psychopathology: A systematic review. *Development and Psychopathology, 32*(3), 1017-1029.

Aali, G., & Shokraneh, F. (2021). No limitations to language, date, publication type, and publication status in search step of systematic reviews. *Journal of Clinical Epidemiology*, *133*, 165-167.

Afifi, T. O., Enns, M. W., Cox, B. J., Asmundson, G. J., Stein, M. B., & Sareen, J. (2008). Population attributable fractions of psychiatric disorders and suicide ideation and attempts associated with adverse childhood experiences. *American Journal of Public Health, 98*(5), 946–952.

Agency for Healthcare Research and Quality (AHRQ). (2012). Development of the RTI item bank on risk of bias and precision of observational studies. *Journal of clinical epidemiology*, *65*(2), 163-178.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European archives of psychiatry and clinical neuroscience*, *256*(3), 174-186.

Bartlett, J. D., & Sacks, V. (2019). Adverse childhood experiences are different than child trauma, and it’s critical to understand why. *Child Trends*. 1-3.

Bellis, M. A., Hughes, K., Leckenby, N., Hardcastle, K. A., Perkins, C., & Lowey, H. (2015). Measuring mortality and the burden of adult disease associated with adverse childhood experiences in England: a national survey. *Journal of public health*, *37*(3), 445-454.

Bergen, H. A., Martin, G., Richardson, A. S., Allison, S., & Roeger, L. (2004). Sexual abuse, antisocial behaviour and substance use: Gender differences in young community adolescents. *Australian & New Zealand Journal of Psychiatry*, *38*(1-2), 34-41.

Bernstein, D. P., & Fink, L. (1998). *Childhood Trauma Questionnaire: A retrospective self-report San Antonio.* Harcourt, Brace, and Company.

Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: differential susceptibility to environmental influences. *Psychological bulletin, 135*(6), 885.

Berry, K., Fleming, P., Wong, S., & Bucci, S. (2018). Associations between trauma, dissociation, adult attachment and proneness to hallucinations. *Behavioural and cognitive psychotherapy, 46*(3), 292.

Birchwood, M., Jackson, C., Brunet, K., Holden, J., & Barton, K. (2012). Personal beliefs about illness questionnaire-revised (PBIQ-R): Reliability and validation in a first episode sample. *British Journal of Clinical Psychology*, *51*(4), 448-458.

Blasini-Méndez, M. (2021). *Shame, Trauma, Resiliency and Alcohol Related Behaviors in Puerto Rican Populations* [Doctoral dissertation, George Fox University]. ProQuest Dissertations & Theses Global.

Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Paediatrics and Child Health*, *28*(3), 132-137.

Born, J. L. (1998). *Male sexual orientation among religious men: a discriminant function analysis.* [Doctoral dissertation, George Fox University]. Digital Commons @ George Fox University.

Braun, T. D., Gorin, A. A., Puhl, R. M., Stone, A., Quinn, D. M., Ferrand, J., ... & Papasavas, P. (2021). Shame and self-compassion as risk and protective mechanisms of the internalised weight bias and emotional eating link in individuals seeking bariatric surgery. *Obesity Surgery*, *31*(7), 3177-3187.

Candea, D., & Szentagotai, A. (2013). Shame and psychopathology: From research to clinical practice. *Journal of cognitive and behavioral psychotherapies*, *13*(1), 101-113.

Caspi, A., Houts, R. M., Belsky, D. W., Goldman-Mellor, S. J., Harrington, H., Israel, S., ... & Moffitt, T. E. (2014). The p factor: one general psychopathology factor in the structure of psychiatric disorders?. *Clinical psychological science, 2*(2), 119-137.

Centre for Reviews and Dissemination (2009). Systematic Reviews: CRD's Guidance for Undertaking Reviews in Healthcare. York Publishing Services Ltd.

Conus, P., Macneil, C., & McGorry, P. D. (2014). Public health significance of bipolar disorder: implications for early intervention and prevention. *Bipolar disorders*, *16*(5), 548-556.

Cook, D. R. (1994). *Internalised shame scale: Professional manual*. Channel Press.

Craig, C., Hiskey, S., & Spector, A. (2020). Compassion focused therapy: a systematic review of its effectiveness and acceptability in clinical populations. *Expert review of neurotherapeutics, 20*(4), 385-400.

Dechartres, A., Atal, I., Riveros, C., Meerpohl, J., & Ravaud, P. (2018). Association between publication characteristics and treatment effect estimates: a meta-epidemiologic study. *Annals of internal medicine*, *169*(6), 385-393.

Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., ... & Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child abuse & neglect, 28*(7), 771-784.

Dube, S. R., Miller, J. W., Brown, D. W., Giles, W. H., Felitti, V. J., Dong, M., & Anda, R. F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health*, *38*(4), 444.e1-e10.

Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. *American Journal of Psychiatry*, *160*(8), 1453-1460.

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.

Feiring, C., Simon, V. A., & Cleland, C. M. (2009). Childhood sexual abuse, stigmatization, internalizing symptoms, and the development of sexual difficulties and dating aggression. *Journal of consulting and clinical psychology*, *77*(1), 127.

Feiring, C., Taska, L., & Lewis, M. (1996). A process model for understanding adaptation to sexual abuse: The role of shame in defining stigmatization. *Child abuse & neglect*, *20*(8), 767-782.

Fowke, A., Ross, S., & Ashcroft, K. (2012). Childhood maltreatment and internalised shame in adults with a diagnosis of bipolar disorder. *Clinical Psychology & Psychotherapy*, *19*(5), 450-457.

Gibb, B. E., & Abela, J. R. (2008). Emotional abuse, verbal victimization, and the development of children’s negative inferential styles and depressive symptoms. *Cognitive Therapy and Research*, *32*(2), 161-176.

Gilbert, P. (1998). *What is shame? Some core issues and controversies.* In P. Gilbert & B. Andrews (Eds.) *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (p. 3–38). Oxford University Press.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology*, *53*(1), 6-41.

Gilbert, P., & Andrews, B. (Eds.). (1998). Shame: Interpersonal behavior, psychopathology, and culture. Oxford University Press.

Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, *7*(3), 174-189.

Goss, K., Gilbert, P., & Allan, S. (1994). An exploration of shame measures—I: The other as Shamer scale. *Personality and Individual differences*, *17*(5), 713-717.

Harder, D.W., Cutler, L. & Rockart, L. (1992). Assessment of shame and guilt and their relationship to psychopathology. Journal of Personality Assessment, 59(3), 584-604.

Hartling, L., Featherstone, R., Nuspl, M., Shave, K., Dryden, D. M., & Vandermeer, B. (2017). Grey literature in systematic reviews: a cross-sectional study of the contribution of non-English reports, unpublished studies and dissertations to the results of meta-analyses in child-relevant reviews. *BMC medical research methodology*, *17*(1), 1-11.

Healy, C. J., Lee, K. A., & D'Andrea, W. (2021). Using psychedelics with therapeutic intent is associated with lower shame and complex trauma symptoms in adults with histories of child maltreatment. *Chronic Stress*, *5*, 1-12.

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., ... & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health*, *2*(8), 356-366.

Hunziker, E. (2013). *Child Maltreatment and Eating Disorders: An Investigation of Shame-proneness, Guilt-proneness, and Self-objectification as Mediating Variables* [Doctoral dissertation, University of South Dakota]. ProQuest Dissertations & Theses Global.

Jones, S., Carley, S., & Harrison, M. (2003). An introduction to power and sample size estimation. *Emergency medicine journal: EMJ*, *20*(5), 453.

Kajeepeta, S., Gelaye, B., Jackson, C. L., & Williams, M. A. (2015). Adverse childhood experiences are associated with adult sleep disorders: a systematic review. *Sleep medicine*, *16*(3), 320-330.

Karatekin, C., & Hill, M. (2019). Expanding the original definition of adverse childhood experiences (ACEs). *Journal of Child & Adolescent Trauma*, *12*(3), 289-306.

Kealy, D., Rice, S. M., Ogrodniczuk, J. S., & Spidel, A. (2018). Childhood trauma and somatic symptoms among psychiatric outpatients: Investigating the role of shame and guilt. *Psychiatry research*, *268*, 169-174.

Kessler, R. C., McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., ... & Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *The British journal of psychiatry*, *197*(5), 378-385.

Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011). Shame, guilt, and depressive symptoms: a meta-analytic review. *Psychological bulletin*, *137*(1), 68.

Lewis, H.B. (1971). *Shame and guilt in neurosis.* International Universities Press.

Lewis, M. (1992). Shame: The exposed self. Free Press.

Lewis, M. (1998). Shame and stigma. In P. Gilbert & B. Andrews (Eds.), *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (pp. 126–140). Oxford University Press.

Liu, R. T., Choi, J. Y., Boland, E. M., Mastin, B. M., & Alloy, L. B. (2013). Childhood abuse and stress generation: The mediational effect of depressogenic cognitive styles. *Psychiatry Research*, *206*(2-3), 217-222.

Loader, P. (1998). Such a shame—A consideration of shame and shaming mechanisms in families. *Child Abuse Review: Journal of the British Association for the Study and Prevention of Child Abuse and Neglect*, *7*(1), 44-57.

Luoma, J. B., & Platt, M. G. (2015). Shame, self-criticism, self-stigma, and compassion in acceptance and commitment therapy. *Current opinion in Psychology*, *2*, 97-101.

MacMillan, H. L., Fleming, J. E., Streiner, D. L., Lin, E., Boyle, M. H., Jamieson, E., ... & Beardslee, W. R. (2001). Childhood abuse and lifetime psychopathology in a community sample. *American Journal of Psychiatry*, *158*(11), 1878-1883.

Mahtani, S., Hasking, P., & Melvin, G. A. (2019). Shame and non-suicidal self-injury: Conceptualization and preliminary test of a novel developmental model among emerging adults. *Journal of youth and adolescence*, *48*(4), 753-770.

Matos, M., Pinto-Gouveia, J., & Duarte, C. (2013). Internalizing early memories of shame and lack of safeness and warmth: The mediating role of shame on depression. *Behavioural and cognitive psychotherapy*, *41*(4), 479-493.

Matos, M., Pinto-Gouveia, J., Gilbert, P., Duarte, C., & Figueiredo, C. (2015). The Other As Shamer Scale–2: Development and validation of a short version of a measure of external shame. *Personality and Individual Differences*, *74*, 6-11.

Maxwell, S. E. (2004). The persistence of underpowered studies in psychological research: causes, consequences, and remedies. *Psychological methods*, *9*(2), 147.

McEwen, B. S. (2003). Early life influences on life-long patterns of behavior and health. *Mental retardation and developmental disabilities research reviews*, *9*(3), 149-154.

McGinniss, K. D. (1997). *Shame: Correlates of self-consciousness, trauma and parental behavior*. [Doctoral dissertation, The Wright Institute]. ProQuest Dissertations & Theses Global.

McKinley, N. M., & Hyde, J. S. (1996). The objectified body consciousness scale: Development and validation. *Psychology of women quarterly*, *20*(2), 181-215.

Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child abuse & neglect*, *69*, 10-19.

Mojallal, M., Simons, R. M., & Simons, J. S. (2021). Childhood maltreatment and adulthood proneness to shame and guilt: The mediating role of maladaptive schemas. *Motivation and Emotion*, *45*(2), 197-210.

Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., ... & Steele, H. (2014). Adverse childhood experiences (ACEs) questionnaire and adult attachment interview (AAI): Implications for parent child relationships. *Child abuse & neglect*, *38*(2), 224-233.

Murray, C., & Waller, G. (2002). Reported sexual abuse and bulimic psychopathology among nonclinical women: The mediating role of shame. International Journal of Eating Disorders, 32(2), 186-191.

Nussbaumer-Streit, B., Klerings, I., Dobrescu, A. I., Persad, E., Stevens, A., Garritty, C., ... & Gartlehner, G. (2020a). Excluding non-English publications from evidence-syntheses did not change conclusions: a meta-epidemiological study. *Journal of clinical epidemiology*, *118*, 42-54.

Nussbaumer-Streit, B., Klerings, I., & Gartlehner, G. (2020b). Reply to letter to the editor “Lessons from COVID-19 to future evidence synthesis efforts: first living search strategy and out of date scientific publishing and indexing industry”. *Journal of Clinical Epidemiology*, *123*, 173-174.

Øktedalen, T., Hagtvet, K. A., Hoffart, A., Langkaas, T. F., & Smucker, M. (2014). The Trauma Related Shame Inventory: Measuring trauma-related shame among patients with PTSD. *Journal of Psychopathology and Behavioral Assessment*, *36*(4), 600-615.

Panagou, C., & MacBeth, A. (2022). Deconstructing pathways to resilience: A systematic review of associations between psychosocial mechanisms and transdiagnostic adult mental health outcomes in the context of Adverse Childhood Experiences (ACEs). *Clinical Psychology & Psychotherapy*.

Parsa, S. (2018). Psychological Construction of Shame in Disordered Eating. *New Psychology Bulletin*, 15(1), 11-19.

Pieper, D., & Puljak, L. (2021). Language restrictions in systematic reviews should not be imposed in the search strategy but in the eligibility criteria if necessary. *Journal of Clinical Epidemiology*, *132*, 146-147.

Polusny, M. A., & Follette, V. M. (1995). Long-term correlates of child sexual abuse: Theory and review of the empirical literature. *Applied and preventive psychology*, *4*(3), 143-166.

Rahm, G., Renck, B., & Ringsberg, K. C. (2013). Psychological distress among women who were sexually abused as children. *International Journal of Social Welfare, 22*(3), 269–278.

Reidy, D. E., Niolon, P. H., Estefan, L. F., Kearns, M. C., D'Inverno, A. S., Marker, C. D., & Merrick, M. T. (2021). Measurement of adverse childhood experiences: it matters. *American journal of preventive medicine*, *61*(6), 821-830.

Rosenthal, D. (1963). A suggested conceptual framework. In: D. Rosenthal (Eds.) *The Genain quadruplets* (pp. 505-516). Basic Books.

Rusch, N., Corrigan, P.W., Bohus, M., Jacob, G.A., Brueck, R. & Lieb, K. (2007). Measuring shame and guilt by self-report questionnaires: A validation study. Psychiatry Research, 150(3), 313-325.

Rybak, C. J., & Brown, B. (1996). Assessment of internalised shame: Validity and reliability of the internalised shame scale. *Alcoholism Treatment Quarterly*, *14*(1), 71-83.

Sachs-Ericsson, N., Verona, E., Joiner, T., & Preacher, K. J. (2006). Parental verbal abuse and the mediating role of self-criticism in adult internalizing disorders. *Journal of affective disorders*, *93*(1-3), 71-78.

Sanders, B., & Becker-Lausen, E. (1995). The measurement of psychological maltreatment: Early data on the child abuse and trauma scale. *Child abuse & neglect*, *19*(3), 315-323.

Sareen, J., Henriksen, C. A., Bolton, S. L., Afifi, T. O., Stein, M. B., & Asmundson, G. J. G. (2013). Adverse childhood experiences in relation to mood and anxiety disorders in a population-based sample of active military personnel. *Psychological Medicine*, *43*(1), 73-84.

Scottish Intercollegiate Guidelines Network (SIGN). SIGN 50 Guideline Developer's Handbook 2008. http://www.sign.ac.uk/guidelines/fulltext/50/section1.html

Scottish Intercollegiate Guidelines Network. (2014). SIGN 50: A guideline developer's handbook. Edinburgh: SIGN; 2014

Sedgwick, P. (2013). Convenience sampling. *Bmj*, *347*.

Segal, Z. V. (1988). Appraisal of the self-schema construct in cognitive models of depression. *Psychological bulletin*, *103*(2), 147.

Sheffler, J. L., Stanley, I., & Sachs-Ericsson, N. (2020). ACEs and mental health outcomes. In *Adverse childhood experiences* (pp. 47-69). Academic Press.

Shein, L. (2018). The Evolution of Shame and Guilt. *PLoSONE*, 13(7), 1-11.

Simpson, J., Helliwell, B., Varese, F., & Powell, P. (2020). Self-disgust mediates the relationship between childhood adversities and psychosis. *British Journal of Clinical Psychology*, *59*(2), 260-275.

Song, F., Parekh, S., Hooper, L., Loke, Y. K., Ryder, J., Sutton, A. J., ... & Harvey, I. (2010). Dissemination and publication of research findings: an updated review of related biases. *Health technology assessment*, *14*(8), 1-220.

Stainton, A., Chisholm, K., Kaiser, N., Rosen, M., Upthegrove, R., Ruhrmann, S., & Wood, S. J. (2019). Resilience as a multimodal dynamic process. *Early intervention in psychiatry*, *13*(4), 725-732.

Stricklen, J. D. (2019). *The Weight of Shame and Trauma in Bariatric Patients.* George Fox University.

Tangney, J. P., & Dearing, R. L. (2002). Gender differences in morality. In R. F. Bornstein & J. M. Masling (Eds.), *The psychodynamics of gender and gender role* (pp. 251–269). American Psychological Association.

Tangney, J. P., Dearing, R. L., Wagner, P. E., & Gramzow, R. (1989). *Test of Self-Conscious Affect–3.* George Mason University.

Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology, 58*, 345–372.

Thomson, P., & Jaque, S. V. (2018a). Childhood adversity and the creative experience in adult professional performing artists. *Frontiers in Psychology, 9*(111), 1-9.

Thomson, P., & Jaque, S. (2018b). Shame and anxiety: The mediating role of childhood adversity in dancers. *Journal of Dance Medicine & Science*, *22*(2), 100-108.

Toth, S. L., Cicchetti, D., & Kim, J. (2002). Relations among children's perceptions of maternal behavior, attributional styles, and behavioral symptomatology in maltreated children. *Journal of Abnormal Child Psychology*, *30*(5), 487-501.

Tracy, J. L., & Robins, R. W. (2004). " Putting the Self Into Self-Conscious Emotions: A Theoretical Model". *Psychological inquiry*, *15*(2), 103-125.

Van Buren, B. R., & Meehan, K. B. (2015). Child maltreatment and vulnerable narcissism: The roles of shame and disavowed need. *Journal of the American Psychoanalytic Association*, *63*(3), 555-561.

Van Vliet, K. J. (2010). Shame and avoidance in trauma. In E. Martz (EDs) *Trauma rehabilitation after war and conflict* (pp. 247-263). Springer.

Vandenbroucke, J.P., vonElm, E., Altman, D.G., Gotzche, P.C., Mulrow, C.D., Pocock, S.J., Poole, C. Schlesselman, J.J. & Egger, M. (2007). Strengthening the reporting of observational studies in Epidemiology (STROBE): explanation and elaboration, Epidemiology, 18(6), 805- 835

vonElm, E. Altman, D.G., Egger, M., Pocock, S.J., Gotzche, P.C. & Vandenbruocke, J.P. (2008). The Strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. Journal of Clinical Epidemiology, 64(4), 344-349.

Wojcik, K. D., Cox, D. W., & Kealy, D. (2019). Adverse childhood experiences and shame-and guilt-proneness: Examining the mediating roles of interpersonal problems in a community sample. *Child Abuse & Neglect*, *19*(1), 1-9.

Chapter 2: An exploration of the relationships between the cumulative effect of Adverse Childhood Experiences (ACEs), shame, and proneness to psychosis within an adult community sample

Running title: Multiple ACEs, Shame and Psychosis Proneness

Written in accordance with the author guidelines for the Clinical Psychology and Psychotherapy journal (see Appendix A). Tables and figures are included in text body for the purpose of the DClin Submission as per University of Edinburgh guidance.

The author declares no conflicts of interest.

Word Count: 11,743

Abstract

Aims*:* The purpose of the current study was to assess the relationships between multiple adverse childhood experiences (ACEs), social emotions, and proneness to psychosis and psychotic symptoms, within the general population. Despite many studies investigating the link between specific ACEs and psychosis in adulthood, the impact of the cumulative effect of ACEs or 'multiple ACEs' has been researched less.

Methods*:* 140 participants were recruited online through various methods and completed eight questionnaires asking questions regarding their experiences of childhood adversities, psychosis proneness, proneness to psychotic symptoms (paranoia, hallucination, thought disorder and negative symptom proneness) and social emotions (internal and external shame guilt and self-disgust).

Results*:* Analysis revealed that there were positive correlations between all variables including ACEs, social emotions and proneness to psychosis and psychotic symptoms. Prediction analysis revealed that ACEs and internal shame significantly predicted psychosis proneness and proneness to psychotic symptoms, however other social emotions did not when added to the model. Finally, mediation analysis showed that internal shame significantly mediated the relationship between ACEs and proneness to psychosis and psychotic symptoms.

Conclusions*:* The results suggest that internal shame could help to explain individual difference in the susceptibility of developing psychosis or psychotic symptoms, however, other potential intervening variables are not accounted for.

Key words: Adverse Childhood Experiences, Childhood Adversities, Shame, Social Emotions, Psychosis, Psychosis Proneness

Introduction

Adverse Childhood Experiences

Adverse Childhood Experiences (ACEs) are defined as stressful or traumatic experiences which have occurred during the first 18 years of one's life, including direct (e.g. abuse or neglect) and indirect experiences (e.g. through their living environments, for instance substance abuse, parental conflict or mental illness) to a child (Kajeepeta et al., 2015; Hughes et al., 2017). ACEs are common experiences within the general population with a prevalence rate of approximately 65% experiencing one ACE and around 9-14% experiencing more than four ACEs (Boullier, 2018; Kessler et al., 2010).

Recently, much research has been interested in investigating the impacts ACEs can have on health outcomes later in life, with a large body of research suggesting the greater number of ACEs experienced increases the risk of adverse physical and mental health outcomes (Anda et al., 2006; Bellis et al., 2015; Hughes et al., 2017). The relationship between ACEs and increased risk of mental illness is suggested to arise through the development of negative self-schemas as a result of an individual's perception of themselves within their environment, which in turn, may affect their ability to recover from stress and contribute to further negative interpretations and self-schemas. (Gibb & Abela, 2008; Liu et al., 2013; Sachs-Ericsson et al., 2006; Segal, 1988; Sheffler et al., 2020).

Despite the positive associations reported between ACEs and psychopathology, not everyone who has ACEs will go on to develop mental health difficulties in adulthood (Aafjes-van Doorn, 2020). The diathesis-stress model (Rosenthal, 1963) outlined in Chapter 1, suggests that individuals have varying degrees of vulnerability to developing mental illnesses and respond to difficult experiences in different ways and as a result, individual differences may play a key role in one's vulnerability to ACEs and whether they develop a mental illness (Belsky & Pluess, 2009; Caspi et al., 2014).

More recently, research has looked at investigating the specific mechanisms which may underlie the relationship between ACEs and psychopathology which remains a topic of debate (Aafjes-van Doorn, 2020). A recent systematic review examined the intervening variables within this relationship (Panagou & MacBeth, 2022). They concluded that within the literature there are multiple intervening variables which could help to explain the relationship between ACEs and psychopathology. This has important implications for research investigating mediating variables, as there may be a variety of variables that could explain at least part of the relationship between ACEs and psychopathology. However, it is unlikely that there will be one sole variable. Furthermore, individual differences may play a role within which intervening variable may put them at risk or prevent them from developing a mental illness. This effect has also been highlighted in recent systematic reviews when investigating ACEs and psychosis (See Alameda et al., 2020; Sideli et al., 2020 and Williams et al., 2018 for review).

Psychosis

Exposure to ACEs has also been implicated in the risk of developing psychosis (See Skehan et al., 2012 for review), with high rates of adversities being reported in those with a diagnosis of psychosis (e.g. Goff et al., 1991; Masters, 1995; Mueser et al., 1998; Ross & Joshi, 1992). Previous research investigating ACEs and psychosis has mostly utilised measures which solely assess exposure to either childhood sexual, physical or emotional abuse or physical or emotional neglect. Varese et al. (2012) conducted a meta-analysis investigating the relationship between ACEs and psychosis and found that 9 out of 10 studies reported a dose-response relationship between the two variables. However, within this review, studies varied significantly in their assessment and definitions of ACEs. This is a problem seen across much of the ACEs literature whereby no distinct definition exists and ACEs is often used interchangeably with other terminology such as early trauma (McLaughlin, 2016). This is problematic as there are clear distinctions between ACEs and trauma. Whereby ACEs refers to the exposure of an event which could pose a threat to a child’s wellbeing, whereas trauma is a possible outcome as a response to the exposure (Bartlett & Sacks, 2019). Consequently, although

ACEs and trauma often co-occur, not everyone who has experienced ACEs will experience trauma. Therefore, by using these terms interchangeably can make it difficult to determine what is actually being measured and discussed in research.

In line with this, the definition and measurement of ACEs is constantly expanding to include and measure more types of adversities experienced, with early measures excluding some specific adversities such as bullying and discrimination (Cronholm et al., 2015; Karatekin & Hill, 2019). This is problematic within the context of psychosis as additional ACEs, such as bullying and victimisation, have been shown to be strongly associated with psychosis (See Peh et al., 2019 for review). Consequently, this may have led to the potential exclusion of important ACEs and raises questions as to whether the studies are truly comparable. Furthermore, the use of meta-analysis within the Varese et al. (2012) study is somewhat problematic due to the diversity within the measurement and definition of ACEs and psychosis outcomes. This may result in obscuring genuine differences of effect making the results meaningless (Higgins et al., 2019).

Accordingly, there is not a vast amount of research investigating the cumulative effects of ACEs that an individual has experienced, referred to as ‘multiple ACEs’ henceforth, and psychosis, a problem which is not specific only to psychosis but to later physical and mental health outcomes as well (Hughes et al., 2017). Due to the dose-response relationship between ACEs and psychosis in adulthood (Varese et al. 2012), it is hypothesised that ACEs are intercorrelated. Consequently, research investigating specific ACEs only is argued to overlook the co-occurring impact of multiple ACEs in environments where multiple ACEs occur (For example, substance abuse, domestic violence and criminal activity). This is problematic as researching specific ACEs under these circumstances can lead to outcomes being wrongly attributed to single adversities and overlooking the impact of multiple ACEs (Anda et al., 1999; Caron & Rutter, 1991; Felitti et al., 1998). As a result, the lack of research around multiple ACEs has the potential to not give a complete assessment of the breadth of childhood adversities that the examination of multiple ACEs gives (Sheffler et al., 2020).

In support of this, Trauelsen et al. (2015) investigated the impact of multiple ACEs measured by the Childhood Trauma Questionnaire (CTQ) in individuals with first episode psychosis compared to controls. Similar to Varese et al. (2012)'s findings, they reported a dose-response relationship between ACEs and psychosis with each additional ACE contributing two and a half more times to the risk of developing psychosis (Trauelsen et al., 2015). However, the CTQ only includes measures of childhood physical, sexual and emotion abuse and physical and emotional neglect, which additionally may not give a complete assessment of the breadth of childhood adversities as it fails to account for the indirect experiences a child is exposed to (e.g. through their living environments, for instance substance abuse, parental conflict or mental illness). Furthermore, as outlined above, additional ACEs, such as bullying and victimisation, have also been shown to be strongly associated with psychosis (See Peh et al., 2019 for review).

As well as investigation into the relationship between ACEs and psychosis, recent research has examined the relationship between specific ACEs with specific symptoms of psychosis (See Grindey & Bradshaw, 2022 for review). For instance, positive symptoms, which encompass both hallucinations and delusions, along with thought disorder and negative symptoms (American Psychiatric Association (APA), 2013). Within the review, significant associations were found between child sexual and physical abuse and hallucinations as well as between paranoia and violent adversities such as childhood physical abuse, assault and witnessing violence. Research assessing the relationship with thought disorder and negative symptoms was limited, however. Despite these associations, the majority of the research within the review failed to investigate the impact of multiple ACEs.

One study not included within the above review assessed the impact of multiple ACEs and their relationship with risk of hallucinations. They reported an increased risk of hallucinations as a result of exposure to any of the eight investigated ACEs and a dose response relationship, with the number of ACEs increasing the risk of hallucinations (Whitfield et al., 2005). This dose response

relationship between ACEs and hallucinations was further supported by subsequent research (Shevlin et al., 2007; Shevlin et al., 2011), along with similar reports between ACEs and delusional experiences (Scott et al., 2007). However, no research has investigated the relationship between multiple ACEs and paranoia, thought disorder or negative symptoms to date.

Shame and Psychosis

Despite the correlation between ACEs, psychosis and psychotic symptoms, the mechanisms which underpin the relationship are less understood (Berry et al., 2018). One mechanism which could underlie the relationship between ACEs and psychosis is shame. The development of shame is hypothesised to be greatly impacted by ACEs whereby shame is encouraged through the violation of highly salient standards of conduct by the perpetrator keeping the victim silent (Deblinger and Runyon, 2005; Feiring, 2005). Furthermore, frequent experiences of shame are proposed to contribute towards the development of unhelpful thinking styles which in turn influences how an individual feels and behaves, affecting susceptibility to mental illness (Coates & Messman-Moore, 2014). Strong links have been reported between shame and psychopathology in a vast amount of empirical research (see Candea & Szentagotai (2013) for review), though no research has specifically investigated shame as a potential mediator in the relationship between ACEs and psychosis.

Shame is an unconscious and unpleasant emotion. It incorporates negative self-evaluations which motivates individuals to attempt to conceal or deny any perceived wrongdoing (Parsa, 2018; Shein, 2018). There is a clear consensus that there are two distinct types of shame. Firstly, internal shame, which arises inside the self and involves negative evaluation of self and self-criticism. Secondly, external shame, which arises outside the self and involves an awareness of negative evaluation from others (Gilbert, 1998; Kim et al., 2011).

Shame is hypothesised to arise as a result of ACEs through the dehumanising and humiliating effect they can have on individuals, making them feel flawed and stigmatised (Feiring et al., 1996; Lewis, 1992; Lewis, 1998; Rahm et al., 2013). This can further cause individuals to believe they have

deserved these experiences or that there is something wrong with them, resulting in feelings of shame (Lewis, 1971, 1992; Loader, 1998). This has been supported by research investigating the impact of ACEs and shame, which reported positive relationships with multiple ACEs indicating greater feelings of shame (e.g. Blasini-Mendez, 2020; Braun et al., 2021; Fowke et al., 2012; Healy et al., 2021; Hunziker, 2013; McGinniss, 1997; Simpson et al., 2020; Stricklen, 2019; Thomson & Jaque, 2018a; Thomson & Jaque, 2018b; Van Buren & Meehan, 2015; Wojcik et al., 2019). This suggests that there may be a dose-response relationship between ACEs and shame, consistent with the broader literature around ACEs and adverse health outcomes (Dong et al., 2004). See Chapter one for review on multiple ACEs and shame.

When looking specifically at internal and external shame in relation to ACEs, internal shame has been hypothesised to develop as a result of an individual personalising traumatic events, such as childhood adversities, which in turn confirms their views of personal failure (Gilbert, 1998; Gilbert & Andrews, 1998). On the other hand, external shame has the potential to develop in response to how one believes others view or evaluate them in response to their experiences (Gilbert, 1998). It is questioned whether external shame can occur without negative self-evaluations in the context of trauma, consequently making it difficult to determine whether internal and external shame can exist independently of each other in the context of childhood adversities or trauma and whether it is more likely a “uniform phenomenon” (Øktedalen et al., 2014).

Similarly, a recent systematic review reports some evidence of a relationship between shame and psychosis, however findings are inconsistent (Carden et al., 2020). Within comparative studies within clinical populations four out of six studies reported significantly greater experiences of shame within psychosis populations, with one study looking specifically at external shame. However, within the two other studies, small sample sizes and low power were reported which could account for the lack of significant findings. Further to this, correlational studies also provided mixed findings, with one study reporting significant correlations between external shame and positive symptoms

(Wood & Irons, 2016), whereas another found no significant association between external shame and either positive or negative symptoms of psychosis (Birchwood & Trower, 2006). Only one study measured internal shame in relation to psychosis (Turner et al., 2013). However, within this study. both internal and external shame was measured specifically in relation to having psychosis rather than investigating general feelings of shame. Due to the limited research of internal shame and psychosis and with most studies included within the review using measures incorporating aspects of several types of shame, e.g. shame-proneness, internal shame etc., makes it difficult to disentangle the types of shame which might account for the inconsistencies in the findings. Furthermore, no study examined the association between shame and other specific symptoms of psychosis such as thought disorder and only one assessed negative symptoms.

Hallucinations. Despite no research looking at the mediating relationship between ACEs, shame, and psychosis, researchers have investigated the association in relation to psychotic symptoms. McCarthy-Jones (2017) hypothesised that shame may play an important role in mediating the relationship between ACEs and hallucinations. Based on multiple case studies, McCarthy-Jones argues that the development of shame is strongly influenced by childhood adversities by the perpetrator keeping the victim silent by encouraging shame through violations of highly salient standards of conduct (Deblinger and Runyon, 2005; Feiring, 2005), and consequently could be a potential mediator in the development of hallucinations.

More recently however, additional evidence has been provided in support of this hypothesis. Bortolon and Raffard (2019) investigated the causal role of shame within the relationship of ACEs and hallucination proneness. They found shame along with intrusions to be a significant mediator. Within this study, shame was measured using the Experiences of Shame Scale (ESS; Andrews et al., 2002). This scale was designed to measure shame proneness (Andrews et al., 2002) and is categorised into three types of shame: characterological shame, behavioural shame and bodily shame. Limitations arises when interpreting results of this questionnaire as it is difficult to

disentangle the types of shame that may contribute to the relationship between shame and psychosis. Furthermore, many studies have used this questionnaire to measure internalised shame (e.g. Galhardo et al., 2011; Saggino et al., 2017) despite it not being specifically designed to measure this (Galhardo et al., 2011). This is problematic as some researchers have argued that some items on the ESS may be more representative of external shame (Matos et al., 2013). When interpreting the finding of this research, it is hard to determine what type of shame is being measured. Furthermore, it raises questions as to whether any conclusions can be drawn between hallucinations and internal shame.

Paranoia. Similar to hallucinations, past research has suggested that there is a role for shame in explaining the psychological mechanisms underlying the relationship between childhood adversities and paranoia. Previous research has found positive relationships between both internal and external shame and paranoia proneness (Gilbert, 2003). Matos et al. (2013) found that when comparing internal and external shame with paranoia, although both showed a positive relationship, external shame was more highly correlated. Despite this however, a major drawback of the study arises when focusing on the comparison of internal and external shame. Similar to the Bortolon and Raffard, (2019) study outlined above, Matos et al. (2013) used the ESS to measure internalised shame within participants. As there are questions as to whether this instrument solely measures internal shame, it questions the credibility of its utility within this study especially when comparisons are made to external shame (Matos et al., 2013).

To make up for these limitations, Pinto-Gouveia et al. (2014) assessed the relationship between these variables using the Internalised Shame Scale (ISS; Cook, 1996). The results found that emotional memories, submissive behaviour and both internal and external shame were significantly associated with paranoia. From this, the authors hypothesised that early emotion memories, recall of threatening events and submissive behaviour could influence the development of both internal and external shame, which could help explain the development of paranoia. The two studies

discussed above (Matos et al., 2013; Pinto-Gouveia et al., 2014) investigated these relationships in Portuguese populations using translated measures. Although the reliability and validity of these measures has been shown to be good, it is questionable whether the results can be generalised to a UK or English-speaking population due to differences in language and culture. Furthermore, these studies did not look at the direct relationships between ACEs, shame and paranoia, nor did they investigate whether shame could mediate the relationship between ACEs and paranoia.

Present Study

Within psychosis literature, there is a vast amount of research which suggests that psychosis and psychotic symptoms lie on a continuum, with less severe psychotic-like experiences being commonly found within the general population (Berry et al., 2018), with past research of non-clinical populations reporting evidence of proneness to psychosis and psychotic symptoms (Fenigstein & Vanable, 1992; Freeman et al., 2005; Levitan et al., 1996; Pickering et al., 2008; Waters et al., 2003). As a result, this present study will investigate the relationships between multiple ACEs, social emotions, and proneness to psychosis and psychotic symptoms within a non-clinical population. Whereby multiple ACEs refers to the measurement of the number of ACEs individuals have experiences including no experience of ACEs.

The study aims to build on previous research which has shown an association between childhood adversities, shame and psychosis/psychotic symptoms. From this, it is plausible to suggest a mediating role of shame which developed as a result of childhood adversities in the development of psychosis. Previous literature has not been clear in distinguishing between different types of shame when investigating ACEs, shame and psychosis and there appears to be a gap when looking specifically at internal shame. Previous research outlined above which investigates mediation among these variable (e.g. Bortolon & Raffard, 2019) has been shown to have significant methodological limitations. Therefore, this present study set out to address some of these methodological concerns and determine whether internal shame, could mediate the relationship

between childhood adversities and proneness to psychosis and psychotic symptoms. The present study hypothesised the following:

1. Multiple ACEs and social emotions will positively correlate with proneness to psychosis (primary aim) and proneness to psychotic symptoms (secondary aim).
2. Multiple ACEs and social emotions will significantly predict proneness to psychosis (primary aim) and proneness to psychotic symptoms (secondary aim).
3. Social emotions will significantly mediate the relationship between multiple ACEs and proneness to psychosis (primary aim) and proneness to psychotic symptoms (secondary aim).

Methodology

Design

The study used a cross-sectional quantitative within subjects design. The study consisted of one independent variable (ACEs), and five dependent variables (psychosis, hallucination, paranoia, thought disorder and negative symptom proneness). The study used internal shame as a mediating variable.

Participants

191 participants were recruited online from the general UK population, with 140 completing the online questionnaire and 51 incomplete responses, which were subsequently excluded from the analyses (see missing data outlined below). Participants needed to be over 16 to take part in the research and ages ranged from 21 to 71 with a mean age of 38 years (±13.08). 118 of the participants identified as female, 21 male and 1 transgender. The inclusion criteria were being over 16, self-reporting as fluent in English and living in the UK. The study was limited to a UK population due to the variations in experiences in guilt and shame across different cultures and countries (Wong & Tsai, 2007). If a wider population was included within the study, this may have influenced the results of the study and made it harder to generalise to a UK population.

Measures

Demographic Information – Participants completed a short questionnaire asking questions regarding their demographics including age, gender, any previous mental health involvement from secondary care services, if they had a diagnosis of psychosis and whether they lived in the UK (see appendix E).

Philadelphia Adverse Childhood Experiences (PHL ACEs – Cronholm et al., 2015) – The PHL ACES is a 22-item self-report measure of exposure to ACES. It is comprised of two subscales, the Conventional ACEs and the Expanded ACEs. The conventional scale has been adapted from the original Adverse Childhood Experiences scale (ACEs – Felitti et al., 1998) and consists of 15 items

including exposure to sexual abuse, physical abuse, physical neglect, emotional abuse, emotional neglect, incarceration of a family member, domestic violence, household mental health and substance use. The expanded ACEs builds on the original ACEs by including 7-items regarding community experiences, including living in an unsafe neighbourhood, living in foster care, witnessing violence, discrimination and bullying. The PHL ACEs is scored using multiple scales to measure the presence and frequency of adversity whereby adversity is indicated differently for each category (see appendix F for scoring instructions).

Felitti et al. (1998)'s original ACEs questionnaire has been shown to have good internal consistency (α = .88; Murphy et al., 2014) and good test-retest reliability (Dube et al., 2004). Use of the adapted measure in Cronholm's (2015) Philadelphia study found that 13.9% of 1,784 participants experienced expanded ACEs only, which would have been missed if they only measured conventional ACEs. For this reason, the current study chose to use the adapted measure. Similarly, other validated measures of childhood adversities, such as the Childhood Trauma Questionnaire (CTQ - Bernstein et al., 2003), only measure sexual abuse, physical abuse and neglect, and emotional abuse and neglect. Consequently, this excludes many ACEs which have been found to have strong associations with psychosis (Bebbington et al., 2004; Janssen et al., 2003; Lataster et al., 2006; Schreier et al., 2009; Varese et al 2012). For this current study α = 0.886 suggesting good internal consistency.

Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE; Mason et al., 1995). The O-Life is a 104-item self-report measure developed to measure proneness to psychosis using four subscales, Unusual Experiences, Cognitive Disorganisation, Introvertive Anhedonia and Impulsive Non-conformity. The Unusual Experiences (UnEx; 30-items) scale contains items describing perceptual aberrations, magical thinking, and hallucinations, traits which reflect the positive symptoms of psychosis. The Cognitive disorganisation (CogDis; 24-items) scale considers poor attention, concentration, and decision-making and social anxiety. These traits are thought to

reflect thought disorder proneness and other disorganised aspects of psychosis. The Introvertive Anhedonia (IntAn; 27 items) scale measures a lack of enjoyment from physical and social sources of pleasure and an avoidance of intimacy. These traits are thought to reflect weakened forms of negative symptoms. Finally, the Impulsive Nonconformity (ImpCon; 23-item) scale contains items describing impulsive, anti-social, and eccentric forms of behaviour, often suggesting a lack of self-control (Mason & Claridg, 2006). All scales consist of response choices “YES” or “NO” with total scores ranging from 0-30 for unusual experiences, 0-24 for cognitive disorganisation, 0-27 for introvertive anhedonia and 0-23 for impulsive nonconformity subscales. The subscales have been shown to have high internal consistency with α = 0.89 for Unusual Experiences, α = 0.87 for cognitive disorganisation, α = 0.82 for introvertive anhedonia and α = 0.77 for Impulsive Nonconformity. These results have since been replicated by Rawlings and Freeman (1997) with 0.77, 0.81, 0.85 and 0.72 respectively. Similarly, Test–retest reliability has been found to be high with r =0.86 for Unusual Experiences, r =0.93 for cognitive disorganisation, r = 0.84 for introvertive anhedonia and r =0.76 for impulsive nonconformity (Burch et al., 1988). For this current study total scores on OLIFE α = 0.949 suggesting excellent internal consistency. For the CogDis and IntAn subscales alpha was 0.896 suggesting good internal consistency and 0.902 suggesting excellent internal consistency respectively.

The Paranoia Scale (PS - Fenigstein and Vanable 1992) - The PS is one of the most widely used measures of paranoid thoughts. It has been found to have wide ranging scores in a non-clinical population, which is why it was chosen for this study (Vellante et al., 2012). It is a 20-item self-report scale, adapted from the Minnesota Multiphasic Personality Inventory (Dahlstrom et al., 1975). It is scored on a 5-point Likert scale with higher scores indicating greater paranoid thoughts and with answers ranging from “not at all applicable to me” (1) to “extremely applicable to me” (5). Research has found the scale to have good test-retest reliability (r = 0.70) and internal reliability (α = 0.84) (Freeman, 2008). For this current study α = 0.944 suggesting excellent internal consistency.

The revised Launay-Slade Hallucination Scale (LSHS-R; Bentall & Slade, 1985) – The LSHS-R is used to measure audio and visual hallucinatory predisposition in non-clinical populations (Waters et al., 2003). Previous research has used this measure to show mediating factors of trauma and hallucination proneness in general populations (Varese et al., 2012). It is a 12-item self-report scale, with items scored on a 5-point Likert scale with higher scores indicating more experiences of hallucinations and with answers ranging from ‘‘certainly does not apply to me” (0) to “certainly applies to me” (4). The measure has been found to be reliable in a general population sample (Bentall & Slade, 1985), and in a with α = 0.90 in a Portuguese general population (Fonseca-Pedrero et al., 2010). For this current study α = 0.890 suggesting good internal consistency.

Internalised Shame Scale (ISS; Cook, 1994) – The ISS is a 30-item self-report scale which measures internalised shame (24-items) and self-esteem (6-items) on two subscales. Only the internalised shame subscale was used in this study. Scores are rated on a 5-point Likert scale with higher scores indicating higher internal shame and with the following response choices, “Never” (0), “Seldom” (1), “Sometimes” (2), “Frequently” (3), and “Almost Always” (4). The internal shame subscale has been found to have high construct validity and reliability (α = 0.97) in both clinical and non-clinical populations (Rybak & Brown, 1996). For this current study α = 0.909 suggesting excellent internal consistency.

Other as Shame Scale (OAS; Goss et al, 1994) – The OAS is an 18-item self-report scale which measures external shame and is based on the ISS. Scores are rated on a 5-point Likert scale with higher scores indicating greater external shame and with the following response choices, “Never” (0), “Seldom” (1), “Sometimes” (2), “Frequently” (3), and “Almost Always” (4). It has been found to have good internal reliability (α = 0.92; Goss et al., 1994). For this current study α = 0.964 suggesting excellent internal consistency.

Personal Feelings Questionnaire-2 (PFQ-2; Harder & Zalma, 1990) is a 16-item self-report questionnaire which measures feelings of shame and guilt. Respondents indicate the frequency of their experiences on a scale from (0) “never” to (4) “continuously or almost constantly”. The PFQ-2 includes 6 items assessing guilt and 10 items assessing shame. The current study only included use of the guilt scale. The PQF-2 Guilt subscale has been shown to have good test–retest reliability (r = 0.85) and internal consistency (α = 0.72) (Harder & Zalma, 1990). For this current study α = 0.843 suggesting good internal consistency.

Self-Disgust Scale-Revised (SDS-R; Powell et al., 2015) - 22-item self-report scale used to measure an individual's level of self-directed disgust. The SDS-R has a bi-factor structure and consists of two subscales: behavioural self-disgust (5 items) and physical self-disgust (5 items) as well as a total score relating to general self-disgust (15 items). All 15 items, measured on a 7-point scale from (1) “strongly disagree” to (7) “strongly agree”, are summed to generate a total score where higher scores indicate greater self-disgust. It has shown good internal reliability (α = .82) (Simpson et al., 2020). For this current study α = 0.514 suggesting poor internal consistency.

Procedure

140 participants were recruited through various online methods. Firstly, charities for victims of abuse were contacted to help advertise the study. Furthermore, the advertisement was posted on social media, twitter and facebook, and social media pages surrounding ACEs and psychosis were contacted to help share the study.

The owners of these charities and social media pages were contacted to post the online advertisement on their pages/websites or to “retweet” if on twitter. The online advertisement was posted along with a link to the study on Qualtrics, which brought participants to the participation information sheet. After the participant information sheet had been shown, participants were asked to confirm they had read the information sheet and provided consent to take part in the study (See appendix G and H). Only once participants had confirmed this were they able to continue to the

questionnaires. Following this, participants completed eight questionnaires asking questions regarding their experiences of childhood adversities, psychosis proneness, paranoia proneness, hallucination proneness, internal and external shame, guilt and self-disgust (see measures above). Upon completion of the questionnaires, participants were shown a debrief information sheet (See appendix I).

Ethical Considerations

Ethical approval was provided by the University of Edinburgh, School of Health in Social Science Research Ethics Committee (See appendix J and K). All information was stored securely. Data was saved and stored on the University of Edinburgh server and anonymised data was accessed remotely away from the university on the researcher's personal laptop via a VPN.

Statistical Analyses

IBM SPSS Statistics Version 25 was used for all statistical analysis. For the mediation analysis, PROCESS for SPSS (Hayes, 2013), the computational and modelling tool, was used.

Sample Size and Power Calculations

Previous literature was reviewed to determine the sample size by predicting the effect sizes for the current study. Medium and large effect sizes were reported for the relationship between childhood adversities with variables shame and self-disgust (Gilbert, 2003; Fowke et al., 2012, Simpson et al., 2020). Additionally, effect sizes were found between various types of childhood adversities and guilt, with two medium, one small and one large (Aakvaag et al., 2016). A recent systematic review reported mostly medium effect sizes with one small and one large effect size for the relationship between shame and psychosis, from 11 studies (Carden et al., 2020). Similarly, research has found medium and large effect sizes for the relationships between self-disgust and psychosis (Simpson et al., 2020). However, as there is limited research on the relationship between guilt and psychosis, no effect sizes were found, and medium effect sizes were assumed. Thus, for the purpose of power calculations, a medium effect size was assumed for all variables.

To establish the sample size for the current study, medium effect sizes were assumed based on the previous literature discussed above. To determine the sample size for the correlation analysis calculations outlined by Cohen (1988) suggest that for medium effects sizes and four independent variables 84 participants would be required to achieve a power level of 0.8 and an alpha level of 0.05. Green's (1991) formula was also used for determining the sample size for the regression analysis with the same power and alpha levels. This calculation suggested a minimum of 91 participants were needed for five predictor variables. Fritz and Mackinnon (2007) suggest that for mediation analysis a sample of at least 71 participants is needed for a medium effect size and adopting a power level of 0.8 and an alpha level of 0.05. As a result, the present study aimed to recruit a minimum sample of 91 participants.

Missing Data

Missing data was dealt with following Fox-Wasylyshyn and El-Masri's (2005) recommendations that if greater than 10 percent of items were missing on any questionnaire, data from these participants should be removed through listwise deletion. None of the participants who completed the online questionnaire had missing data, whereas all participants who did not complete the online questionnaire had at least 10 percent missing data on at least one of the questionnaires, therefore these 51 participants were excluded from the analysis.

Data Analysis

Data was screened to ensure that assumptions were met for further analysis. Boxplots were used to determine if there were any significant outliers. From the interpretation of boxplots, 10 outliers were detected across variables that were more than 1.5 box-lengths from the edge of the box (3 OLIFE, 4 LSHS-R, 1 PFQ-2, 2 SDS). These were kept in the analysis as inspection of their values did not reveal them to be extreme. The assumptions of linearity and homoscedasticity were investigated through the examination of scatterplots and showed no obvious pattern that those assumptions were not met.

Tests of normality showed there was a variation in distributions in the data with the majority being slightly positively skewed. To account for the variation in data, bootstrapping was used when analysing the data with n=2000 for correlation and regression analysis and n=5000 for the mediation analysis (Hayes, 2013). Indirect effects were deemed significant when the 95% bias corrected confidence intervals did not cross zero. Additionally, although a p value of less than 0.05 is normally used to define statistical significance, as the current study contained multiple analyses a value of p<.001 was adopted for the main analysis to control for type 1 errors (Field, 2013).

Regression analysis was run to determine whether social emotions predicted unique variance in proneness to psychosis and psychotic symptoms. Finally, mediation analyses were run with bootstrapping to explore the mediating relationships between ACEs and proneness to psychosis and psychotic symptoms. Within all mediation analysis ACEs were entered as the dependent variable and internal shame (ISS) as mediator. Proneness to psychosis (OLIFE) or proneness to psychotic symptoms (LSHS-R, PS, CogDis, IntAn) was entered as the independent variable.

Results

Descriptive Statistics

Descriptive statistics for demographic information and each variable are presented in tables 1 and 2.

Table 1: Descriptive statistics of demographic information (N=140)

Participant Characteristic	N (Percentage)
Male	21 (15%)
Female	118 (84.3%)
Transgender	1 (.7%)
Diagnosis of Psychosis	8 (5.7%)
Secondary Care input	51 (36.4%)

Table 2: Descriptive statistics of age and self-report measures (N=140)

Variable	Mean(±SD)
Age	38(±13.08).
ACEs	6.71(±5.10)
OLIFE	38.17(±18.78)
CogDis	13.14(±6.27)
IntAn	9.05(±6.57)
PS	47.87(±17.88)
LSHS-R	12.51(±10.34)
ISS	87.51(±19.14)
OAS	25.32(±16.18)
PFQ2-G	11.21(±4.79)
SDS	84.55(±11.31)

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, PS = Paranoia Scale, LSHS-R = Launay-Slade Hallucination Scale, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale

Correlational Analysis

Correlations for all variables are reported in table 3 (see table 4 for 95% confidence intervals). Age did not significantly correlate with any variable except for self-disgust, with younger participants reporting higher scores on SDS, however the level of correlation was relatively low. All variables measured through self-report questionnaires were reported to have significant positive correlations with all other self-report measures. This was specifically seen to be high between all psychosis and psychotic symptom proneness measures. Although ACEs significantly correlated with

all other self-report measures, the correlations between variables were small to moderate. From the social emotion variables, internal shame showed the highest correlations with psychosis and psychotic symptom proneness. Furthermore, correlations between all social emotion variables were particularly high. High correlations between these variables may suggest multicollinearity between variables (Field, 2013; Preacher & Hayes, 2008).

Table 3: Pearson correlations (N=140)

	Age	ACEs	OLIFE	CogDis	IntAn	PS	LSHS-R	ISS	OAS	PFQ2-G	SDS
Age	-										
ACEs	.12	-									
OLIFE	-.05	.49**	-								
CogDis	-.13	.40**	.87**	-							
IntAn	.11	.34**	.79**	.63**	-						
PS	-.08	.48**	.81**	.71**	.61**	-					
LSHS-R	-.07	.38**	.79**	.63**	.52**	.71**	-				
ISS	-.11	.49**	.81**	.78**	.63**	.80**	.64**	-			
OAS	-.08	.54**	.75**	.71**	.58**	.78**	.62**	.88**	-		
PFQ2-G	-.02	.53**	.67**	.60**	.53**	.66**	.55**	.76**	.77**	-	
SDS	-.18*	.42**	.45**	.43**	.27**	.44**	.35**	.60**	.64**	.55**	-

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, PS = Paranoia Scale, LSHS-R = Launay-Slade Hallucination Scale, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale
***p<.05 **p<.001**

Primary Regression Analysis

A six-step hierarchical regression was run with OLIFE as the dependant variable, to explore the effect of social emotions on psychosis proneness independent of any variance explained by age and gender (step 1) and ACEs (step 2). The full model of age, gender, ACEs, ISS, OAS, PDF2-G and SDS was statistically significant, (F(7,132)=40.72, p<.001) and explained 68.4% of the variance (see table 5). In the first step of the regression age and gender were not found to significantly predict psychosis proneness (F(2,137)=1.18, p=.310). When ACEs were added (step 2) this was found to significantly predict psychosis proneness (F(1,136)=43.89, p<.001) and accounted for an additional 24% of variance. Similarly, when internal shame was added (step 3), the model significantly predicted psychosis proneness (F(1, 135)=169.17, p<.001) and accounted for an additional 41.3%% of variance.

However, when external shame (step 4; F(1,134)=1.07, p=.302), guilt (step 5; F(1,133)=.824, p=.366) and self-disgust (step 6; F(1, 132)=3.64, p=.058; see table 5) were added, these were not found to significantly predict psychosis proneness. Additionally, ACEs were no longer a significant predictor when social emotion variables were added, when adopting a significance value of p<.001.

Table 4: 95% confidence intervals for Pearsons correlations

		Age	ACEs	OLIFE	CogDis	IntAn	PS	LSHS-R	ISS	OAS	Guilt	SDS
Age	Lower	-										
	Upper	-										
ACEs	Lower	-.05	-									
	Upper	.29	-									
OLIFE	Lower	-.22	.34	-								
	Upper	.13	.62	-								
CogDis	Lower	-.30	.25	.83	-							
	Upper	.04	.53	.90	-							
IntAn	Lower	-.06	.17	.73	.53	-						
	Upper	.27	.49	.84	.73	-						
PS	Lower	-.24	.33	.74	.64	.49	-					
	Upper	.10	.61	.86	.78	.72	-					
LSHSR	Lower	-.22	.21	.70	.53	.39	.60	-				
	Upper	.10	.53	.86	.72	.63	.80	-				
ISS	Lower	-.27	.34	.74	.71	.52	.73	.52	-			
	Upper	.07	.62	.87	.83	.73	.85	.74	-			
OAS	Lower	-.24	.41	.66	.63	.45	.69	.48	.83	-		
	Upper	.10	.66	.83	.78	.69	.85	.73	.92	-		
Guilt	Lower	-.17	.39	.58	.50	.41	.55	.41	.69	.69	-	
	Upper	.15	.65	.76	.68	.63	.75	.68	.82	.83	-	
SDS	Lower	-.33	.27	.32	.30	.10	.30	.19	.50	.54	.42	-
	Upper	-.004	.55	.57	.55	.43	.57	.49	.70	.74	.66	-

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, PS = Paranoia Scale, LSHS-R = Launay-Slade Hallucination Scale, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale

Table 5: Hierarchical regression predicting OLIFE scores

Variable	β	B (standardised)	t	p	R	R^2	Δ R^2	95% CI	
								Lower	Upper
Step 1					.13	.02	.02		
Age	-.05	-.04	-.42	.67				-.28	.21
Gender	5.65	.12	1.42	.16				-2.43	12.25
Step 2					.51	.26	.24		
Age	-.14	-.10	-1.32	.19				-.35	.08
Gender	3.47	.07	.99	.32				-2.89	8.67
ACEs	1.82	.50	6.63	<.001				1.21	2.37
Step 3					.82	.67	.41		
Age	.02	.01	.28	.78				-.12	.17
Gender	-.56	-.01 2	-.24	.81				-4.92	3.13
ACEs	.45	.12	2.11	.04				.01	.10
ISS	.74	.76	13.01	<.001				.61	.87
Step 4					.82	.67	.003		
Age	.02	.02	.31	.76				-.12	.17
Gender	-.46	-.01	-.19	.85				-4.79	3.25
ACEs	.39	.11	1.76	.08				-.06	.87
ISS	.65	.66	6.25	<.001				.44	.86
OAS	.13	.11	1.04	.31				-.11	.41
Step 5				.	.82	.66	.002		
Age	.02	.01	.28	.78				-.13	.17
Gender	-.03	-.001	-.01	.99				-4.58	3.90
ACEs	.34	.09	1.53	.13				-.09	.80
ISS	.62	.63	5.68	<.001				.40	.84
OAS	.10	.09	.77	.44				-.16	.38
PDF2-G	.30	.08	.91	.37				-.38	.95
Step 6					.83	.68	.01		
Age	-.003	-.00	-.04	.97				-.16	.15
Gender	1.14	.02	.46	.65				-3.42	5.14
ACEs	.39	.11	1.74	.09				-.02	.84
ISS	.62	.64	5.76	<.001				.40	.84
OAS	.16	.14	1.21	.23				-.11	.43
PDF2-G	.38	.10	1.17	.24				-.32	1.07
SDS	-.22	-.13	-1.91	.06				-.44	.02

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale

Secondary Regression Analysis

Similar results were found in secondary analysis within the same model looking at proneness to psychotic symptoms (LSHS-R, PS, CogDis and IntAn) as the dependant variables. Within all of these models the full model was statistically significant. Similar to the model of psychosis proneness, age

and gender alone did not significantly predict proneness to psychotic symptoms. When ACEs were added to the models in the second step this was found to significantly predict proneness to psychotic symptoms. Similarly, when internal shame was added to the model (step 3), the model significantly predicted proneness to psychotic symptoms. However, when external shame, guilt, and self-disgust were added these were not found to significantly predict psychosis proneness, when adopting a significance value of $p<.001$ (see table 6).

Consequently, the results reported from the regressions support the idea of multicollinearity between social emotion variables. Due to the high correlations between the variables and assumptions not being met, the only model that was deemed appropriate for further mediation analysis was the one which specified internal shame as the mediator. As a result, the final hypothesis will only be investigated in relation to internal shame.

Table 6: Hierarchical regression predicting proneness to psychotic symptoms

Variable	df	F	p	R	R^2	ΔR^2
LSHS-R	132	15.13	<.001			
1: Age and gender	137	.35	.71	.07	.005	.005
2: ACEs	136	24.40	<.001	.40	.16	.15
3: ISS	135	65.20	<.001	.66	.43	.28
4: OAS	134	1.64	.20	.66	.44	.01
5: PDF2-G	133	.36	.55	.66	.44	.001
6: SDS	132	1.37	.25	.67	.45	.01
PS	132	40.32	<.001			
1: Age and gender	137	.77	.47	.11	.01	.01
2: ACEs	136	42.71	<.001	.48	.25	.24
3: ISS	135	153.55	<.001	.81	.65	.40
4: OAS	134	8.37	.004	.82	.67	.02
5: PDF2-G	133	.04	.84	.82	.67	<.001
6: SDS	132	5.25	.02	.83	.68	.01
CogDis	132	30.51	<.001			
1: Age and gender	137	2.77	.07	.20	.04	.04
2: ACEs	136	27.78	<.001	.45	.20	.16
3: ISS	135	140.62	<.001	.78	.61	.41
4: OAS	134	.58	.45	.78	.61	.002
5: PDF2-G	133	.001	.97	.78	.61	<.001
6: SDS	132	2.51	.12	.79	.62	.01
IntAn	132	15.95	<.001			
1: Age and gender	137	.87	.42	.11	.01	.01
2: ACEs	136	16.85	<.001	.35	.12	.11
3: ISS	135	76.55	<.001	.66	.44	.32
4: OAS	134	.41	.52	.66	.44	.002
5: PDF2-G	133	.22	.64	.67	.44	.001
6: SDS	132	3.96	.05	.68	.46	.02

ACEs = Adverse Childhood Experiences, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, PS = Paranoia Scale, LSHS-R = Launay-Slade Hallucination Scale, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale

Primary Mediation Analysis

Psychosis Proneness

Primary mediation analysis was run to determine if internal shame mediated the relationship between ACEs and psychosis proneness (see table 7). Within the mediation analysis, ACEs, significantly predicted the mediator, ISS, ($F(1,138) = 42.66$, $p<.0001$), explaining 24% of the variance in internal shame.

Table 7: Mediation model showing bootstrapped indirect effects for ACEs as independent variable and ISS as mediator

Dependant Variable	*b*	SE	95% Bias Corrected Confidence Interval	
			Lower	Upper
OLIFE	1.34	.22	.89	1.77
LSHS-R	.59	.12	.37	.84
PS	1.27	.21	.85	1.68
CogDis	.46	.08	.31	.61
IntAn	.38	.08	.24	.54

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, LSHS-R = Launay-Slade Hallucination Scale, PS = Paranoia Scale, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, ISS = Internalised Shame Scale

When mediators were not included within the model, ACEs significantly predicted the dependant variable, psychosis proneness ($F(1,138) = 43.52$, $p<.0001$), explaining 23.98% of the variance in psychosis proneness. When mediators were included within the model, ACEs and internal shame together significantly predicted psychosis proneness, accounting for 67% of variance. This model was significant ($F(2,137) = 138.93$, $p<.0001$). When internal shame was included within the model, ACEs no longer predicted psychosis proneness when adopting a significance value of $p<.001$.

A coefficient of 1.34 was reported for the total indirect effect of ACEs on psychosis proneness through internal shame. The 95% bias corrected confidence intervals did not cross zero (0.89 to 1.77) indicating a significant total indirect effect. This model is shown diagrammatically in Figure 1.

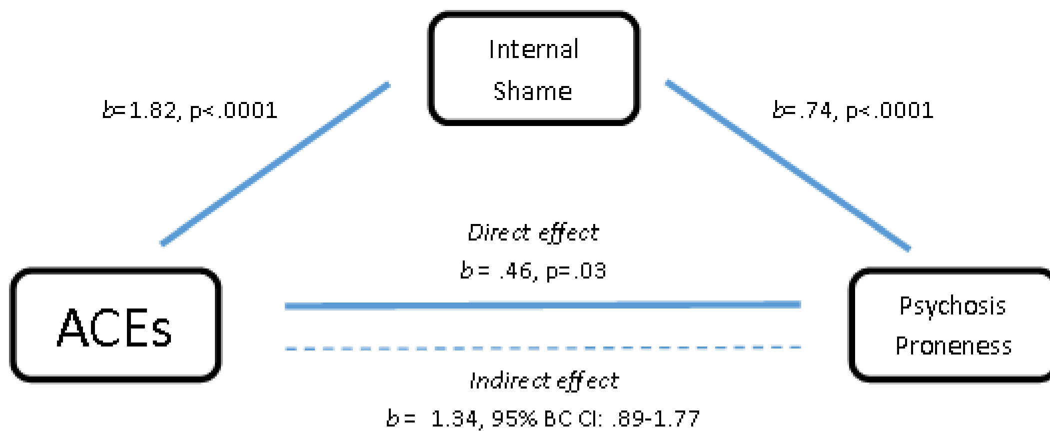

Figure 1: Mediation model with psychosis proneness as dependant variable

Secondary Mediation Analysis

Hallucination Proneness

Secondary mediation analysis was run to determine if internal shame mediated the relationship between ACEs and proneness to psychotic symptoms (see table 3). Within the secondary mediation analysis, when mediators were not included within the model, ACEs significantly predicted the dependant variable hallucination proneness (F(1,138) = 22.65, p<.0001) explaining 14.10% of the variance in hallucination proneness.

When mediators were included within the model, ACEs and internal shame together significantly predicted hallucination proneness accounting for 67% of variance (F(2,137) = 49.00, p<.0001). When internal shame was included within the model, ACEs no longer predicted hallucination proneness.

A coefficient of 0.59 was reported for the total indirect effect of ACEs on psychosis proneness through internal shame. The 95% bias corrected confidence intervals did not cross zero (0.37 to 0.84) indicating a significant total indirect effect. This model is shown diagrammatically in Figure 2.

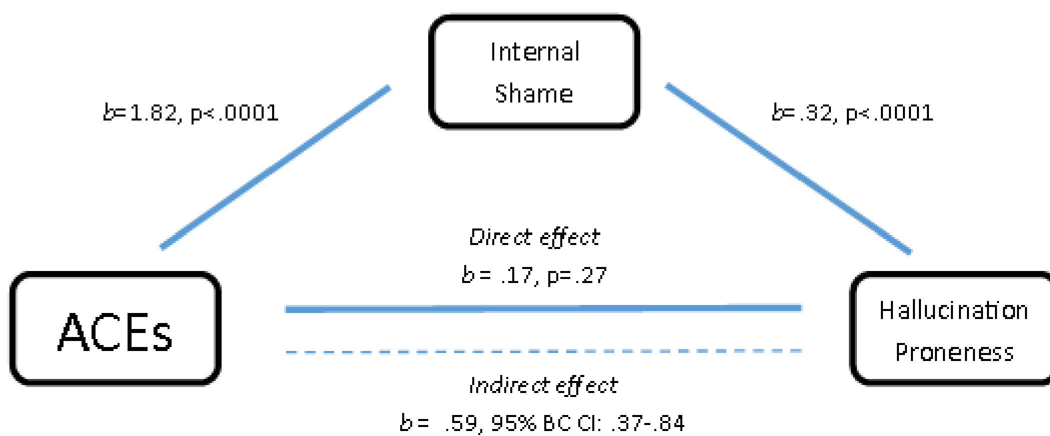

Figure 2: Mediation model with hallucination proneness as dependant variable

Paranoia Proneness

Within further secondary analysis, when mediators were not included within the model the independent variable, ACEs significantly predicted the dependant variable paranoia proneness (F(1,138) = 40.67, p<.0001) explaining 22.76% of the variance in paranoia proneness.

When mediators were included within the model, ACEs and internal shame together significantly predicted paranoia proneness accounting for 64.33% of variance (F(2,137) = 123.53, p<.0001). When internal shame was included within the model, ACEs no longer predicted psychosis proneness when adopting a significance value of p<.001.

A coefficient of 1.26 was reported for the total indirect effect of ACEs on psychosis proneness through internal shame. The 95% bias corrected confidence intervals did not cross zero (0.84 to 1.68) indicating a significant total indirect effect. This model is shown diagrammatically in Figure 3.

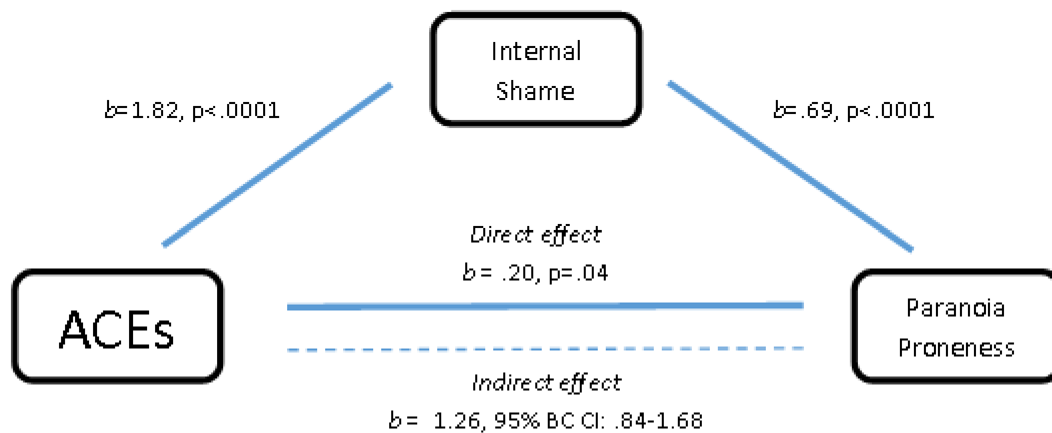

Figure 3: Mediation model with paranoia proneness as dependant variable

Thought Disorder Proneness

Within further secondary analysis, when mediators were not included within the model the independent variable, ACEs significantly predicted the dependant variable thought disorder proneness (F(1,138) = 25.95, p<.0001) explaining 15.83% of the variance in thought disorder proneness.

When mediators were included within the model, ACEs and internal shame together significantly predicted thought disorder proneness accounting for 60.56% of variance ($F(2,137)$ = 105.19, p<.0001). When internal shame was included within the model, ACEs no longer predicted thought disorder proneness.

A coefficient of 0.46 was reported for the total indirect effect of ACEs on psychosis proneness through internal shame. The 95% bias corrected confidence intervals did not cross zero (0.31 to 0.61) indicating a significant total indirect effect. This model is shown diagrammatically in Figure 4

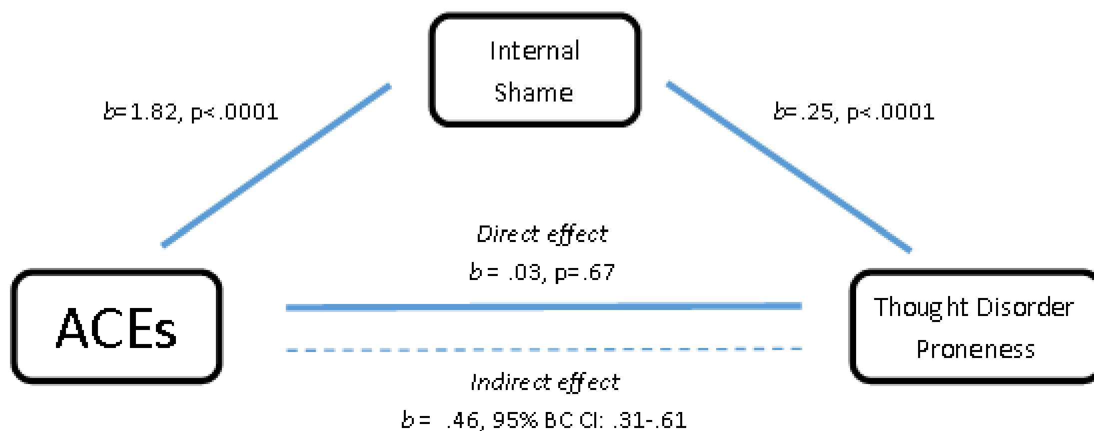

Figure 4: Mediation model with thought disorder proneness as dependant variable

Negative Symptom Proneness

Within further secondary analysis, when mediators were not included within the model the independent variable, ACEs significantly predicted the dependant variable negative symptom proneness ($F(1,138)$ = 18.13, p<.0001) explaining 11.61% of the variance in negative symptom proneness.

When mediators were included within the model, ACEs and internal shame together significantly predicted negative symptom proneness accounting for 79.97% of variance (F(2,137) = 45.94, p<.0001). When internal shame was included within the model, ACEs no longer predicted paranoia negative symptom proneness.

A coefficient of 0.38 was reported for the total indirect effect of ACEs on psychosis proneness through internal shame. The 95% bias corrected confidence intervals did not cross zero (0.24 to 0.54) indicating a significant total indirect effect. This model is shown diagrammatically in Figure 5.

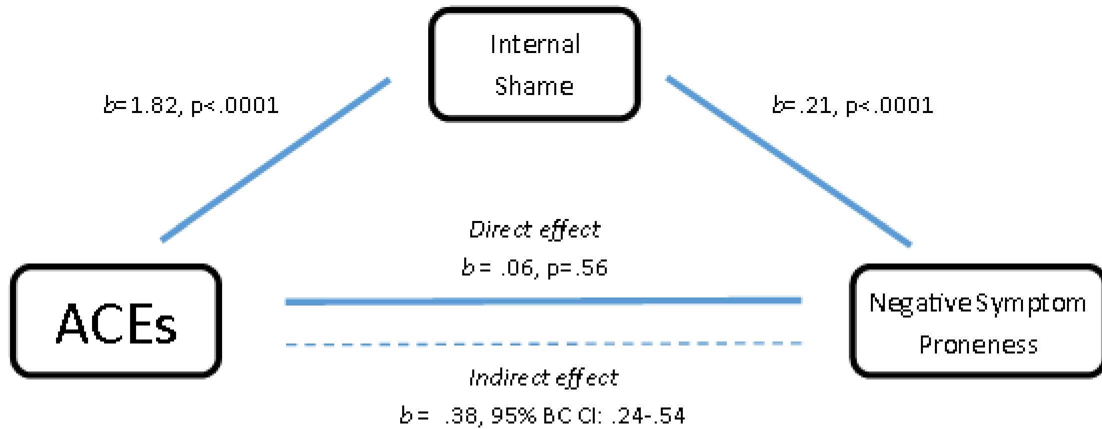

Figure 5: Mediation model with negative symptom proneness as dependant variable

Post Hoc Analysis

Independent sample t-tests were run to determine if there were any significant differences in scores on measures between male and female participants. No significant differences were found between male and female participants on measures except for the self-disgust scale (see table 8).

Table 8: T-tests grouped by male and female (N=140)

	Male (N=21)	Female (N=118)				95% CI	
Variable	Mean(±SD)	Mean(±SD)	t	df	p	Lower	Upper
ACEs	5.86(±4.91)	6.84(±5.16)	-.81	137	.42	-3.38	1.42
OLIFE	34.10(±17.53)	38.70(±18.94)	-1.04	137	.30	-13.39	4.17
CogDis	11.19(±6.41)	13.42(±6.20)	-1.51	137	.13	-5.15	.69
IntAn	10.00(±6.25)	8.79(±6.59)	.78	137	.44	-1.85	4.28
PS	46.76(±20.19)	47.86(±17.45)	-.26	137	.80	-9.47	7.28
LSHS-R	12.57(±8.86)	12.50(±10.65)	.03	137	.98	-4.80	4.95
ISS	80.76(±19.94)	88.54(±18.82)	-1.73	137	.09	-16.67	1.11
OAS	21.10(±16.47)	25.94(±16.09)	-1.27	137	.21	-12.41	2.72
PFQ2-G	11.24(±4.60)	11.20(±4.86)	.03	137	.98	-2.22	2.29
SDS	78.00(±9.95)	85.57(±11.12)	-2.92	137	.004	-12.70	-2.43

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, PS = Paranoia Scale, LSHS-R = Launay-Slade Hallucination Scale, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale

Further independent sample t-tests were run to determine if there were any significant differences in scores on measures between participants who had accessed secondary care mental health services and those who had not. Significant differences were found on the ACEs, OLIFE, LSHS-R, ISS, OAS, PDF2-G and the SDS measure. No significant differences were found on the PS or the CogDis and IntAn subscales (see table 9).

Table 9: T-tests grouped by secondary care input (N=140)

	Secondary Care Input (N=21)	No Secondary Care Input (N=118)				95% CI	
Variable	Mean(±SD)	Mean(±SD)	t	df	p	Lower	Upper
ACEs	11.88(±3.64)	6.39(±5.02)	3.04	138	.003	1.91	9.05
OLIFE	54.13(±23.63)	37.20(±18.11)	2.52	138	.01	3.65	30.19
CogDis	16.88(±5.54)	12.92(±6.26)	1.75	138	.08	-.53	8.44
IntAn	13.13(±8.18	8.80(±6.42)	1.82	138	.07	-.37	9.02
PS	64.63(±25.24)	46.86(±8.92)	1.97[a]	7.387[a]	.09	-3.39	38.93
LSHS-R	26.13(±9.79)	11.68(±9.81	4.04	138	<.001	7.38	21.51
ISS	107.38(±18.81)	86.31(±18.55)	3.12	138	.002	7.70	34.43
OAS	42.75(±14.38)	24.27(±15.71)	3.24	138	.001	7.22	29.75
PFQ2-G	16.86(±4.49)	10.87(±4.60)	3.59	138	<.001	2.70	9.31
SDS	94.38(±6.14)	83.95((±11.29)	2.58	138	.01	2.44	18.40

ACEs = Adverse Childhood Experiences, OLIFE = Oxford-Liverpool Inventory of Feelings and Experiences, CogDis = Cognitive Disorganisation, IntAn = Introvertive Anhedonia, PS = Paranoia Scale, LSHS-R = Launay-Slade Hallucination Scale, ISS = Internalised Shame Scale, OAS = Other As Shamer Scale, PFQ2-G = Personal Feelings Questionnaire 2 – Guilt Subscale, SDS = Self-Disgust Scale
[a]Levene test significant

Discussion

The purpose of the current study was to explore the relationships between multiple ACEs, social emotions and proneness to psychosis and psychotic symptoms. Analysis revealed in support of the first hypothesis that there were positive correlations between all variables. Internal shame had stronger associations with psychosis proneness and proneness to psychotic symptoms than the other social emotions. Prediction analysis revealed that ACEs and internal shame significantly predicted psychosis proneness and proneness to psychotic symptoms, however other social emotions did not when added to the model. Furthermore, ACEs no longer predicted proneness when other variables were added to the model and the majority of the variance was explained by internal shame. Consequently, the second hypothesis was only partially supported. Similarly, in relation to the final hypothesis, mediation analysis was only conducted on internal shame, which showed that internal shame significantly mediated the relationship between ACEs and proneness to psychosis and psychotic symptoms, including hallucinations, paranoia, thought disorder and negative symptom proneness. Therefore, the final hypothesis is partially supported.

Hypothesis 1: Multiple ACEs and social emotions will positively correlate with proneness to psychosis (primary aim) and proneness to psychotic symptoms (secondary aim)

In relation to the first hypothesis, the study set out to investigate whether there was a direct relationship between ACEs, social emotions and proneness to psychosis and psychotic symptoms. Previous research from a recent systematic review has shown inconsistent findings when addressing the relationship between shame and psychosis (Carden et al., 2020). Within both correlational and comparative studies, they reported mixed findings in relation to shame and diagnosis of psychosis. Most studies had utilised generic shame measures with some using external shame measures. However, none of these studies looked at the relationship when measuring internal shame independently from psychosis. Similarly, when investigating psychotic symptoms, only one study within the review investigated the relationship between internal shame and paranoia within not clinical populations reporting a positive association (Pinto-Gouveia et al. 2014). Due to the limited

research of internal shame and many studies used measures incorporating aspects of several types of shame, e.g. shame-proneness, internal shame etc. making it difficult to disentangle the types of shame measured.

The findings of the current study suggest that these discrepancies might be resolved by using measures of specific components of social emotions. For instance, results of the current study indicated that both internal and external shame as well as other social emotions guilt and self-disgust are independently associated with proneness to psychosis and psychotic symptoms. Similar to the current study Matos et al. (2013) investigated both internal and external shame in relation to paranoia and reported stronger correlations with external shame than internal. This differs from the current study which reported similar associations between both types of shame and paranoia. Despite this however, Matos et al. (2013) used the ESS to measure internalised shame, a measure designed to measure shame proneness, and with some items being more representative of external shame (Matos et al., 2013).

Along with significant associations between social emotions, specifically shame and psychosis, the current study reported significant associations between multiple ACEs and proneness to psychosis and psychotic symptoms. This concurs with the results of a meta-analysis reporting a dose-response relationship between ACEs and psychosis within 9 out of 10 studies (Varese et al., 2012). However, within the Varese et al. (2012) review, studies varied significantly in their assessment and definitions of ACEs, raising questions about the comparability of the studies and thus the validity of the findings. The current study attempted to resolve these limitations by using clear and specific definitions of ACEs along with utilising measures which encompass a wide-ranging variety of ACEs. It is worth noting that within the current study, although significant associations were found between these variables, they were only moderate correlations.

Hypothesis 2: Multiple ACEs and social emotions will significantly predict proneness to psychosis (primary aim) and proneness to psychotic symptoms (secondary aim)

In relation to the second hypothesis of the current study, predictive analysis showed that ACEs significantly predicted proneness to psychosis and psychotic symptoms. Internal shame was also found to significantly predict proneness to psychosis and psychotic symptoms when added to the model, however, this was seen to reduce the significance of ACEs as a predictor. This highlights the importance of internal shame in the development of psychosis and suggests that an individual's interpretation of experiences is important when assessing risk of developing psychosis or psychotic symptoms whereby the risk cannot solely be accounted for by the exposure to ACEs alone.

Furthermore, when other social emotions were added to the model (external shame, guilt and self-disgust), these did not significantly predict proneness to psychosis and psychotic symptoms. It is likely that this is due to high correlations between internal shame and other social emotions, whereby internal shame can account for some aspects of the other variables.

Hypothesis 3: Social Emotions will significantly mediate the relationship between Multiple ACEs and proneness to psychosis (primary aim) and proneness to psychotic symptoms (secondary aim)

The current study set out to determine whether social emotions, specifically internal and external shame, mediated the relationship between multiple ACEs and psychosis and psychotic symptom proneness. Particularly it aimed to disentangle how different types of shame may account for psychosis or psychotic symptom proneness. However, the results shown in relation to the first two hypotheses support the idea of multicollinearity between social emotion variables, whereby the results of correlational analysis reported strong positive associations between both types of shame with all other self-report measures, and regression models losing significance when social emotions were added. Consequently, only internal shame was investigated in relation to this hypothesis, and it is unclear if this effect is also seen with external shame or other social emotions.

Despite this, internal shame was found to significantly mediate the relationship between ACEs and proneness to psychosis and psychotic symptoms (hallucinations, paranoia, thought

disorder and negative symptoms). Together, with the results of the correlational analysis, this supports the diathesis-stress model (Rosenthal, 1963) outlined above. As moderate positive correlations were found between ACEs and psychosis, this supports past assertions that not everyone who has experienced ACEs goes on to develop mental health difficulties, specifically psychosis, in adulthood (Aafjes-van Doorn, 2020). However, the findings of the mediation analysis in relation to internal shame could help to explain individual difference in the susceptibility of developing psychosis or psychotic symptoms. Consequently, these findings further highlight the importance of an individual's interpretation of experiences, contributing to the development of internal shame, within an individual's risk of developing psychosis or psychotic symptoms whereby the risk cannot solely be accounted for by the exposure to ACEs alone.

Although this is the first study to examine the mediating relationship of internal shame in relation to psychosis proneness (primary aim), previous research has looked at this in relation to proneness to psychotic symptoms (secondary aim), specifically hallucinations and delusions. Bortolon and Raffard (2019) found shame, measured by the ESS to be a significant mediator of ACEs and hallucination proneness. The ESS was designed to measure shame proneness, however within past research the measure has been used to measure solely internal shame (e.g. Galhardo et al., 2011; Saggino et al., 2017). Some researchers have raised problems with this and pointed out the many items on the scale are more representative of external shame (Matos et al., 2013). Consequently, this makes it harder to disentangle the types of shame measured within the Borolon and Raffard (2019) study. Within the current study however, it was found that internal shame specifically, measured by the ISS, mediated the relationship between multiple ACEs and proneness to psychosis and psychotic symptoms. This is in line with McCarthy-Jones' (2017) hypothesis that shame may play an important role in mediating the relationship between ACEs and hallucinations.

Additionally, results of a recent systematic review should be considered when interpreting the findings of the current study. As previously outline in the introduction, Panagou and MacBeth

(2022) examined the intervening variables investigated within the relationship between ACEs and psychopathology in adulthood and concluded that within the literature there are multiple intervening variables which could help to explain the relationship, an effect which has also been reported when investigating psychosis (See Alameda et al., 2020; Sideli et al., 2020 and Williams et al., 2018 for review). This has implications for the current findings as it suggests that although internal shame significantly mediated the relationship between ACEs and proneness to psychosis and psychotic symptoms, it is not likely to be the only mediating variable within this indirect relationship and that there may be a variety of variables that could help to explain the relationship. Consequently, it is important to think of individual differences in one's vulnerability to ACEs and what may protect and increase the risk of individuals from developing feelings of internal shame within those at risk of developing psychosis. Furthermore, it is important to determine if internal shame solely mediates the relationship between ACEs and psychosis or whether it is due to an interaction with other intervening variables. Future research should set out to determine these issues.

Limitations

The current study addresses the issues of definition, operationalisation and measurement of ACEs and shame. However, some limitations arise through the measurement of ACEs. For instance, though the ACEs measure used within the current study was selected due to the inclusion of additional ACEs not captured by other measures (Cronholm et al., 2015), it failed to measure 'parental separation or death' which may have led to the exclusion of a potential ACE. Despite this, the current measure still incorporated a higher quantity of ACEs than other measures and was deemed most appropriate to address the aims of the current study in line with the dose-response hypothesis of ACEs. Furthermore, Sheffler et al. (2020) argued that it is the cumulative effect of ACEs opposed to type which are important, which may reduce the impact of the limitations discussed above.

Further limitations arise from the focus of 'multiple ACEs' within the current study. Despite the importance of measuring multiple ACEs due to the dose-response relationship with poor health outcomes (Dong et al. 2014), problems arise from how they are measured within current instruments. For instance, all instruments assume equal weighting for every ACE, e.g. 'living with someone with a mental illness' weighted the same as 'sexual abuse'. This fails to account for the differential impact of these experiences. Furthermore, the measure fails to recognise how multiple ACEs may interact, for instance having an 'incarcerated family member' may be protective against other ACEs such as 'physical abuse' or 'witnessing violence'. Whereas some ACEs such as 'living with someone with a mental illness' are risk factors for further experiences of abuse.

Moreover, this way of measuring ACEs is argued to be problematic due to the binary classification of ACEs being categorised as either "present" or "absent", whereby some ACEs need to occur frequently, e.g. physical abuse, and others only needing to occur once, e.g. sexual abuse, to be defined as present. This fails to account for individuals' interpretation of events as it assumes lack of adversity for some infrequent forms of abuse. Additionally, equal weighting is assumed for variations across specific adversities for instance repeated rape with one instance of sexual touching. This again fails to account for the context in which ACEs occur and their impact (Reidy et al. 2021). As a result, further research must focus on developing measures to gain further information on the interaction of ACEs and to assess its relationship with shame and psychosis.

Similarly, limitations arise when discussing other variables measured within the current study. One of the criticisms of past research in this field was the poor definition of shame and inclusion of measures measuring multiple types of shames making it difficult to disentangle what type of shame was being investigated or had a reported effect. The current study set out to clearly define and investigate different types of shame in relation to multiple ACEs and psychosis proneness, consequently the results of correlational analysis reported positive associations between both types of shame with all other self-report measures, with internal shame comprising of slightly

higher correlations with each variable. Despite this however, only internal shame was investigated as a mediating variable between multiple ACEs and proneness to psychosis and psychotic symptoms. Although this was specific to investigating and disentangling the type of shame measure, it is unclear if this effect is also seen with external shame, something that this study did not investigate. Despite this however, it has been argued whether, within the context of ACEs, internal and external shame can exist independently of each other as it is questionable whether external shame can occur without negative self-evaluations (Øktedalen et al., 2014). However, future research is needed to support this hypothesis and determine the mediating effect of external shame.

Further limitations arise when considering the sample used within the current research. Individuals were recruited through various online methods from the UK general population. Although this was enough to adequately power the primary aims of the study, the running of additional analysis for the secondary aims heightened the risk of type 1 errors (Field, 2013). The study attempted to account for this by adjusting the significance level to less than .001 for the main analysis. Furthermore, the recruitment of individuals from solely the UK general population raises some limitations when generalising the results to the general population in other countries and cultures as well as to clinical populations.

Within psychosis literature, there is a growing consensus that psychosis and psychotic symptoms, lie on a continuum, with less severe psychotic-like experiences being commonly found within the general population (Berry et al., 2018). Although individuals who score high on measures of psychosis or psychotic symptom proneness are not necessarily presenting with clinical disorders, longitudinal studies have reported an increased risk in the development of psychosis for this population (Chapman et al., 1994; Kwapil et al., 1997; Poulton et al., 2000; Yung et al., 1998). Furthermore, it has been argued that it is important to understand the mechanisms which may explain the transition between psychotic proneness and to developing psychosis. This could help in the prevention of psychosis, along with furthering understanding of the similarities and differences

between psychosis proneness and clinical psychosis (Krabbendam et al., 2005). Consequently, although the results cannot completely be generalised to psychosis populations, there is still a rationale for investigating within non-clinical populations.

It should also be noted that 36.4 percent of participants reported that they had previously accessed secondary care mental health services. The analysis revealed significant difference between participants who accessed secondary care services and those who did not on all outcome variables apart from proneness to paranoia, thought disorder and negative symptoms. Although this is only a small proportion of the population investigated, so makes it difficult to draw any concrete conclusions, it suggests that the same effect may be apparent within clinical populations, although further research is needed to confirm this. However, no information was collected on whether access to these services was a result of psychosis related difficulties.

Similarly, within the population recruited for the current study, 84.3 percent of individuals recruited identified as female. Within the results of the current study, there was no significant differences between male and female in relation to any self-report measures nor did gender significantly predict proneness to psychosis or psychotic symptoms. However, the uneven distribution of gender within the current sample makes it difficult to draw any concrete conclusions between gender groups and further reduces the generalisability of the findings to the wider general populations as these effects may differ with a greater distribution of male participants. Consequently, further research should identify if the effect is still present within male or evenly distributed populations.

Finally, the current study is the use of a cross sectional design which makes it difficult to draw any conclusions regarding causality (Sedgwick, 2014). Furthermore, research has suggested that using a cross-sectional design for mediation analysis may generate biased estimates of effects when compared to longitudinal studies (Maxwell & Cole, 2007). Additionally, the current study used retrospective self-report instruments to measure ACES, which recent research has found to be

subject to memory and bias effects when compared to prospective measures (Berg et al. 2021). Consequently, this raises questions of the validity of the ACEs measure used within the current study and should be considered when interpreting the findings. These limitations could be eradicated by the conduction of longitudinal studies, however this can require significantly longer timeframes and more resources, whereas cross-sectional studies are cheaper, require relatively small timeframes and are able to establish associations to provide a rationale for conducting longitudinal studies (Sedgwick, 2014). Despite this however, longitudinal studies are still needed to determine cause and effect and further research should investigate this.

Implications

The results of the current study support past research of non-clinical populations which show evidence of proneness to psychosis, paranoia and hallucinations (Fenigstein & Vanable, 1992; Freeman et al., 2005; Levitan et al., 1996; Pickering et al., 2008; Waters et al., 2003). Not all individuals who experience ACEs will go on to develop psychosis. Within the current study multiple ACEs and experiences of shame have been highlighted as potential risk factors to developing psychosis, and more specifically that internal shame may underpin the relationship between ACEs and psychosis. This suggests that individual's interpretation of ACEs is important when assessing an individual's risk of developing psychosis or psychotic symptoms and that the risk cannot solely be accounted for by the exposure to ACEs alone. This further highlights the significance of assessing within individuals with multiple ACEs the impact and prevalence of shame, and the impact it could have in early intervention and prevention of psychosis. This could further impact public health services by preventing more severe psychopathological presentation and high intensive treatment (Conus et al., 2014). However, the current study did not investigate positively valanced social emotions such as solidarity and empowerment which could act as protective factors towards developing psychosis or psychotic symptoms. Consequently, future research should investigate this.

Furthermore, understanding the mechanisms which underpin the relationship between ACEs and psychosis have many implications for treatment of psychosis. For instance, interventions such as Compassion Focused Therapy (CFT) have been developed to increase mental health through reducing feelings of shame and increasing self-compassion (Gilbert, 2014). With research suggesting positive outcomes in clinical populations, and more specifically, promise for treating conditions underpinned by shame (Craig et al., 2020). This current study has highlighted that CFT may be an appropriate intervention for prevention and treatment of psychosis, however further research is warranted within clinical populations to determine if these effects are still present.

References

Aafjes-van Doorn, K., Kamsteeg, C., & Silberschatz, G. (2020). Cognitive mediators of the relationship between adverse childhood experiences and adult psychopathology: A systematic review. *Development and Psychopathology, 32*(3), 1017-1029.

Aakvaag, H. F., Thoresen, S., Wentzel-Larsen, T., Dyb, G., Røysamb, E., & Olff, M. (2016). Broken and guilty since it happened: A population study of trauma-related shame and guilt after violence and sexual abuse. *Journal of affective disorders*, *204*, 16-23.

Alameda, L., Rodriguez, V., Carr, E., Aas, M., Trotta, G., Marino, P., ... & Murray, R. M. (2020). A systematic review on mediators between adversity and psychosis: potential targets for treatment. *Psychological Medicine*, *50*(12), 1966-1976.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European archives of psychiatry and clinical neuroscience, 256*(3), 174-186.

Andrews, B., Qian, M., & Valentine, J. D. (2002). Predicting depressive symptoms with a new measure of shame: The Experience of Shame Scale. *British Journal of Clinical Psychology*, *41*(1), 29-42.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5).* American Psychiatric Pub.

Bartlett, J. D., & Sacks, V. (2019). Adverse childhood experiences are different than child trauma, and it's critical to understand why. *Child Trends*. 1-3.

Bebbington, P. E., Bhugra, D., Brugha, T., Singleton, N., Farrell, M., Jenkins, R., ... & Meltzer, H. (2004). Psychosis, victimisation and childhood disadvantage: evidence from the second British National Survey of Psychiatric Morbidity. *The British Journal of Psychiatry, 185*(3), 220-226.

Bellis, M. A., Hughes, K., Leckenby, N., Hardcastle, K. A., Perkins, C., & Lowey, H. (2015). Measuring mortality and the burden of adult disease associated with adverse childhood experiences in England: a national survey. *Journal of public health, 37*(3), 445-454.

Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: differential susceptibility to environmental influences. *Psychological bulletin, 135*(6), 885.

Bentall, R. P., & Slade, P. D. (1985). Reliability of a scale measuring disposition towards hallucination: a brief report. *Personality and Individual Differences, 6*(4), 527-529.

Bernstein, D. P., & Fink, L. (1998). Childhood Trauma Questionnaire: A retrospective self-report San Antonio. *TX: Harcourt, Brace, and Company.*

Berry, K., Fleming, P., Wong, S., & Bucci, S. (2018). Associations between trauma, dissociation, adult attachment and proneness to hallucinations. *Behavioural and Cognitive Psychotherapy*, *46*(3), 292-301.

Birchwood, M., & Trower, P. (2006). Cognitive therapy for command hallucinations: not a quasi-neuroleptic. *Journal of Contemporary Psychotherapy, 36*(1), 1-7.

Blasini-Méndez, M. (2021). *Shame, Trauma, Resiliency and Alcohol Related Behaviors in Puerto Rican Populations* [Doctoral dissertation, George Fox University]. ProQuest Dissertations & Theses Global.

Born, J. L. (1998). *Male sexual orientation among religious men: a discriminant function analysis.* [Doctoral dissertation, George Fox University]. Digital Commons @ George Fox University.

Bortolon, C., & Raffard, S. (2019). Affective and cognitive factors associated with hallucination proneness in the general population: the role of shame and trauma-related intrusions. *Cognitive Neuropsychiatry*, *24*(6), 406-420.

Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Paediatrics and Child Health, 28*(3), 132-137.

Braun, T. D., Gorin, A. A., Puhl, R. M., Stone, A., Quinn, D. M., Ferrand, J., ... & Papasavas, P. (2021). Shame and self-compassion as risk and protective mechanisms of the internalised weight bias and emotional eating link in individuals seeking bariatric surgery. *Obesity Surgery, 31*(7), 3177-3187.

Breggin, P. R. (2015). Understanding and helping people with hallucinations based on the theory of negative legacy emotions. *The Humanistic Psychologist*, *43*(1), 70-87.

Burch, G. S. J., Hemsley, D. R., Corr, P. J., & Gwyer, P. (2006). The relationship between incidental learning and multi-dimensional schizotypy as measured by the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE). *Personality and Individual Differences*, *40*(2), 385-394.

Candea, D., & Szentagotai, A. (2013). Shame and psychopathology: From research to clinical practice. *Journal of cognitive and behavioral psychotherapies*, *13*(1), 101-113.

Carden, L. J., Saini, P., Seddon, C., Watkins, M., & Taylor, P. J. (2020). Shame and the psychosis continuum: A systematic review of the literature. *Psychology and Psychotherapy: Theory, Research and Practice, 93*(1), 160-186.

Caspi, A., Houts, R. M., Belsky, D. W., Goldman-Mellor, S. J., Harrington, H., Israel, S., ... & Moffitt, T. E. (2014). The p factor: one general psychopathology factor in the structure of psychiatric disorders?. *Clinical psychological science, 2*(2), 119-137.

Chapman, L. J., Chapman, J. P., Kwapil, T. R., Eckblad, M., & Zinser, M. C. (1994). Putatively psychosis-prone subjects 10 years later. *Journal of abnormal psychology*, *103*(2), 171.

Coates, A. A., & Messman-Moore, T. L. (2014). A structural model of mechanisms predicting depressive symptoms in women following childhood psychological maltreatment. *Child Abuse & Neglect*, *38*(1), 103-113.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences* (2nd eds.) Lawrence Erlbaum Associates.

Conus, P., Macneil, C., & McGorry, P. D. (2014). Public health significance of bipolar disorder: implications for early intervention and prevention. *Bipolar disorders*, *16*(5), 548-556.

Cook, D. R. (1994). *Internalised shame scale: Professional manual.* Channel Press.

Craig, C., Hiskey, S., & Spector, A. (2020). Compassion focused therapy: a systematic review of its effectiveness and acceptability in clinical populations. *Expert review of neurotherapeutics*, *20*(4), 385-400.

Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., ... & Fein, J. A. (2015). Adverse childhood experiences: Expanding the concept of adversity. *American journal of preventive medicine, 49*(3), 354-361.

Dahlstrom, W. G., Welsh, G. S., & Dahlstrom, L. E. (1975). An MMPI handbook, Volume 11: Research applications. University of Minnesota Press.

de Sousa, P., Sellwood, W., Griffiths, M., & Bentall, R. P. (2019). Disorganisation, thought disorder and socio-cognitive functioning in schizophrenia spectrum disorders. *The British Journal of Psychiatry, 214*(2), 103-112.

Deblinger, E., & Runyon, M. K. (2005). Understanding and treating feelings of shame in children who have experienced maltreatment. *Child maltreatment, 10*(4), 364-376.

Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., ... & Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child abuse & neglect*, *28*(7), 771-784.

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. *Australian & New Zealand Journal of Psychiatry*, *49*(7), 651-659.

Ellason, J. W., & Ross, C. A. (1997). Childhood trauma and psychiatric symptoms. *Psychological Reports*, *80*(2), 447-450.

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.

Feiring, C., & Taska, L. S. (2005). The persistence of shame following sexual abuse: A longitudinal look at risk and recovery. *Child maltreatment, 10*(4), 337-349.

Feiring, C., Taska, L., & Lewis, M. (1996). A process model for understanding adaptation to sexual abuse: The role of shame in defining stigmatization. *Child abuse & neglect, 20*(8), 767-782.

Fenigstein, A., & Vanable, P. A. (1992). Paranoia and self-consciousness. *Journal of personality and social psychology*, *62*(1), 129.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

Fonseca-Pedrero, E., Lemos-Giráldez, S., Paino, M., Sierra-Baigrie, S., Villazón-García, Ú., González, P. G. P., & Muñiz, J. (2010). Dimensionality of hallucinatory predisposition: Confirmatory factor analysis of the Launa-Slade Hallucination Scale-revised in college students. *Anales de Psicología/Annals of Psychology*, *26*(1), 41-48.

Fowke, A., Ross, S., & Ashcroft, K. (2012). Childhood maltreatment and internalised shame in adults with a diagnosis of bipolar disorder. *Clinical Psychology & Psychotherapy, 19*(5), 450-457.

Fox-Wasylyshyn, S. M., & El-Masri, M. M. (2005). Handling missing data in self-report measures. *Research in nursing & health*, *28*(6), 488-495.

Freeman, D., Garety, P. A., Bebbington, P. E., Smith, B., Rollinson, R., Fowler, D., ... & Dunn, G. (2005). Psychological investigation of the structure of paranoia in a non-clinical population. *The British Journal of Psychiatry, 186*(5), 427-435.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological science*, *18*(3), 233-239.

Galhardo, A., Pinto-Gouveia, J., Cunha, M., & Matos, M. (2011). The impact of shame and self-judgment on psychopathology in infertile patients. *Human reproduction*, *26*(9), 2408-2414.

Gibb, B. E., & Abela, J. R. (2008). Emotional abuse, verbal victimization, and the development of children's negative inferential styles and depressive symptoms. *Cognitive Therapy and Research, 32*(2), 161-176.

Gilbert, P. (1998). What is shame? Some core issues and controversies. In P. Gilbert & B. Andrews (Eds.) *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (p. 3–38). Oxford University Press.

Gilbert, P. (2003). Evolution, social roles, and the differences in shame and guilt. *Social Research: An International Quarterly*, *70*(4), 1205-1230.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6-41.

Gilbert, P., & Andrews, B. (Eds.). (1998). *Shame: Interpersonal behavior, psychopathology, and culture.* Oxford University Press.

Glier, S., Campbell, A., Nicopolis, M., Murphy, L., Pelletier-Baldelli, A., Walker, E., & Belger, A. (2020). Neuroendocrine Responses to Acute Psychosocial Stress are Predictive of Cognitive Disorganization in Adolescents. *Biological Psychiatry*, *87*(9), 423-424.

Gracie, A., Freeman, D., Green, S., Garety, P. A., Kuipers, E., Hardy, A., ... & Fowler, D. (2007). The association between traumatic experience, paranoia and hallucinations: a test of the predictions of psychological models. *Acta Psychiatrica Scandinavica, 116*(4), 280-289.

Green, S. B. (1991). How many subjects does it take to do a regression analysis. *Multivariate behavioral research*, *26*(3), 499-510.

Grindey, A., & Bradshaw, T. (2022). Do different adverse childhood experiences lead to specific symptoms of psychosis in adulthood? A systematic review of the current literature. *International journal of mental health nursing*, 1-20.

Goff, D. C., Brotman, A. W., Kindlon, D., Waites, M., & Amico, E. (1991). Self-reports of childhood abuse in chronically psychotic patients. *Psychiatry research, 37*(1), 73-80.

Goss, K., Gilbert, P., & Allan, S. (1994). An exploration of shame measures-I: The other as Shamer scale. *Personality and Individual differences, 17*(5), 713-717.

Harder, D. H., & Zalma, A. (1990). Two promising shame and guilt scales: A construct validity comparison. *Journal of personality assessment*, *55*(3-4), 729-745.

Hayes, A. F. (2013). Mediation, moderation, and conditional process analysis. *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* Guilford Publications.

Healy, C. J., Lee, K. A., & D'Andrea, W. (2021). Using psychedelics with therapeutic intent is associated with lower shame and complex trauma symptoms in adults with histories of child maltreatment. *Chronic Stress*, 5, 1-12.

Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2019). *Cochrane handbook for systematic reviews of interventions*. John Wiley & Sons.

Hunziker, E. (2013). *Child Maltreatment and Eating Disorders: An Investigation of Shame-proneness, Guilt-proneness, and Self-objectification as Mediating Variables* [Doctoral dissertation, University of South Dakota]. ProQuest Dissertations & Theses Global.

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., ... & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health, 2*(8), 356-366.

Janssen, I., Hanssen, M., Bak, M. L. F. J., Bijl, R. V., De Graaf, R., Vollebergh, W., ... & Van Os, J. (2003). Discrimination and delusional ideation. The British Journal of Psychiatry, 182(1), 71-76.

Kajeepeta, S., Gelaye, B., Jackson, C. L., & Williams, M. A. (2015). Adverse childhood experiences are associated with adult sleep disorders: a systematic review. *Sleep medicine*, *16*(3), 320-330.

Karatekin, C., & Hill, M. (2019). Expanding the original definition of adverse childhood experiences (ACEs). *Journal of Child & Adolescent Trauma, 12*(3), 289-306.

Kim, D., Bae, H., Han, C., Oh, H. Y., & MacDonald, K. (2013). Psychometric properties of the Childhood Trauma Questionnaire-Short Form (CTQ-SF) in Korean patients with schizophrenia. *Schizophrenia research*, *144*(1-3), 93-98.

Kessler, R. C., McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., ... & Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *The British journal of psychiatry, 197*(5), 378-385.

Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011). Shame, guilt, and depressive symptoms: a meta-analytic review. *Psychological bulletin, 137*(1), 68.

Krabbendam, L., Myin-Germeys, I., Bak, M., & Van Os, J. (2005). Explaining transitions over the hypothesised psychosis continuum. *Australian & New Zealand Journal of Psychiatry*, *39*(3), 180-186.

Kwapil, T. R., Miller, M. B., Zinser, M. C., Chapman, J., & Chapman, L. J. (1997). Magical ideation and social anhedonia as predictors of psychosis proneness: a partial replication. *Journal of abnormal psychology*, *106*(3), 491.

Lake, C. R. (2008). Hypothesis: grandiosity and guilt cause paranoia; paranoid schizophrenia is a psychotic mood disorder; a review. *Schizophrenia bulletin*, *34*(6), 1151-1162.

Lataster, T., van Os, J., Drukker, M., Henquet, C., Feron, F., Gunther, N., & Myin-Germeys, I. (2006). Childhood victimisation and developmental expression of non-clinical delusional ideation and hallucinatory experiences. *Social psychiatry and psychiatric epidemiology, 41*(6), 423-428.

Levitan, C., Ward, P. B., Catts, S. V., & Hemsley, D. R. (1996). Predisposition toward auditory hallucinations: The utility of the Launay-Slade Hallucination Scale in psychiatric patients. *Personality and Individual Differences, 21*(2), 287-289.

Lewis, H.B. (1971). *Shame and guilt in neurosis.* International Universities Press.

Lewis, M. (1992). *Shame: The exposed self*. Free Press.

Lewis, M. (1998). Shame and stigma. In P. Gilbert & B. Andrews (Eds.), *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (pp. 126–140). Oxford University Press.

Liu, R. T., Choi, J. Y., Boland, E. M., Mastin, B. M., & Alloy, L. B. (2013). Childhood abuse and stress generation: The mediational effect of depressogenic cognitive styles. *Psychiatry Research, 206*(2-3), 217-222.

Loader, P. (1998). Such a shame—A consideration of shame and shaming mechanisms in families. *Child Abuse Review: Journal of the British Association for the Study and Prevention of Child Abuse and Neglect, 7*(1), 44-57.

Lutgens, D., Gariepy, G., & Malla, A. (2017). Psychological and psychosocial interventions for negative symptoms in psychosis: systematic review and meta-analysis. *The British Journal of Psychiatry*, *210*(5), 324-332.

Masters, K. J. (1995). Environmental trauma and psychosis. *Journal of the American Academy of Child & Adolescent Psychiatry, 34*(10), 1258.

Mason, O., & Claridge, G. (2006). The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE): further description and extended norms. *Schizophrenia research*, *82*(2-3), 203-211.

Matos, M., Pinto-Gouveia, J., & Gilbert, P. (2013). The effect of shame and shame memories on paranoid ideation and social anxiety. *Clinical psychology & psychotherapy, 20*(4), 334-349.

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological methods*, *12*(1), 23.

McCarthy-Jones, S. (2017). Is shame hallucinogenic?. Frontiers in psychology, 8, 1310.Matos, M., Pinto-Gouveia, J., & Gilbert, P. (2013). The effect of shame and shame memories on paranoid ideation and social anxiety. *Clinical psychology & psychotherapy, 20*(4), 334-349.

McGinniss, K. D. (1997). *Shame: Correlates of self-consciousness, trauma and parental behavior*. [Doctoral dissertation, The Wright Institute]. ProQuest Dissertations & Theses Global.

McLaughlin, K. A. (2016). Future directions in childhood adversity and youth psychopathology. *Journal of Clinical Child & Adolescent Psychology*, *45*(3), 361-382.

Mirowsky, J., & Ross, C. E. (1983). Paranoia and the structure of powerlessness. *American Sociological Review, 48*(2) 228-239.

Mueser, K. T., Goodman, L. B., Trumbetta, S. L., Rosenberg, S. D., Osher, F. C., Vidaver, R., ... & Foy, D. W. (1998). Trauma and posttraumatic stress disorder in severe mental illness. *Journal of consulting and clinical psychology, 66*(3), 493.

Øktedalen, T., Hagtvet, K. A., Hoffart, A., Langkaas, T. F., & Smucker, M. (2014). The Trauma Related Shame Inventory: Measuring trauma-related shame among patients with PTSD. *Journal of Psychopathology and Behavioral Assessment, 36*(4), 600-615.

Panagou, C., & MacBeth, A. (2022). Deconstructing pathways to resilience: A systematic review of associations between psychosocial mechanisms and transdiagnostic adult mental health outcomes in the context of Adverse Childhood Experiences (ACEs). *Clinical Psychology & Psychotherapy*.

Parsa, S. (2018). Psychological Construction of Shame in Disordered Eating. *New Psychology Bulletin, 15*(1), 11-19.

Peh, O. H., Rapisarda, A., & Lee, J. (2019). Childhood adversities in people at ultra-high risk (UHR) for psychosis: a systematic review and meta-analysis. *Psychological medicine*, *49*(7), 1089-1101.

Pickering, L., Simpson, J., & Bentall, R. P. (2008). Insecure attachment predicts proneness to paranoia but not hallucinations. *Personality and Individual Differences, 44*(5), 1212-1224.

Pinto-Gouveia, J., Matos, M., Castilho, P., & Xavier, A. (2014). Differences between depression and paranoia: The role of emotional memories, shame and subordination. *Clinical psychology & psychotherapy, 21*(1), 49-61.

Poulton, R., Caspi, A., Moffitt, T. E., Cannon, M., Murray, R., & Harrington, H. (2000). Children's self-reported psychotic symptoms and adult schizophreniform disorder: a 15-year longitudinal study. *Archives of general psychiatry*, *57*(11), 1053-1058.

Powell, P. A., Overton, P. G., & Simpson, J. (2015). Reflections on the revolting self: A commentary and further directions. In P. A. Powell, P. G. Overton & J. Simpson (Eds.), T*he revolting self:*

Perspectives on the psychological, social and clinical implications of self-directed disgust. Karnac.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891.

Rahm, G., Renck, B., & Ringsberg, K. C. (2013). Psychological distress among women who were sexually abused as children. *International Journal of Social Welfare, 22*(3), 269–278.

Rawlings, D., & Freeman, J. L. (1997). Measuring paranoia/suspiciousness. In G. Claridge (Eds.), *Schizotypy: Implications for illness and health* (pp. 38–60). Oxford University Press.

Read, J. (1997). Child abuse and psychosis: A literature review and implications for professional practice. *Professional Psychology: Research and Practice, 28*(5), 448.

Reidy, D. E., Niolon, P. H., Estefan, L. F., Kearns, M. C., D'Inverno, A. S., Marker, C. D., & Merrick, M. T. (2021). Measurement of adverse childhood experiences: it matters. *American journal of preventive medicine*, *61*(6), 821-830.

Romme, M. A., & Escher, A. D. (1989). Hearing voices. *Schizophrenia bulletin*, *15*(2), 209-216.

Rosenthal, D. (1963). A suggested conceptual framework. In: D. Rosenthal (Eds.) *The Genain quadruplets* (pp. 505-516). Basic Books.

Ross, C. A., & Joshi, S. (1992). Paranormal experiences in the general population. *Journal of Nervous and Mental Disease*, *180*(6), 357–361.

Rybak, C. J., & Brown, B. (1996). Assessment of internalised shame: Validity and reliability of the internalised shame scale. *Alcoholism Treatment Quarterly, 14*(1), 71-83.

Saggino, A., Carlucci, L., Sergi, M. R., D'Ambrosio, I., Fairfield, B., Cera, N., & Balsamo, M. (2017). A validation study of the psychometric properties of the Other as Shamer Scale–2. *SAGE Open*, *7*(2), 1-10.

Sachs-Ericsson, N., Verona, E., Joiner, T., & Preacher, K. J. (2006). Parental verbal abuse and the mediating role of self-criticism in adult internalizing disorders. *Journal of affective disorders, 93(1-3)*, 71-78.

Scott, J., Chant, D., Andrews, G., Martin, G., & McGrath, J. (2007). Association between trauma exposure and delusional experiences in a large community-based sample. *The British Journal of Psychiatry*, *190*(4), 339-343.

Sedgwick, P. (2014). Cross sectional studies: advantages and disadvantages. *Bmj*, *348*.

Schreier, A., Wolke, D., Thomas, K., Horwood, J., Hollis, C., Gunnell, D., ... & Salvi, G. (2009). Prospective study of peer victimization in childhood and psychotic symptoms in a nonclinical population at age 12 years. *Archives of general psychiatry, 66*(5), 527-536.

Segal, Z. V. (1988). Appraisal of the self-schema construct in cognitive models of depression. *Psychological bulletin, 103*(2), 147.

Sheffler, J. L., Stanley, I., & Sachs-Ericsson, N. (2020). ACEs and mental health outcomes. In *Adverse childhood experiences* (pp. 47-69). Academic Press.

Skehan, D., Larkin, W., & Read, J. (2012). Childhood adversity and psychosis: A literature review with clinical and societal implications. *Psychoanalysis, Culture & Society*, *17*(4), 373-391.

Shein, L. (2018). The Evolution of Shame and Guilt. *PLoSONE, 13*(7), 1-11.

Shevlin, M., Dorahy D Clin Psych, Ph D, M. J., & Adamson, G. (2007). Trauma and psychosis: an analysis of the National Comorbidity Survey. *American Journal of Psychiatry*, *164*(1), 166-169.

Shevlin, M., Murphy, J., Read, J., Mallett, J., Adamson, G., & Houston, J. E. (2011). Childhood adversity and hallucinations: a community-based study using the National Comorbidity Survey Replication. *Social psychiatry and psychiatric epidemiology*, *46*(12), 1203-1210.

Sideli, L., Murray, R. M., Schimmenti, A., Corso, M., La Barbera, D., Trotta, A., & Fisher, H. L. (2020). Childhood adversity and psychosis: A systematic review of bio-psycho-social mediators and moderators. *Psychological medicine*, *50*(11), 1761-1782.

Simpson, J., Helliwell, B., Varese, F., & Powell, P. (2020). Self-disgust mediates the relationship between childhood adversities and psychosis. *British Journal of Clinical Psychology*, *59*(2), 260-275.

Sitko, K., Bentall, R. P., Shevlin, M., & Sellwood, W. (2014). Associations between specific psychotic symptoms and specific childhood adversities are mediated by attachment styles: an analysis of the National Comorbidity Survey. Psychiatry research, 217(3), 202-209.

Slade, P. D., & Bentall, R. P. (1988). *Sensory deception: A scientific analysis of hallucination.* Cambridge University Press

Sombke, C. R. (2001). *Testing models of depression and paranoia in men and women: The role of cognitive style, guilt, shame, and defense mechanisms*. Utah State University.

Stricklen, J. D. (2019). *The Weight of Shame and Trauma in Bariatric Patients*. George Fox University.

Thomson, P., & Jaque, S. V. (2018a). Childhood adversity and the creative experience in adult professional performing artists. *Frontiers in Psychology, 9*(111), 1-9.

Thomson, P., & Jaque, S. (2018b). Shame and anxiety: The mediating role of childhood adversity in dancers. *Journal of Dance Medicine & Science, 22*(2), 100-108.

Trauelsen, A. M., Bendall, S., Jansen, J. E., Nielsen, H. G. L., Pedersen, M. B., Trier, C. H., ... & Simonsen, E. (2015). Childhood adversity specificity and dose-response effect in non-affective first-episode psychosis. *Schizophrenia research*, *165*(1), 52-59.

Turner, J. E. (2014). Researching state shame with the experiential shame scale. *The Journal of psychology*, *148*(5), 577-601.

Van Buren, B. R., & Meehan, K. B. (2015). Child maltreatment and vulnerable narcissism: The roles of shame and disavowed need. *Journal of the American Psychoanalytic Association, 63*(3), 555-561.

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.

Vellante, M., Larøi, F., Cella, M., Raballo, A., Petretto, D. R., & Preti, A. (2012). Hallucination-like experiences in the nonclinical population. *The Journal of nervous and mental disease*, *200*(4), 310-315.

Waters, F. A., Badcock, J. C., & Maybery, M. T. (2003). Revision of the factor structure of the Launay–Slade Hallucination Scale (LSHS-R). *Personality and Individual Differences, 35*(6), 1351-1357.

Whitfield, C. L., Dube, S. R., Felitti, V. J., & Anda, R. F. (2005). Adverse childhood experiences and hallucinations. *Child abuse & neglect*, *29*(7), 797-810.

Williams, J., Bucci, S., Berry, K., & Varese, F. (2018). Psychological mediators of the association between childhood adversities and psychosis: A systematic review. *Clinical psychology review*, *65*, 175-196.

Wojcik, K. D., Cox, D. W., & Kealy, D. (2019). Adverse childhood experiences and shame-and guilt-proneness: Examining the mediating roles of interpersonal problems in a community sample. Child Abuse & Neglect, 19(1), 1-9.

Wong, Y., & Tsai, J. (2007). Cultural models of shame and guilt. In J. L. Tracy, R. W. Robins & J. P. Tangney (Eds). *The self-conscious emotions: Theory and research* (pp. 209 -223). Guilford Press.

Wood, L., & Irons, C. (2016). Exploring the associations between social rank and external shame with experiences of psychosis. *Behavioural and cognitive psychotherapy, 44*(5), 527-538.

Yung, A. R., Phillips, L. J., McGorry, P. D., McFarlane, C. A., Francey, S., Harrigan, S., ... & Jackson, H. J. (1998). Prediction of psychosis: a step towards indicated prevention of schizophrenia. *The British Journal of Psychiatry*, *172*(S33), 14-20.

Full Thesis References

Aafjes-van Doorn, K., Kamsteeg, C., & Silberschatz, G. (2020). Cognitive mediators of the relationship between adverse childhood experiences and adult psychopathology: A systematic review. *Development and Psychopathology, 32*(3), 1017-1029.

Aakvaag, H. F., Thoresen, S., Wentzel-Larsen, T., Dyb, G., Røysamb, E., & Olff, M. (2016). Broken and guilty since it happened: A population study of trauma-related shame and guilt after violence and sexual abuse. *Journal of affective disorders*, *204*, 16-23.

Afifi, T. O., Enns, M. W., Cox, B. J., Asmundson, G. J., Stein, M. B., & Sareen, J. (2008). Population attributable fractions of psychiatric disorders and suicide ideation and attempts associated with adverse childhood experiences. *American Journal of Public Health, 98*(5), 946–952.

Agency for Healthcare Research and Quality (AHRQ). (2012). Development of the RTI item bank on risk of bias and precision of observational studies. *Journal of clinical epidemiology*, *65*(2), 163-178.

Alameda, L., Rodriguez, V., Carr, E., Aas, M., Trotta, G., Marino, P., ... & Murray, R. M. (2020). A systematic review on mediators between adversity and psychosis: potential targets for treatment. *Psychological Medicine*, *50*(12), 1966-1976.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5).* American Psychiatric Pub.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C. H., Perry, B. D., ... & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European archives of psychiatry and clinical neuroscience, 256*(3), 174-186.

Andrews, B., Qian, M., & Valentine, J. D. (2002). Predicting depressive symptoms with a new measure of shame: The Experience of Shame Scale. *British Journal of Clinical Psychology*, *41*(1), 29-42.

Bartlett, J. D., & Sacks, V. (2019). Adverse childhood experiences are different than child trauma, and it's critical to understand why. *Child Trends*. 1-3.

Bebbington, P. E., Bhugra, D., Brugha, T., Singleton, N., Farrell, M., Jenkins, R., ... & Meltzer, H. (2004). Psychosis, victimisation and childhood disadvantage: evidence from the second British National Survey of Psychiatric Morbidity. *The British Journal of Psychiatry, 185*(3), 220-226.

Bellis, M. A., Hughes, K., Leckenby, N., Hardcastle, K. A., Perkins, C., & Lowey, H. (2015). Measuring mortality and the burden of adult disease associated with adverse childhood experiences in England: a national survey. *Journal of public health, 37*(3), 445-454.

Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: differential susceptibility to environmental influences. *Psychological bulletin, 135*(6), 885.

Bentall, R. P., & Slade, P. D. (1985). Reliability of a scale measuring disposition towards hallucination: a brief report. *Personality and Individual Differences, 6*(4), 527-529.

Bergen, H. A., Martin, G., Richardson, A. S., Allison, S., & Roeger, L. (2004). Sexual abuse, antisocial behaviour and substance use: Gender differences in young community adolescents. *Australian & New Zealand Journal of Psychiatry*, *38*(1-2), 34-41.

Bernstein, D. P., & Fink, L. (1998). *Childhood Trauma Questionnaire: A retrospective self-report San Antonio.* Harcourt, Brace, and Company.

Berry, K., Fleming, P., Wong, S., & Bucci, S. (2018). Associations between trauma, dissociation, adult attachment and proneness to hallucinations. *Behavioural and Cognitive Psychotherapy*, *46*(3), 292-301.

Berry, K., Fleming, P., Wong, S., & Bucci, S. (2018). Associations between trauma, dissociation, adult attachment and proneness to hallucinations. *Behavioural and cognitive psychotherapy, 46*(3), 292.

Birchwood, M., & Trower, P. (2006). Cognitive therapy for command hallucinations: not a quasi-neuroleptic. *Journal of Contemporary Psychotherapy, 36*(1), 1-7.

Birchwood, M., Jackson, C., Brunet, K., Holden, J., & Barton, K. (2012). Personal beliefs about illness questionnaire-revised (PBIQ-R): Reliability and validation in a first episode sample. *British Journal of Clinical Psychology*, *51*(4), 448-458.

Blasini-Méndez, M. (2021). *Shame, Trauma, Resiliency and Alcohol Related Behaviors in Puerto Rican Populations* [Doctoral dissertation, George Fox University]. ProQuest Dissertations & Theses Global.

Born, J. L. (1998). *Male sexual orientation among religious men: a discriminant function analysis.* [Doctoral dissertation, George Fox University]. Digital Commons @ George Fox University.

Bortolon, C., & Raffard, S. (2019). Affective and cognitive factors associated with hallucination proneness in the general population: the role of shame and trauma-related intrusions. *Cognitive Neuropsychiatry*, *24*(6), 406-420.

Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Paediatrics and Child Health, 28*(3), 132-137.

Braun, T. D., Gorin, A. A., Puhl, R. M., Stone, A., Quinn, D. M., Ferrand, J., ... & Papasavas, P. (2021). Shame and self-compassion as risk and protective mechanisms of the internalised weight bias and emotional eating link in individuals seeking bariatric surgery. *Obesity Surgery, 31*(7), 3177-3187.

Breggin, P. R. (2015). Understanding and helping people with hallucinations based on the theory of negative legacy emotions. *The Humanistic Psychologist*, *43*(1), 70-87.

Burch, G. S. J., Hemsley, D. R., Corr, P. J., & Gwyer, P. (2006). The relationship between incidental learning and multi-dimensional schizotypy as measured by the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE). *Personality and Individual Differences*, *40*(2), 385-394.

Candea, D., & Szentagotai, A. (2013). Shame and psychopathology: From research to clinical practice. *Journal of cognitive and behavioral psychotherapies*, *13*(1), 101-113.

Carden, L. J., Saini, P., Seddon, C., Watkins, M., & Taylor, P. J. (2020). Shame and the psychosis continuum: A systematic review of the literature. *Psychology and Psychotherapy: Theory, Research and Practice, 93*(1), 160-186.

Caspi, A., Houts, R. M., Belsky, D. W., Goldman-Mellor, S. J., Harrington, H., Israel, S., ... & Moffitt, T. E. (2014). The p factor: one general psychopathology factor in the structure of psychiatric disorders?. *Clinical psychological science, 2*(2), 119-137.

Centre for Reviews and Dissemination (2009). Systematic Reviews: CRD's Guidance for Undertaking Reviews in Healthcare. York Publishing Services Ltd.

Chapman, L. J., Chapman, J. P., Kwapil, T. R., Eckblad, M., & Zinser, M. C. (1994). Putatively psychosis-prone subjects 10 years later. *Journal of abnormal psychology*, *103*(2), 171.

Coates, A. A., & Messman-Moore, T. L. (2014). A structural model of mechanisms predicting depressive symptoms in women following childhood psychological maltreatment. *Child Abuse & Neglect*, *38*(1), 103-113.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences* (2nd eds.) Lawrence Erlbaum Associates.

Conus, P., Macneil, C., & McGorry, P. D. (2014). Public health significance of bipolar disorder: implications for early intervention and prevention. *Bipolar disorders*, *16*(5), 548-556.

Cook, D. R. (1994). *Internalised shame scale: Professional manual.* Channel Press.

Craig, C., Hiskey, S., & Spector, A. (2020). Compassion focused therapy: a systematic review of its effectiveness and acceptability in clinical populations. *Expert review of neurotherapeutics*, *20*(4), 385-400.

Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., ... & Fein, J. A. (2015). Adverse childhood experiences: Expanding the concept of adversity. *American journal of preventive medicine, 49*(3), 354-361.

Dahlstrom, W. G., Welsh, G. S., & Dahlstrom, L. E. (1975). An MMPI handbook, Volume 11: Research applications. University of Minnesota Press.

de Sousa, P., Sellwood, W., Griffiths, M., & Bentall, R. P. (2019). Disorganisation, thought disorder and socio-cognitive functioning in schizophrenia spectrum disorders. *The British Journal of Psychiatry, 214*(2), 103-112.

Deblinger, E., & Runyon, M. K. (2005). Understanding and treating feelings of shame in children who have experienced maltreatment. *Child maltreatment, 10*(4), 364-376.

Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., ... & Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child abuse & neglect, 28*(7), 771-784.

Dube, S. R., Miller, J. W., Brown, D. W., Giles, W. H., Felitti, V. J., Dong, M., & Anda, R. F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health*, *38*(4), 444.e1-e10.

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. *Australian & New Zealand Journal of Psychiatry*, *49*(7), 651-659.

Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. *American Journal of Psychiatry*, *160*(8), 1453-1460.

Ellason, J. W., & Ross, C. A. (1997). Childhood trauma and psychiatric symptoms. *Psychological Reports*, *80*(2), 447-450.

Feiring, C., & Taska, L. S. (2005). The persistence of shame following sexual abuse: A longitudinal look at risk and recovery. *Child maltreatment, 10*(4), 337-349.

Feiring, C., Simon, V. A., & Cleland, C. M. (2009). Childhood sexual abuse, stigmatization, internalizing symptoms, and the development of sexual difficulties and dating aggression. *Journal of consulting and clinical psychology*, *77*(1), 127.

Feiring, C., Taska, L., & Lewis, M. (1996). A process model for understanding adaptation to sexual abuse: The role of shame in defining stigmatization. *Child abuse & neglect, 20*(8), 767-782.

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.

Fenigstein, A., & Vanable, P. A. (1992). Paranoia and self-consciousness. *Journal of personality and social psychology*, *62*(1), 129.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage.

Fonseca-Pedrero, E., Lemos-Giráldez, S., Paino, M., Sierra-Baigrie, S., Villazón-García, Ú., González, P. G. P., & Muñiz, J. (2010). Dimensionality of hallucinatory predisposition: Confirmatory factor analysis of the Launa-Slade Hallucination Scale-revised in college students. *Anales de Psicología/Annals of Psychology*, *26*(1), 41-48.

Fowke, A., Ross, S., & Ashcroft, K. (2012). Childhood maltreatment and internalised shame in adults with a diagnosis of bipolar disorder. *Clinical Psychology & Psychotherapy, 19*(5), 450-457.

Fox-Wasylyshyn, S. M., & El-Masri, M. M. (2005). Handling missing data in self-report measures. *Research in nursing & health*, *28*(6), 488-495.

Freeman, D., Garety, P. A., Bebbington, P. E., Smith, B., Rollinson, R., Fowler, D., ... & Dunn, G. (2005). Psychological investigation of the structure of paranoia in a non-clinical population. *The British Journal of Psychiatry, 186*(5), 427-435.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological science*, *18*(3), 233-239.

Galhardo, A., Pinto-Gouveia, J., Cunha, M., & Matos, M. (2011). The impact of shame and self-judgment on psychopathology in infertile patients. *Human reproduction*, *26*(9), 2408-2414.

Gibb, B. E., & Abela, J. R. (2008). Emotional abuse, verbal victimization, and the development of children's negative inferential styles and depressive symptoms. *Cognitive Therapy and Research, 32*(2), 161-176.

Gilbert, P. (1998). What is shame? Some core issues and controversies. In P. Gilbert & B. Andrews (Eds.) *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (p. 3–38). Oxford University Press.

Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy: An International Journal of Theory & Practice*, *7*(3), 174-189.

Gilbert, P. (2003). Evolution, social roles, and the differences in shame and guilt. *Social Research: An International Quarterly*, *70*(4), 1205-1230.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6-41.

Gilbert, P., & Andrews, B. (Eds.). (1998). Shame: Interpersonal behavior, psychopathology, and culture. Oxford University Press.

Glier, S., Campbell, A., Nicopolis, M., Murphy, L., Pelletier-Baldelli, A., Walker, E., & Belger, A. (2020). Neuroendocrine Responses to Acute Psychosocial Stress are Predictive of Cognitive Disorganization in Adolescents. *Biological Psychiatry*, *87*(9), 423-424.

Goff, D. C., Brotman, A. W., Kindlon, D., Waites, M., & Amico, E. (1991). Self-reports of childhood abuse in chronically psychotic patients. *Psychiatry research, 37*(1), 73-80.

Goss, K., Gilbert, P., & Allan, S. (1994). An exploration of shame measures-I: The other as Shamer scale. *Personality and Individual differences, 17*(5), 713-717.

Gracie, A., Freeman, D., Green, S., Garety, P. A., Kuipers, E., Hardy, A., ... & Fowler, D. (2007). The association between traumatic experience, paranoia and hallucinations: a test of the predictions of psychological models. *Acta Psychiatrica Scandinavica, 116*(4), 280-289.

Green, S. B. (1991). How many subjects does it take to do a regression analysis. *Multivariate behavioral research*, *26*(3), 499-510.

Grindey, A., & Bradshaw, T. (2022). Do different adverse childhood experiences lead to specific symptoms of psychosis in adulthood? A systematic review of the current literature. *International journal of mental health nursing,* 1-20.

Harder, D. H., & Zalma, A. (1990). Two promising shame and guilt scales: A construct validity comparison. *Journal of personality assessment*, *55*(3-4), 729-745.

Harder, D.W., Cutler, L. & Rockart, L. (1992). Assessment of shame and guilt and their relationship to psychopathology. Journal of Personality Assessment, 59(3), 584-604.

Hayes, A. F. (2013). Mediation, moderation, and conditional process analysis. *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* Guilford Publications.

Healy, C. J., Lee, K. A., & D'Andrea, W. (2021). Using psychedelics with therapeutic intent is associated with lower shame and complex trauma symptoms in adults with histories of child maltreatment. *Chronic Stress*, 5, 1-12.

Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2019). *Cochrane handbook for systematic reviews of interventions*. John Wiley & Sons.

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., ... & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health*, *2*(8), 356-366.

Hunziker, E. (2013). *Child Maltreatment and Eating Disorders: An Investigation of Shame-proneness, Guilt-proneness, and Self-objectification as Mediating Variables* [Doctoral dissertation, University of South Dakota]. ProQuest Dissertations & Theses Global.

Janssen, I., Hanssen, M., Bak, M. L. F. J., Bijl, R. V., De Graaf, R., Vollebergh, W., ... & Van Os, J. (2003). Discrimination and delusional ideation. The British Journal of Psychiatry, 182(1), 71-76.

Jones, S., Carley, S., & Harrison, M. (2003). An introduction to power and sample size estimation. *Emergency medicine journal: EMJ*, *20*(5), 453.

Kajeepeta, S., Gelaye, B., Jackson, C. L., & Williams, M. A. (2015). Adverse childhood experiences are associated with adult sleep disorders: a systematic review. *Sleep medicine*, *16*(3), 320-330.

Karatekin, C., & Hill, M. (2019). Expanding the original definition of adverse childhood experiences (ACEs). *Journal of Child & Adolescent Trauma, 12*(3), 289-306.

Kealy, D., Rice, S. M., Ogrodniczuk, J. S., & Spidel, A. (2018). Childhood trauma and somatic symptoms among psychiatric outpatients: Investigating the role of shame and guilt. *Psychiatry research*, *268*, 169-174.

Kessler, R. C., McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., ... & Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *The British journal of psychiatry, 197*(5), 378-385.

Kim, D., Bae, H., Han, C., Oh, H. Y., & MacDonald, K. (2013). Psychometric properties of the Childhood Trauma Questionnaire-Short Form (CTQ-SF) in Korean patients with schizophrenia. *Schizophrenia research*, *144*(1-3), 93-98.

Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011). Shame, guilt, and depressive symptoms: a meta-analytic review. *Psychological bulletin*, *137*(1), 68.

Krabbendam, L., Myin-Germeys, I., Bak, M., & Van Os, J. (2005). Explaining transitions over the hypothesised psychosis continuum. *Australian & New Zealand Journal of Psychiatry*, *39*(3), 180-186.

Kwapil, T. R., Miller, M. B., Zinser, M. C., Chapman, J., & Chapman, L. J. (1997). Magical ideation and social anhedonia as predictors of psychosis proneness: a partial replication. *Journal of abnormal psychology*, *106*(3), 491.

Lake, C. R. (2008). Hypothesis: grandiosity and guilt cause paranoia; paranoid schizophrenia is a psychotic mood disorder; a review. *Schizophrenia bulletin*, *34*(6), 1151-1162.

Lataster, T., van Os, J., Drukker, M., Henquet, C., Feron, F., Gunther, N., & Myin-Germeys, I. (2006). Childhood victimisation and developmental expression of non-clinical delusional ideation and hallucinatory experiences. *Social psychiatry and psychiatric epidemiology, 41*(6), 423-428.

Levitan, C., Ward, P. B., Catts, S. V., & Hemsley, D. R. (1996). Predisposition toward auditory hallucinations: The utility of the Launay-Slade Hallucination Scale in psychiatric patients. *Personality and Individual Differences, 21*(2), 287-289.

Lewis, H.B. (1971). *Shame and guilt in neurosis.* International Universities Press.

Lewis, M. (1992). Shame: The exposed self. Free Press.

Lewis, M. (1998). Shame and stigma. In P. Gilbert & B. Andrews (Eds.), *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (pp. 126–140). Oxford University Press.

Liu, R. T., Choi, J. Y., Boland, E. M., Mastin, B. M., & Alloy, L. B. (2013). Childhood abuse and stress generation: The mediational effect of depressogenic cognitive styles. *Psychiatry Research*, *206*(2-3), 217-222.

Loader, P. (1998). Such a shame—A consideration of shame and shaming mechanisms in families. *Child Abuse Review: Journal of the British Association for the Study and Prevention of Child Abuse and Neglect, 7*(1), 44-57.

Luoma, J. B., & Platt, M. G. (2015). Shame, self-criticism, self-stigma, and compassion in acceptance and commitment therapy. *Current opinion in Psychology*, *2*, 97-101.

Lutgens, D., Gariepy, G., & Malla, A. (2017). Psychological and psychosocial interventions for negative symptoms in psychosis: systematic review and meta-analysis. *The British Journal of Psychiatry*, *210*(5), 324-332.

MacMillan, H. L., Fleming, J. E., Streiner, D. L., Lin, E., Boyle, M. H., Jamieson, E., ... & Beardslee, W. R. (2001). Childhood abuse and lifetime psychopathology in a community sample. *American Journal of Psychiatry*, *158*(11), 1878-1883.

Mahtani, S., Hasking, P., & Melvin, G. A. (2019). Shame and non-suicidal self-injury: Conceptualization and preliminary test of a novel developmental model among emerging adults. *Journal of youth and adolescence*, *48*(4), 753-770.

Mason, O., & Claridge, G. (2006). The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE): further description and extended norms. *Schizophrenia research*, *82*(2-3), 203-211.

Masters, K. J. (1995). Environmental trauma and psychosis. *Journal of the American Academy of Child & Adolescent Psychiatry, 34*(10), 1258.

Matos, M., Pinto-Gouveia, J., & Duarte, C. (2013). Internalizing early memories of shame and lack of safeness and warmth: The mediating role of shame on depression. *Behavioural and cognitive psychotherapy*, *41*(4), 479-493.

Matos, M., Pinto-Gouveia, J., Gilbert, P., Duarte, C., & Figueiredo, C. (2015). The Other As Shamer Scale–2: Development and validation of a short version of a measure of external shame. *Personality and Individual Differences*, *74*, 6-11.

Maxwell, S. E. (2004). The persistence of underpowered studies in psychological research: causes, consequences, and remedies. *Psychological methods*, *9*(2), 147.

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analyses of longitudinal mediation. *Psychological methods*, *12*(1), 23.

McCarthy-Jones, S. (2017). Is shame hallucinogenic?. Frontiers in psychology, 8, 1310.Matos, M., Pinto-Gouveia, J., & Gilbert, P. (2013). The effect of shame and shame memories on paranoid ideation and social anxiety. *Clinical psychology & psychotherapy, 20*(4), 334-349.

McEwen, B. S. (2003). Early life influences on life-long patterns of behavior and health. *Mental retardation and developmental disabilities research reviews*, *9*(3), 149-154.

McGinniss, K. D. (1997). *Shame: Correlates of self-consciousness, trauma and parental behavior*. [Doctoral dissertation, The Wright Institute]. ProQuest Dissertations & Theses Global.

McKinley, N. M., & Hyde, J. S. (1996). The objectified body consciousness scale: Development and validation. *Psychology of women quarterly*, *20*(2), 181-215.

McLaughlin, K. A. (2016). Future directions in childhood adversity and youth psychopathology. *Journal of Clinical Child & Adolescent Psychology*, *45*(3), 361-382.

Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child abuse & neglect*, *69*, 10-19.

Mirowsky, J., & Ross, C. E. (1983). Paranoia and the structure of powerlessness. *American Sociological Review, 48*(2) 228-239.

Mojallal, M., Simons, R. M., & Simons, J. S. (2021). Childhood maltreatment and adulthood proneness to shame and guilt: The mediating role of maladaptive schemas. *Motivation and Emotion*, *45*(2), 197-210.

Mueser, K. T., Goodman, L. B., Trumbetta, S. L., Rosenberg, S. D., Osher, F. C., Vidaver, R., ... & Foy, D. W. (1998). Trauma and posttraumatic stress disorder in severe mental illness. *Journal of consulting and clinical psychology, 66*(3), 493.

Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., ... & Steele, H. (2014). Adverse childhood experiences (ACEs) questionnaire and adult attachment interview (AAI): Implications for parent child relationships. *Child abuse & neglect*, *38*(2), 224-233.

Murray, C., & Waller, G. (2002). Reported sexual abuse and bulimic psychopathology among nonclinical women: The mediating role of shame. International Journal of Eating Disorders, 32(2), 186-191.

Øktedalen, T., Hagtvet, K. A., Hoffart, A., Langkaas, T. F., & Smucker, M. (2014). The Trauma Related Shame Inventory: Measuring trauma-related shame among patients with PTSD. *Journal of Psychopathology and Behavioral Assessment*, *36*(4), 600-615.

Panagou, C., & MacBeth, A. (2022). Deconstructing pathways to resilience: A systematic review of associations between psychosocial mechanisms and transdiagnostic adult mental health outcomes in the context of Adverse Childhood Experiences (ACEs). *Clinical Psychology & Psychotherapy*.

Parsa, S. (2018). Psychological Construction of Shame in Disordered Eating. *New Psychology Bulletin*, 15(1), 11-19.

Peh, O. H., Rapisarda, A., & Lee, J. (2019). Childhood adversities in people at ultra-high risk (UHR) for psychosis: a systematic review and meta-analysis. *Psychological medicine*, *49*(7), 1089-1101.

Pickering, L., Simpson, J., & Bentall, R. P. (2008). Insecure attachment predicts proneness to paranoia but not hallucinations. *Personality and Individual Differences, 44*(5), 1212-1224.

Pinto-Gouveia, J., Matos, M., Castilho, P., & Xavier, A. (2014). Differences between depression and paranoia: The role of emotional memories, shame and subordination. *Clinical psychology & psychotherapy, 21*(1), 49-61.

Polusny, M. A., & Follette, V. M. (1995). Long-term correlates of child sexual abuse: Theory and review of the empirical literature. *Applied and preventive psychology*, *4*(3), 143-166.

Poulton, R., Caspi, A., Moffitt, T. E., Cannon, M., Murray, R., & Harrington, H. (2000). Children's self-reported psychotic symptoms and adult schizophreniform disorder: a 15-year longitudinal study. *Archives of general psychiatry*, *57*(11), 1053-1058.

Powell, P. A., Overton, P. G., & Simpson, J. (2015). Reflections on the revolting self: A commentary and further directions. In P. A. Powell, P. G. Overton & J. Simpson (Eds.), T*he revolting self:*

Perspectives on the psychological, social and clinical implications of self-directed disgust. Karnac.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891.

Rahm, G., Renck, B., & Ringsberg, K. C. (2013). Psychological distress among women who were sexually abused as children. *International Journal of Social Welfare, 22*(3), 269–278.

Rawlings, D., & Freeman, J. L. (1997). Measuring paranoia/suspiciousness. In G. Claridge (Eds.), *Schizotypy: Implications for illness and health* (pp. 38–60). Oxford University Press.

Read, J. (1997). Child abuse and psychosis: A literature review and implications for professional practice. *Professional Psychology: Research and Practice, 28*(5), 448.

Reidy, D. E., Niolon, P. H., Estefan, L. F., Kearns, M. C., D'Inverno, A. S., Marker, C. D., & Merrick, M. T. (2021). Measurement of adverse childhood experiences: it matters. *American journal of preventive medicine*, *61*(6), 821-830.

Romme, M. A., & Escher, A. D. (1989). Hearing voices. *Schizophrenia bulletin*, *15*(2), 209-216.

Rosenthal, D. (1963). A suggested conceptual framework. In: D. Rosenthal (Eds.) *The Genain quadruplets* (pp. 505-516). Basic Books.

Ross, C. A., & Joshi, S. (1992). Paranormal experiences in the general population. *Journal of Nervous and Mental Disease*, *180*(6), 357–361.

Rusch, N., Corrigan, P.W., Bohus, M., Jacob, G.A., Brueck, R. & Lieb, K. (2007). Measuring shame and guilt by self-report questionnaires: A validation study. Psychiatry Research, 150(3), 313-325.

Rybak, C. J., & Brown, B. (1996). Assessment of internalised shame: Validity and reliability of the internalised shame scale. *Alcoholism Treatment Quarterly*, *14*(1), 71-83.

Sachs-Ericsson, N., Verona, E., Joiner, T., & Preacher, K. J. (2006). Parental verbal abuse and the mediating role of self-criticism in adult internalizing disorders. *Journal of affective disorders*, *93*(1-3), 71-78.

Saggino, A., Carlucci, L., Sergi, M. R., D'Ambrosio, I., Fairfield, B., Cera, N., & Balsamo, M. (2017). A validation study of the psychometric properties of the Other as Shamer Scale–2. *SAGE Open*, *7*(2), 1-10.

Sanders, B., & Becker-Lausen, E. (1995). The measurement of psychological maltreatment: Early data on the child abuse and trauma scale. *Child abuse & neglect*, *19*(3), 315-323.

Sareen, J., Henriksen, C. A., Bolton, S. L., Afifi, T. O., Stein, M. B., & Asmundson, G. J. G. (2013). Adverse childhood experiences in relation to mood and anxiety disorders in a population-based sample of active military personnel. *Psychological Medicine*, *43*(1), 73-84.

Schreier, A., Wolke, D., Thomas, K., Horwood, J., Hollis, C., Gunnell, D., ... & Salvi, G. (2009). Prospective study of peer victimization in childhood and psychotic symptoms in a nonclinical population at age 12 years. *Archives of general psychiatry, 66*(5), 527-536.

Scott, J., Chant, D., Andrews, G., Martin, G., & McGrath, J. (2007). Association between trauma exposure and delusional experiences in a large community-based sample. *The British Journal of Psychiatry*, *190*(4), 339-343.

Scottish Intercollegiate Guidelines Network (SIGN). SIGN 50 Guideline Developer's Handbook 2008. http://www.sign.ac.uk/guidelines/fulltext/50/section1.html

Scottish Intercollegiate Guidelines Network. (2014). SIGN 50: A guideline developer's handbook. Edinburgh: SIGN; 2014

Sedgwick, P. (2013). Convenience sampling. *Bmj*, *347*.

Sedgwick, P. (2014). Cross sectional studies: advantages and disadvantages. *Bmj*, *348*.

Segal, Z. V. (1988). Appraisal of the self-schema construct in cognitive models of depression. *Psychological bulletin, 103*(2), 147.

Sheffler, J. L., Stanley, I., & Sachs-Ericsson, N. (2020). ACEs and mental health outcomes. In *Adverse childhood experiences* (pp. 47-69). Academic Press.

Shein, L. (2018). The Evolution of Shame and Guilt. *PLoSONE, 13*(7), 1-11.

Shevlin, M., Dorahy D Clin Psych, Ph D, M. J., & Adamson, G. (2007). Trauma and psychosis: an analysis of the National Comorbidity Survey. *American Journal of Psychiatry*, *164*(1), 166-169.

Shevlin, M., Murphy, J., Read, J., Mallett, J., Adamson, G., & Houston, J. E. (2011). Childhood adversity and hallucinations: a community-based study using the National Comorbidity Survey Replication. *Social psychiatry and psychiatric epidemiology*, *46*(12), 1203-1210.

Sideli, L., Murray, R. M., Schimmenti, A., Corso, M., La Barbera, D., Trotta, A., & Fisher, H. L. (2020). Childhood adversity and psychosis: A systematic review of bio-psycho-social mediators and moderators. *Psychological medicine*, *50*(11), 1761-1782.

Simpson, J., Helliwell, B., Varese, F., & Powell, P. (2020). Self-disgust mediates the relationship between childhood adversities and psychosis. *British Journal of Clinical Psychology*, *59*(2), 260-275.

Sitko, K., Bentall, R. P., Shevlin, M., & Sellwood, W. (2014). Associations between specific psychotic symptoms and specific childhood adversities are mediated by attachment styles: an analysis of the National Comorbidity Survey. Psychiatry research, 217(3), 202-209.

Skehan, D., Larkin, W., & Read, J. (2012). Childhood adversity and psychosis: A literature review with clinical and societal implications. *Psychoanalysis, Culture & Society*, *17*(4), 373-391.

Slade, P. D., & Bentall, R. P. (1988). *Sensory deception: A scientific analysis of hallucination.* Cambridge University Press.

Sombke, C. R. (2001). *Testing models of depression and paranoia in men and women: The role of cognitive style, guilt, shame, and defense mechanisms*. Utah State University.

Stainton, A., Chisholm, K., Kaiser, N., Rosen, M., Upthegrove, R., Ruhrmann, S., & Wood, S. J. (2019). Resilience as a multimodal dynamic process. *Early intervention in psychiatry*, *13*(4), 725-732.

Stricklen, J. D. (2019). *The Weight of Shame and Trauma in Bariatric Patients*. George Fox University.

Tangney, J. P., & Dearing, R. L. (2002). Gender differences in morality. In R. F. Bornstein & J. M. Masling (Eds.), *The psychodynamics of gender and gender role* (pp. 251–269). American Psychological Association.

Tangney, J. P., Dearing, R. L., Wagner, P. E., & Gramzow, R. (1989). *Test of Self-Conscious Affect–3.* George Mason University.

Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology, 58*, 345–372.

Thomson, P., & Jaque, S. V. (2018a). Childhood adversity and the creative experience in adult professional performing artists. *Frontiers in Psychology, 9*(111), 1-9.

Thomson, P., & Jaque, S. V. (2018b). Shame and anxiety: The mediating role of childhood adversity in dancers. *Journal of Dance Medicine & Science, 22*(2), 100-108.

Toth, S. L., Cicchetti, D., & Kim, J. (2002). Relations among children's perceptions of maternal behavior, attributional styles, and behavioral symptomatology in maltreated children. *Journal of Abnormal Child Psychology*, *30*(5), 487-501.

Tracy, J. L., & Robins, R. W. (2004). " Putting the Self Into Self-Conscious Emotions: A Theoretical Model". *Psychological inquiry*, *15*(2), 103-125.

Trauelsen, A. M., Bendall, S., Jansen, J. E., Nielsen, H. G. L., Pedersen, M. B., Trier, C. H., ... & Simonsen, E. (2015). Childhood adversity specificity and dose-response effect in non-affective first-episode psychosis. *Schizophrenia research*, *165*(1), 52-59.

Turner, J. E. (2014). Researching state shame with the experiential shame scale. *The Journal of psychology*, *148*(5), 577-601.

Van Buren, B. R., & Meehan, K. B. (2015). Child maltreatment and vulnerable narcissism: The roles of shame and disavowed need. *Journal of the American Psychoanalytic Association*, *63*(3), 555-561.

Van Vliet, K. J. (2010). Shame and avoidance in trauma. In E. Martz (EDs) *Trauma rehabilitation after war and conflict* (pp. 247-263). Springer.

Vandenbroucke, J.P., vonElm, E., Altman, D.G., Gotzche, P.C., Mulrow, C.D., Pocock, S.J., Poole, C. Schlesselman, J.J. & Egger, M. (2007). Strengthening the reporting of observational studies in Epidemiology (STROBE): explanation and elaboration, Epidemiology, 18(6), 805- 835

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.

Vellante, M., Larøi, F., Cella, M., Raballo, A., Petretto, D. R., & Preti, A. (2012). Hallucination-like experiences in the nonclinical population. *The Journal of nervous and mental disease*, *200*(4), 310-315.

vonElm, E. Altman, D.G., Egger, M., Pocock, S.J., Gotzche, P.C. & Vandenbruocke, J.P. (2008). The Strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. Journal of Clinical Epidemiology, 64(4), 344-349.

Waters, F. A., Badcock, J. C., & Maybery, M. T. (2003). Revision of the factor structure of the Launay–Slade Hallucination Scale (LSHS-R). *Personality and Individual Differences, 35*(6), 1351-1357.

Whitfield, C. L., Dube, S. R., Felitti, V. J., & Anda, R. F. (2005). Adverse childhood experiences and hallucinations. *Child abuse & neglect*, *29*(7), 797-810.

Williams, J., Bucci, S., Berry, K., & Varese, F. (2018). Psychological mediators of the association between childhood adversities and psychosis: A systematic review. *Clinical psychology review*, *65*, 175-196.

Wojcik, K. D., Cox, D. W., & Kealy, D. (2019). Adverse childhood experiences and shame-and guilt-proneness: Examining the mediating roles of interpersonal problems in a community sample. Child Abuse & Neglect, 19(1), 1-9.

Wong, Y., & Tsai, J. (2007). Cultural models of shame and guilt. In J. L. Tracy, R. W. Robins & J. P. Tangney (Eds). *The self-conscious emotions: Theory and research* (pp. 209 -223). Guilford Press.

Wood, L., & Irons, C. (2016). Exploring the associations between social rank and external shame with experiences of psychosis. *Behavioural and cognitive psychotherapy, 44*(5), 527-538.

Yung, A. R., Phillips, L. J., McGorry, P. D., McFarlane, C. A., Francey, S., Harrigan, S., ... & Jackson, H. J. (1998). Prediction of psychosis: a step towards indicated prevention of schizophrenia. *The British Journal of Psychiatry*, *172*(S33), 14-20.

Appendix A – Journal guidelines for Clinical Psychology and Psychotherapy

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a meeting or symposium.

Data Protection: By submitting a manuscript to or reviewing for this publication, your name, email address, and affiliation, and other contact details the publication might require, will be used for the regular operations of the publication, including, when necessary, sharing with the publisher (Wiley) and partners for production and publication. The publication and the publisher recognize the importance of protecting the personal information collected from users in the operation of these services, and have practices in place to ensure that steps are taken to maintain the security, integrity, and privacy of the personal data collected and processed. You can learn more at **https://authorservices.wiley.com/statements/data-protection-policy.html**.

New submissions should be made via the **Research Exchange** submission portal **https://submission.wiley.com/journal/CPP**. Should a manuscript proceed to the revision stage, authors will be directed to make revisions via the same submission portal. Authors may check the status of submission at any time by logging on to submission.wiley.com and clicking the "My Submissions" button. For technical help with the submission system, please review our **FAQs** or contact **submissionhelp@wiley.com**.

For help with submissions, please contact the Editorial Office at **CPPedoffice@wiley.com**

Clinical Psychology & Psychotherapy aims to keep clinical psychologists and psychotherapists up to date with new developments in their fields. The Journal will provide an integrative impetus both between theory and practice and between different orientations within clinical psychology and psychotherapy. *Clinical Psychology & Psychotherapy* will be a forum in which practitioners can present their wealth of expertise and innovations in order to make these available to a wider audience. Equally, the Journal will contain reports from researchers who want to address a larger clinical audience with clinically relevant issues and clinically valid research. The journal is primarily focused on clinical studies of clinical populations and therefore no longer normally accepts student-based studies.

This is a journal for those who want to inform and be informed about the challenging field of clinical psychology and psychotherapy.

Submissions which fall outside of Aims and Scope, are not clinically relevant and/or are based on studies of student populations will not be considered for publication and will be returned to the author.

Free Format submission

CPP now offers Free Format submission for a simplified and streamlined submission process.

Before you submit, you will need:

- Your manuscript: this should be an editable file including text, figures, and tables, or separate files – whichever you prefer. All required sections should be contained in your manuscript, including abstract (which does need to be correctly styled), introduction, methods, results, and conclusions. Figures and tables should have legends. Figures should be uploaded in the highest resolution possible. [OPTIONAL TEXT, if the journal is running image checks: If the figures are not of sufficiently high quality your manuscript may be delayed.] References may be submitted in any style or format, as long as it is consistent throughout the manuscript. Supporting information should be submitted in separate files. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers, and the editorial office will send it back to you for revision. Your manuscript may also be sent back to you for revision if the quality of English language is poor.
- An ORCID ID, freely available at https://orcid.org. (Why is this important? Your article, if accepted and published, will be attached to your ORCID profile. Institutions and funders are increasingly requiring authors to have ORCID IDs.)
- The title page of the manuscript, including:
    - Your co-author details, including affiliation and email address. (Why is this important? We need to keep all co-authors informed of the outcome of the peer review process.)
    - Statements relating to our ethics and integrity policies, which may include any of the following (Why are these important? We need to uphold rigorous ethical standards for the research we consider for publication):
        - data availability statement
        - funding statement
        - conflict of interest disclosure
        - ethics approval statement
        - patient consent statement
        - permission to reproduce material from other sources
        - clinical trial registration [OPTIONAL TEXT, if the journal has a double-blind peer review policy: Important: the journal operates a double-blind peer review policy. Please anonymise your manuscript and supply a separate title page file.]

To submit, login at **https://wiley.atyponrex.com/journal/CPP** and create a new submission. Follow the submission steps as required and submit the manuscript.

Pre-Print Policy

Please find the Wiley preprint policy **here**.

This journal accepts articles previously published on preprint servers.

Wiley's Preprints Policy statement for subscription/hybrid open access journals:

Clinical Psychology and Psychotherapy will consider for review articles previously available as preprints. Authors may also post the submitted version of a manuscript to a preprint server at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

2. MANUSCRIPT CATEGORIES AND REQUIREMENTS

Research Article: Substantial articles making a significant theoretical or empirical contribution (submissions should be limited to a maximum of 5,500 words excluding captions and references).

Comprehensive Review: Articles providing comprehensive reviews or meta-analyses with an emphasis on clinically relevant studies (review submissions have no word limit).

Measures Article: Articles reporting useful information and data about new or existing measures (assessment submissions should be limited to a maximum of 3,500 words).

Clinical Report: Shorter articles (a maximum of 2,000 words excluding captions and references) that typically contain interesting clinical material. These should use (validated) quantitative measures and add substantially to the literature (i.e. be innovative).

3. PREPARING THE SUBMISSION

Parts of the Manuscript

The manuscript should be submitted in separate files: main text file; figures.

File types

Submissions via the new Research Exchange portal can be uploaded either as a single document (containing the main text, tables and figures), or with figures and tables provided as separate files. Should your manuscript reach revision stage, figures and tables must be provided as separate files. The main manuscript file can be submitted in Microsoft Word (.doc or .docx) or LaTex (.tex) formats.

If submitting your manuscript file in LaTex format via Research Exchange, select the file designation "Main Document – LaTeX .tex File" on upload. When submitting a Latex Main Document, you must also provide a PDF version of the manuscript for Peer Review. Please upload this file as "Main Document - LaTeX PDF." All supporting files that are referred to in the Latex Main Document should be uploaded as a "LaTeX Supplementary File."

Cover Letters and Conflict of Interest statements may be provided as separate files, included in the manuscript, or provided as free text in the submission system. A statement of funding (including grant numbers, if applicable) should be included in the "Acknowledgements" section of your manuscript.

The text file should be presented in the following order:

1. A short informative title containing the major key words. The title should not contain abbreviations (see Wiley's best practice SEO tips);
2. A short running title of less than 40 characters;
3. The full names of the authors;
4. The authors' complete institutional affiliations where the work was conducted (Institution Name, Country, Department Name, Institution City, and Post Code), with a footnote for an author's present address if different from where the work was conducted;
5. Conflict of Interest statement;
6. Acknowledgments;
7. Data Availability Statement

8. Abstract, Key Practitioner Message and 5-6 keywords;
9. Main text;
10. References;
11. Tables (each table complete with title and footnotes);
12. Figure legends;

Figures and appendices and other supporting information should be supplied as separate files.

Authorship

On initial submission, the submitting author will be prompted to provide the email address and country for all contributing authors.

Please refer to the journal's **Authorship** policy in the Editorial Policies and Ethical Considerations section below for details on author listing eligibility.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned, including the name(s) of any sponsor(s) of the research contained in the paper, along with grant number(s). Thanks to anonymous reviewers are not appropriate.

Conflict of Interest Statement

Authors will be asked to provide a conflict of interest statement during the submission process. For details on what to include in this section, see the **Conflict of Interest** section in the Editorial Policies and Ethical Considerations section below. Submitting authors should ensure they liaise with all co-authors to confirm agreement with the final statement.

Abstract

Enter an abstract of no more than 250 words containing the major keywords. An abstract is a concise summary of the whole paper, not just the conclusions, and is understandable without reference to the rest of the paper. It should contain no citation to other published work.

Key Practitioner Message

All articles should include a Key Practitioner Message of 3-5 bullet points summarizing the relevance of the article to practice.

Keywords

Please provide five-six keywords (see **Wiley's best practice SEO tips**).

Main Text

1. The journal uses US spelling; however, authors may submit using either US or UK English, as spelling of accepted papers is converted during the production process.
2. Footnotes to the text are not allowed and any such material should be incorporated into the text as parenthetical matter.

References

References should be prepared according to the *Publication Manual of the American Psychological Association* (6th edition). This means in-text citations should follow the author-date method whereby the author's last name and the year of publication for the source

should appear in the text, for example, (Jones, 1998). The complete reference list should appear alphabetically by name at the end of the paper. Please note that for journal articles, issue numbers are not included unless each issue in the volume begins with page 1, and a DOI should be provided for all references where available.

For more information about APA referencing style, please refer to the **APA FAQ**.

Reference examples follow:

Journal article
Beers, S. R. , & De Bellis, M. D. (2002). Neuropsychological function in children with maltreatment-related posttraumatic stress disorder. *The American Journal of Psychiatry, 159,* 483–486. doi: **10.1176/appi.ajp.159.3.483**

Book
Bradley-Johnson, S. (1994). *Psychoeducational assessment of students who are visually impaired or blind: Infancy through high school* (2nd ed.). Austin, TX: Pro-ed.

Internet Document
Norton, R. (2006, November 4). How to train a cat to operate a light switch [Video file]. Retrieved from *http://www.youtube.com/watch?v=Vja83KLQXZs*

Endnotes

Endnotes should be placed as a list at the end of the paper only, not at the foot of each page. They should be numbered in the list and referred to in the text with consecutive, superscript Arabic numerals. Keep endnotes brief; they should contain only short comments tangential to the main argument of the paper.

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

Figure Legends

Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

Figures

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes, and resolutions are accepted.
Click **here** for the basic figure requirements for figures submitted with manuscripts for initial peer review, as well as the more detailed post-acceptance figure requirements.

Figures submitted in color may be reproduced in color online free of charge. Please note, however, that it is preferable that line figures (e.g. graphs and charts) are supplied in black and white so that they are legible if printed by a reader in black and white. The cost of printing color illustrations in the journal will be charged to the author. The cost is £150 for the first figure and £50 for each figure thereafter. If color illustrations are supplied electronically in either TIFF or EPS format, they may be used in the PDF of the article at no cost to the author, even if this illustration was printed in black and white in the journal. The PDF will appear on the Wiley Online Library site.

Additional Files

Appendices

Appendices will be published after the references. For submission they should be supplied as separate files but referred to in the text.

General Style Points

The following points provide general advice on formatting and style.

1. **Abbreviations:** In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader. Initially, use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only.
2. **Units of measurement:** Measurements should be given in SI or SI-derived units. Visit the Bureau International des Poids et Mesures (BIPM) website for more information about SI units.
3. **Numbers:** numbers under 10 are spelled out, except for: measurements with a unit (8mmol/l); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).
4. **Trade Names:** Chemical substances should be referred to by the generic name only. Trade names should not be used. Drugs should be referred to by their generic names. If proprietary drugs have been used in the study, refer to these by their generic name, mentioning the proprietary name and the name and location of the manufacturer in parentheses.

Wiley Author Resources

Manuscript Preparation Tips: Wiley has a range of resources for authors preparing manuscripts for submission available **here**. In particular, authors may benefit from referring to Wiley's best practice tips on **Writing for Search Engine Optimization**.

Article Preparation Support

Wiley Editing Services offers expert help with English Language Editing, as well as translation, manuscript formatting, figure illustration, figure formatting, and graphical abstract design – so you can submit your manuscript with confidence.

Also, check out our resources for **Preparing Your Article** for general guidance about writing and preparing your manuscript.

Video Abstracts A video abstract can be a quick way to make the message of your research accessible to a much larger audience. Wiley and its partner Research Square offer a service of professionally produced video abstracts, available to authors of articles accepted in this journal. You can learn more about it by **clicking here**. If you have any questions, please direct them to **videoabstracts@wiley.com**.

4. EDITORIAL POLICIES AND ETHICAL CONSIDERATIONS

Peer Review and Acceptance

The acceptance criteria for all papers are the quality and originality of the research and its significance to journal readership. Except where otherwise stated, manuscripts are single-blind peer reviewed. Papers will only be sent to review if the Editor-in-Chief determines that the paper meets the appropriate quality and relevance requirements.

Wiley's policy on the confidentiality of the review process is available **here**.

Data Sharing and Data Accessibility

This journal expects data sharing. Review **Wiley's Data Sharing policy** where you will be able to see and select the data availability statement that is right for your submission.

Human Studies and Subjects

For manuscripts reporting clinical studies that involve human participants, a statement identifying the ethics committee that approved the study and confirmation that the study conforms to recognized standards is required, for example: **Declaration of Helsinki**; **US Federal Policy for the Protection of Human Subjects**; or **European Medicines Agency Guidelines for Good Clinical Practice**. It should also state clearly in the text that all persons gave their informed consent prior to their inclusion in the study.

Patient anonymity should be preserved. Photographs need to be cropped sufficiently to prevent human subjects being recognized (or an eye bar should be used). Images and information from individual participants will only be published where the authors have obtained the individual's free prior informed consent. Authors do not need to provide a copy of the consent form to the publisher; however, in signing the author license to publish, authors are required to confirm that consent has been obtained. Wiley has a **standard patient consent form** available for use.

Clinical Trial Registration

The journal requires that clinical trials are prospectively registered in a publicly accessible database and clinical trial registration numbers should be included in all papers that report their results. Authors are asked to include the name of the trial register and the clinical trial registration number at the end of the abstract. If the trial is not registered, or was registered retrospectively, the reasons for this should be explained.

Conflict of Interest

The journal requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author's objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or directly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include, but are not limited to: patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker's fees from a company. The existence of a conflict of interest does not preclude publication. **If the authors have no conflict of interest to declare, they must also state this at submission**. It is the responsibility of the corresponding author to review this policy with all authors and collectively to disclose with the submission ALL pertinent commercial and other relationships.

Funding

Authors should list all funding sources in the Acknowledgments section. Authors are responsible for the accuracy of their funder designation. If in doubt, please check the Open Funder Registry for the correct nomenclature: **https://www.crossref.org/services/funder-registry/**

Authorship

The list of authors should accurately illustrate who contributed to the work and how. All those listed as authors should qualify for authorship according to the following criteria:

1. Have made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;

2. Been involved in drafting the manuscript or revising it critically for important intellectual content;
3. Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; and
4. Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in the Acknowledgements statement (e.g., to recognize contributions from people who provided technical help, collation of data, writing assistance, acquisition of funding, or a department chairperson who provided general support). Prior to submitting the article all authors should agree on the order in which their names will be listed in the manuscript.

Additional Authorship Options. Joint first or senior authorship: In the case of joint first authorship, a footnote should be added to the author listing, e.g. 'X and Y should be considered joint first author' or 'X and Y should be considered joint senior author.'

Correction to Authorship

In accordance with **Wiley's Best Practice Guidelines on Research Integrity and Publishing Ethics** and the **Committee on Publication Ethics' guidance**, *Clinical Psychology & Psychotherapy* will allow authors to correct authorship on a submitted, accepted, or published article if a valid reason exists to do so. All authors – including those to be added or removed – must agree to any proposed change. To request a change to the author list, please complete the **Request for Changes to a Journal Article Author List Form** and contact either the journal's editorial or production office, depending on the status of the article. Authorship changes will not be considered without a fully completed Author Change form. Correcting the authorship is different from changing an author's name; the relevant policy for that can be found in **Wiley's Best Practice Guidelines** under "Author name changes after publication."

Wiley's Author Name Change Policy

In cases where authors wish to change their name following publication, Wiley will update and republish the paper and redeliver the updated metadata to indexing services. Our editorial and production teams will use discretion in recognizing that name changes may be of a sensitive and private nature for various reasons including (but not limited to) alignment with gender identity, or as a result of marriage, divorce, or religious conversion. Accordingly, to protect the author's privacy, we will not publish a correction notice to the paper, and we will not notify co-authors of the change. Authors should contact the journal's Editorial Office with their name change request.

Publication Ethics

This journal is a member of the **Committee on Publication Ethics (COPE)**. Note this journal uses iThenticate's CrossCheck software to detect instances of overlapping and similar text in submitted manuscripts. Read Wiley's **Top 10 Publishing Ethics Tips for Authors** and Wiley's **Publication Ethics Guidelines**.

ORCiD
As part of the journal's commitment to supporting authors at every step of the publishing process, the journal requires the submitting author (only) to provide an ORCiD identifier when submitting a manuscript. This takes around 2 minutes to complete. **Find more information here**.

5. AUTHOR LICENSING

If a paper is accepted for publication, the author identified as the formal corresponding author will receive an email prompting them to log in to Author Services, where via the Wiley Author Licensing Service (WALS) they will be required to complete a copyright license agreement on behalf of all authors of the paper.

Authors may choose to publish under the terms of the journal's standard copyright agreement, or **open access** under the terms of a Creative Commons License.

Your open access article publication charges (APCs) may be covered by your institution. Check your eligibility here.

General information regarding licensing and copyright is available **here**. To review the Creative Commons License options offered under open access, please click **here**. (Note that certain funders mandate a particular type of CC license be used; to check this please click **here**.)

Self-Archiving Definitions and Policies: Note that the journal's standard copyright agreement allows for self-archiving of different versions of the article under specific conditions. Please click **here** for more detailed information about self-archiving definitions and policies.

Open Access fees: Authors who choose to publish using open access will be charged a fee. A list of Article Publication Charges for Wiley journals is available **here**.

Funder Open Access: Please click **here** for more information on Wiley's compliance with specific Funder Open Access Policies.

6. PUBLICATION PROCESS AFTER ACCEPTANCE

Accepted Article Received in Production

When an accepted article is received by Wiley's production team, the corresponding author will receive an email asking them to login or register with **Wiley Author Services**. The author will be asked to sign a publication license at this point.

Guidelines for Cover Submission

One of the best ways to showcase your work is with an eye-catching journal issue cover. After your article is accepted for publication, you can submit your idea for a cover image. If you would like to send a suggestion for cover artwork related to your article, **please follow these general guidelines.**

Proofs

Once the paper is typeset, the author will receive an email notification with full instructions on how to provide proof corrections.

Please note that the author is responsible for all statements made in their work, including changes made during the editorial process – authors should check proofs carefully. Note that proofs should be returned within 48 hours from receipt of first proof.

Publication Charges

Color figures. Color figures may be published online free of charge; however, the journal charges for publishing figures in color in print. If the author supplies color figures at Early View publication, they will be invited to complete a color charge agreement in RightsLink for Author services. The author will have the option of paying immediately with a credit or debit card, or they can request an invoice. If the author chooses not to purchase color printing, the figures will be converted to black and white for the print issue of the journal.

Early View

The journal offers rapid publication via Wiley's Early View service. **Early View** (Online Version of Record) articles are published on Wiley Online Library before inclusion in an issue. Note there may be a delay after corrections are received before the article appears online, as Editors also need to review proofs. Once the article is published on Early View, no further changes to the article are possible. The Early View article is fully citable and carries an online publication date and DOI for citations.

7. POST PUBLICATION

Access and Sharing

When the article is published online:

- The author receives an email alert (if requested).
- The link to the published article can be shared for free with your contacts or through social media.
- The author will have free access to the paper (after accepting the Terms & Conditions of use, they can view the article).
- The corresponding author and co-authors can nominate up to ten colleagues to receive a publication alert and free online access to the article.

Promoting the Article

To find out how to best promote an article, click **here**.

Article Promotion Support

Wiley Editing Services offers professional video, design, and writing services to create shareable video abstracts, infographics, conference posters, lay summaries, and research news stories for your research – so you can help your research get the attention it deserves.

Measuring the Impact of an Article

Wiley also helps authors measure the impact of their research through specialist partnerships with **Kudos** and **Altmetric**.

8. EDITORIAL OFFICE CONTACT DETAILS

Email: **CPPedoffice@wiley.com**

Appendix B - Search terms

1. Sham* - Shame, Shaming, Shameful, Shamed, Shames
2. child* - Child, Children, Childhood
3. adj3 – within 3 words of child*
4. advers* - adverse, adversity
5. negative experience* - negative experience, negative experiences
6. negative event* - negative event, negative events
7. maltreat* - maltreat, maltreatment
8. mistreat* - mistreat, mistreatment, mistreated
9. abuse* - abuse, abused
10. assault* - assault, assaulted
11. harass* -harass, harassed, harassment
12. exploit* - exploit, exploited
13. trauma* - trauma, traumatised, traumatized, traumatic
14. neglect* - neglect, neglected

Appendix C – Data Extraction Form

General Information	
Extraction date	
Reference	
Study Title	
Author	
Publication type	
Country	
Participant characteristics	
Age range	
Gender	
Mean shame	
Mean ACEs	
Co-morbidities	
Number of participants in sample	
Population type	
Study Characteristics	
Aims	
Design	
Recruitment methods	
Inclusion criteria	
Exclusion criteria	
Method and setting	
Clarification of shame provided	

Clarification of ACEs	
Outcome data/results	
Measure of shame used	
Assessment or measure for ACEs used	
Total participants	
Total withdrawals/exclusions	
Type of analysis used in study	
Results	
Main Findings	

Appendix D – Methodological Criteria Checklist

Background and aims

1. The research question/hypothesis are appropriate and clearly defined drawing on past literature?	
☐ Strong	The research questions/hypothesis are clearly defined and located within the introduction and directly relate to discussed research
☐ Moderate	The research questions/hypothesis can be inferred from introduction but are not clearly defined/located
☐ Weak	The research questions/hypothesis are not clear and unable to be inferred
☐ Not applicable/Not reported	

2. Definition of ACEs clearly defined	
☐ Strong	Definition of ACEs clearly defined
☐ Moderate	Definition of ACEs can be inferred but not clearly defined
☐ Weak	No clear definition of ACEs and cannot be inferred
☐ Not applicable/Not reported	

3. Definition of Shame clearly defined	
☐ Strong	Definition of shame clearly defined
☐ Moderate	Definition of shame can be inferred but not clearly defined
☐ Weak	No clear definition of shame and cannot be inferred
☐ Not applicable/Not reported	

Sample and Selection

4. Are critical inclusion/exclusion criteria clearly stated?	
☐ Strong	Inclusion/Exclusion criteria clearly stated
☐ Moderate	Inclusion/Exclusion criteria can be inferred but not clearly stated
☐ Weak	Inclusion/Exclusion criteria not clearly stated nor can be inferred
☐ Not applicable/Not reported	

5. The recruitment method is clearly reported and appropriate	
☐ Strong	The recruitment method is clearly stated and minimizes bias (e.g. random sampling)
☐ Moderate	The recruitment method is reported in some detail. Method used result in some recruitment biases (e.g. opportunity/convenience)
☐ Weak	No detail of recruitment method given *or* procedure significantly biased
☐ Not applicable/Not reported	

6. Was the sample size sufficiently large to detect a clinically significant difference?	
☐ Strong	Number of participants was satisfactory for a medium effect size and adopting a power level of 0.8 and an alpha level of 0.05
☐ Moderate	Number of participants was satisfactory for a medium effect size and adopting a power level of 0.7 and an alpha level of 0.05

☐ Weak	Number of participants was satisfactory for a medium effect size and adopting a power level of less 0.7 and an alpha level of 0.05 or power was not calculated/reported
☐ Not applicable/Not reported	

Design and Method

7. Explanation of data collection are given e.g. timeframes, location etc.	
☐ Strong	Clear explanation of data collection methods is outlined. Including details of location, follow ups etc. Could be easily replicated
☐ Moderate	Explanations of data collection methods outlined. Includes some details of location, follow ups etc. Could be inferred and closely replicated
☐ Weak	Data collection not outlined. Unable to replicate
☐ Not applicable/Not reported	

8. The instrument used to measure multiple ACEs is suitable and validity was reported	
☐ Strong	Measures have good validity
☐ Moderate	Measures have adequate validity
☐ Weak	Measures have limited validity or not valid.
☐ Not applicable/Not reported	

9. The instrument used to measure Shame is suitable and validity was reported	
☐ Strong	Measures have good validity
☐ Moderate	Measures have adequate validity
☐ Weak	Measures have limited validity or not valid.
☐ Not applicable/Not reported	

Statistical Analysis

10. Statistical analyses are fully reported and appropriate.	
☐ Strong	Statistical analysis is clearly defined (e.g. specific tests) and appropriate in relation to research questions defined
☐ Moderate	Statistical analysis can be inferred from description although not clearly defined, appear to be appropriate
☐ Weak	Statistical analysis not stated and cannot be inferred or not appropriate
☐ Not applicable/Not reported	

Conclusions

11. Generalisability of findings	
☐ Strong	Generalisability of finding is clearly stated and described
☐ Moderate	Generalisability of finding discussed in some detail
☐ Weak	Generalisability of finding not discussed or insufficient
☐ Not applicable/Not reported	

12. Implications of findings	
☐ Strong	Implications of finding is clearly stated and described
☐ Moderate	Implications of finding discussed in some detail

☐ Weak	Implications of finding not discussed or insufficient
☐ Not applicable/Not reported	
Total Score	
Percentage	
Category (Good ≥ 75%, Fair 50-75%, Weak ≤5 0%)	

Appendix E - Demographic Questionnaire

What is your age?

____

What is your gender? (Multiple choice)

- Male
- Female
- Prefer not to say
- Other (please specify):

  ____

Do you have a diagnosis of psychosis? (Multiple Choice)

- Yes
- No

  If 'Yes' please specify diagnosis:

  ____

Have you ever been seen by secondary care mental health services? (Multiple Choice)

- Yes
- No

Are you currently living in the UK? (Multiple choice)

- Yes
- No

Appendix F - Philadelphia Adverse Childhood Experiences (PHL ACEs) Scoring

Age: Adult
Duration: 3-5 minutes
Reading Level: < 6th grade
Number of items:21
Answer Format: This survey uses multiple answer formats. Please see the scoring instructions below for more information.

Scoring:
The Conventional ACE subscale contains nine categories: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, domestic violence, household substance abuse, household mental illness, and incarcerated household member.

Bolded responses indicate the threshold for adversity.

The *emotional abuse* category contains Q1 and Q2. The answer format for these questions is: **1 = More than once**; 2 = Once; 3 = Never.

The *physical abuse* category contains Q3. The answer format for this question is: **1 = More than once**; 2 = Once; 3 = Never. The physical abuse category also contains Q4. The answer format for this question is: **1 = More than once; 2 = Once**; 3 = Never.

The *sexual abuse* category contains Q5 and Q6. The answer format for these questions is: **1 = Yes**; 2 = No.

The *emotional neglect* category contains Q7. The answer format for this question is: 1 = Very often true; 2 = Often true; 3 = Sometimes true; **4 = Rarely true; 5 = Never true.**

The *physical neglect* category contains Q8. The answer format for this question is: **1 = Very often true; 2 = Often true**; 3 = Sometimes true; 4 = Rarely true; 5 = Never true.

The *domestic violence* category contains Q9. The answer format for this questions is: **1 = Many times; 2 = A few times;** 3 = Once; 4 = Never. The domestic violence category also contains Q10. The answer format for this question is: **1 = Many times; 2 = A few times; 3 = Once**; 4 = Never.

The *household substance abuse* category contains Q11 and Q12, the *household mental illness* category contains Q13 and Q14, and the *incarcerated household member* category contains Q15. The answer format for these questions is **1 = Yes**; 2 = No.

The Expanded ACE subscale contains five categories: witness violence, felt discrimination, adverse neighborhood experience, bullied, and lived in foster care.

The *witness violence* category contains Q16. The answer format for this question is: **1 = Many times; 2 = A few times**; 3 = Once; 4 = Never.

The *felt discrimination* category contains Q17. The answer format for this question is: **1 = Very often true; 2 = Often true; 3 = Sometimes true**; 4 = Rarely true; 5 = Never true.

The *adverse neighborhood* experience category contains Q18 and Q19. The answer format for this question is: 1 = All of the time; 2 = Most of the time; **3 = Some of the time; 4 = None of the time.**

The bullied category contains Q20. The answer format for this question is: **1 = All of the time; 2 = Most of the time**; 3 = Some of the time; 4 = None of the time.

The lived in foster care category contains Q21. The answer format for this question is: **1 = Yes**; 2 = No.

To calculate the total score for each participant, sum the number of responses that indicate adversity, as noted above by the bolded items. Then, categorize responses into the following groups:
0 Adverse Childhood Experiences
1-2 Adverse Childhood Experiences
3+ Adverse Childhood Experiences
0 expanded ACEs, 1-2 Expanded ACEs, 3+ Expanded ACEs.

Sources:

Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., Pachter, L. M., & Fein, J. A. (2015). Adverse childhood experiences: Expanding the concept of adversity. American Journal of Preventive Medicine,49(3), 354-361.

Appendix G – Participant information sheet

<u>The effects of negative childhood experiences on social emotions and vulnerability to psychosis</u>

You are being invited to take part in the above research study. Alice Marten at the University of Edinburgh is leading this research. Before you decide to take part, it is important you understand why the research is being conducted and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

The purpose of the study is to assess whether negative childhood experiences are related to social emotions and experiences of psychosis and psychotic-like symptoms in adulthood.

Am I eligible to take part?

We are recruiting volunteers aged 16 or over who live in the UK, as we are assessing the general UK population. We are aiming to recruit a variety of individuals with different childhood and mental health experiences. You do not need to have experienced negative childhood experiences or experiences of social emotions or psychosis to take part. However, you must be able to read and write in English and be able and willing to provide consent.

Do I have to take part?

No – It is entirely up to you. If you decide to take part you will be free to withdraw from the study at any time by clicking the "withdraw" button at the bottom of the online survey page without providing a reason, and with no negative consequences. As we will not ask for your name or contact information, we will not be able to withdraw your information after you have submitted your questionnaire or if you only close the page and do not click "withdraw". Deciding not to take part or withdrawing from the study will not affect you in any way.

What will happen if I decide to take part?

After reading this information sheet and you decide you would like to take part, you will be asked to read and agree to a list of statements in order to show you consent to take part in the research. If you agree to all of the statements, you are still free to withdraw from the study at any time by clicking the "withdraw" button. We will be collecting demographic information along with information on negative childhood experiences, social emotions (shame, guilt and self-disgust) and experiences of psychosis. You will be asked to complete an online survey, containing 8 questionnaires commonly used in research, regarding your experiences of these. Your name will not be recorded in this study. This means that your answers will be completely anonymous. The questionnaire should take around 30-40 minutes to complete.

<u>Trigger Warning:</u> Please be aware that this study involves questions about difficult childhood experiences including abuse and neglect. Your participation in this study is anonymous.

How will my data be collected?

Data will be gathered online via 'Qualtrics'. This is a secure password protected data management platform. If you decide to take part, after you complete the consent form you will be taken to the survey.

Are there any potential benefits of taking part?

There are no direct benefits but by sharing your experiences, you are helping us to gain a further understanding of different social emotions and their relationship with negative childhood experiences and psychosis, which will help to highlight aspects of psychological treatment to be focused on.

Are there any potential risks or disadvantages of taking part?

We expect the risks of taking part to be minimal. The online survey contains some questions which ask about negative childhood experiences, social emotions (shame, guilt and self-disgust) and experiences of psychosis. Some people may find these questions upsetting. If you start the study and decide that you do not wish to continue you can withdraw from the survey at any time. When you withdraw from the survey, you will be taken to a final page with details of local and national support services, as well as information about how to seek further support. This page will also be available once all of the questions have been completed. Contact details of the research team will also be provided on this page if you have any further questions.

The questionnaires will take around 30 – 40 minutes of your time but you are free to complete these at a time that is suitable for you.

What if I want to withdraw from the study?

Your participation is voluntary and you are free to withdraw at any time without giving any reason before completing the study by clicking the “withdraw” button at the bottom of the page. As we will not ask for your name or contact information, we will not be able to withdraw your information after you have submitted your questionnaire or if you only close the page and do not click “withdraw”.

Data Protection and Confidentiality

Your data will be processed in accordance with Data Protection Law. All information collected about you will be kept strictly confidential. Your data will be anonymised in our records, so we will not be able to identify and remove your survey responses after you have submitted it. Your data will only be viewed by the research team. All data will be electronic and will be stored on the University of Edinburgh server.

The University of Edinburgh is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. The University of Edinburgh will keep completely anonymised information about you for 10 years after the study is complete which, with your consent, may be used in future ethically approved research.

For general information about how we use your data go to:

https://www.ed.ac.uk/data-protection/privacy-notice-research

What will happen with the results of this study?

The current project will be submitted to the University of Edinburgh as part of a doctoral thesis along with a systematic review. The thesis will be uploaded to the university's thesis database and will be used to generate academic journal articles or presented in other professional or academic conferences and meetings. Additionally, a lay summary of the research will be posted on the social media, forums and charity sites used to help recruit participants. Your identity will never be disclosed.

If you are interested in receiving a summary of the results please contact the lead researcher (Alice Marten) using the contact details below. These contact details will also be provided on completion of the study.

Who has reviewed the study?

The research proposal for this study has been reviewed and received a favourable opinion from the Health in Social Science Ethics Committee.

Who can I contact?

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

Alice Marten (Lead Researcher)
Trainee Clinical Psychologist
University of Edinburgh

If you would like to discuss this study with someone independent of the study, please contact:

Dr Tim Bird
Postdoctoral Fellow
The University of Edinburgh

If you have a complaint which you feel you cannot discuss with the above contacts, you can contact the Head of School for Health and Social Science:

Matthias Schwannauer
headofschool.health@ed.ac.uk

Support services:

If you are currently experiencing difficulties with your mental health, please reach out for support. Your GP will be able to support you and sign post you to local support services.

Below is also a list of national support available that others have found helpful:

- Samaritans: 24-hour helpline 08457 90 90 90
- Breathing Space: 0800 83 85 87
  6pm-2am Monday to Thursday, and 6pm-6am Friday, Saturday and Sunday.

- NHS24: 111

- NAPAC (National Association of People Abused in Childhood)
  Helpline: 0808 801 0331
  www.napac.org.uk

- The Survivors Trust
  Support, Advice & Info: 0808 801 0818
  www.thesurvivorstrust.org

- RASAC (Rape and Sexual Abuse Support Centre)
  National Helpline: 0808 802 9999 (12-2.30 & 7-9.30)
  www.rasasc.org.uk

If you have any immediate concerns regarding your mental health, please **speak to your GP or contact 999** if it is an emergency.

Appendix H – Participation consent form

<u>The effects of negative childhood experiences on social emotions and vulnerability to psychosis</u>

Consent form:

Please confirm you agree with the following statements:

- I confirm I have read and understood the information about the project as provided in the Information Sheet (Version 2, 05/03/2020).
- I confirm that I have had the opportunity to consider the information, ask questions, and have had any questions answered satisfactorily.
- I understand my participation is voluntary and I can withdraw at any time without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.
- I agree to my anonymised data being stored at The University of Edinburgh for 10 years after the study is complete and that it may be used in future ethically approved research.
- I understand that relevant sections of my data collected during the study may be looked at by individuals from the Sponsor (University of Edinburgh), where it is relevant to my taking part in this research. I give permission for these individuals to have access to my data.
- I agree to all of the above consent points and by ticking this box confirm that I agree to take part in the above study.

Appendix I – Participation debrief sheet

The effects of negative childhood experiences on social emotions and vulnerability to psychosis

Debrief sheet

Thank you for your time and we hope you have found taking part in this study a positive experience. The aim of the study was to examine whether negative childhood experiences are related to social emotions (shame, guilt and self-disgust) and experiences of psychosis and psychotic-like symptoms in adulthood. We did this by recruiting participants from the general population to complete relevant questionnaires. We hope that this research will help inform the development of intervention and support services that will meet the needs of individuals who have these difficulties.

Support services:

If you are currently experiencing difficulties with your mental health or were affected by any of the questions asked in the study, please reach out for support. Your GP will be able to support you and sign post you to local support services.

Below is also a list of national support available that others have found helpful:

- Samaritans: 24-hour helpline 08457 90 90 90

- Breathing Space: 0800 83 85 87
  6pm-2am Monday to Thursday, and 6pm-6am Friday, Saturday and Sunday.

- NHS24: 111

- NAPAC (National Association of People Abused in Childhood)
  Helpline: 0808 801 0331
  www.napac.org.uk

- The Survivors Trust
  Support, Advice & Info: 0808 801 0818
  www.thesurvivorstrust.org

- RASAC (Rape and Sexual Abuse Support Centre)
  National Helpline: 0808 802 9999 (12-2.30 & 7-9.30)
  www.rasasc.org.uk

If you have any immediate concerns regarding your mental health related, please speak to your **GP or contact 999** if it is an emergency.

If you have any further questions about the study or would like to find out the results of the study in the future, please contact:

Alice Marten (Lead Researcher)
Trainee Clinical Psychologist
University of Edinburgh

If you would like to discuss this study with someone independent of the study please contact:

Dr Tim Bird
Postdoctoral Fellow
The University of Edinburgh

If you have a complaint which you feel you cannot discuss with the above contacts, you can contact the Head of School for Health and Social Science:

Matthias Schwannauer
headofschool.health@ed.ac.uk

Appendix J – Ethics Approval

School of Health in Social Science
The University of Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Email ethics.hiss@ed.ac.uk

18 March 2021

Dear Alice Marten,

Application for Ethical Approval

Reference: CLIN857

Project Title: Does internal/external shame mediate the relationship between childhood adversities and an increased vulnerability to psychosis?

Thank you for submitting the above research project for review by the School of Health in Social Science Research Ethics Committee (REC). I can confirm that the submission has been independently reviewed and was approved on 11th March 2021.

The standard conditions of this approval are:

I. Conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the REC.

II. Advise the REC (by email to ethics.hiss@ed.ac.uk) of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project.

III. Make submission for approval of amendments to the approved project before implementing such changes.

IV. Advise in writing if the project has been discontinued.

The School's Research Ethics Policy and further information and resources are available on the School's website.

You may now commence your project; we wish you the best of luck.

Yours sincerely,

Sanni Ahonen
Administrative Secretary
School of Health in Social Science

Appendix K – Ethics Application

University of Edinburgh, School of Health in Social Science

Research Ethics, Integrity and Governance

The forms required when seeking ethical approval in the School of Health and Social Sciences have now been merged into this single electronic document. The sections you are required to complete will depend on the nature of your application. Please start to complete the form from the beginning and proceed as guided. On completion the *entire* document should be submitted electronically to your section's ethics administrator using the email addresses detailed on the final page.

Applications submitted without appropriate documentation will be returned.

Please work your way through this form, reading the questions and accompanying information carefully. Sections highlighted in yellow are mandatory, so you must answer all the questions in these sections.

Aside from the mandatory questions you won't always need to answer all of the questions in the form. Section 1 "your project details" includes a set of filter questions that determine the rest of the questions you need to answer. Please read the notes carefully to make sure you answer the right questions. The notes contain hyperlinks so you can jump directly to the relevant section.

Sections highlighted in yellow are **mandatory**. These must be completed for every application.

Section 1: Introduction
Section 2: Your project details
Section 3: Description of the research
Section 4: Potential risks to participants and researchers
Section 5: Participants and data subjects
Section 6: Participants or data subject information and consent
Section 7: Confidentiality and handling of data
Section 8: Security sensitive material
Section 9: Copyright
Section 10: Good conduct in collaborative research
Section 11: Good conduct in publication research

SECTION 1: Introduction

This is a:

New application for ethical approval – first submission ☒

A resubmission following reviewer comments ☐

A resubmission with requested amendments ☐

Please select your School:

☒ School of Health in Social Science

Please select your subject area

☐ CPASS

☒ Clinical Psychology

☐ Nursing Studies

It is each researcher's responsibility to check whether their project requires Sponsorship, Caldicott Approval, R&D approval, and/or IRAS. https://www.ed.ac.uk/health/research/ethics/sponsorship-and-governance

If the project requires any of these, these need to be secured prior to submitting this application.

Please tick the relevant box before proceeding:

I have checked and this project does not require Sponsorship, Caldicott, R&D and/or IRAS approval ☐

My project requires Sponsorhip ☒ Sponsorship letter attached ☐

My project requires Caldicott approval ☐ Caldicott approval letter/e-mail attached ☐

My project requires R&D approval ☐ R&D approval letter/e-mail attached ☐

My project requires IRAS approval ☐   IRAS approval letter/e-mail attached ☐

External Research Ethics Approval

Does your research project require the approval of any other institution and/or ethics committee, nationally or internationally?

Please state the name of the review body and the current status of your application (for example, submitted, approved, deferred, or rejected)? Please include any known submission / approval timelines.

N/A

SECTION 2: Your project details

2.1 Project details

Your name: Alice Marten

Please enter your project title: Do social emotions mediate the relationship between childhood adversities and an increased vulnerability to psychosis?

Proposed Project Start Date: 01/2021

Proposed Project End Date: 05/2022

Q1. Are you a member of staff or a student?

☐ Staff member

Supplementary questions for staff members only:

List the names and institutions of any Co-Investigators working with you on the project.

☒ Student

Supplementary questions for students only:

What type of student are you?

Doctorate student – Employed by NHS Borders

Please provide your course title or programme name

Doctorate in Clinical Psychology

Who is your supervisor?

Helen Griffiths *Angus Macbeth*

Q2. Please indicate any external ethical guidance your project has to adhere to. For example, the British Psychological Society (BPS), the British Academy, the British Association of Sport and Exercise Sciences (BASES)

N/A

2.2 Participants

Q3. Will you be collecting or generating any new data (including autoethnographic writings)?

☒ Yes

☐ No

Q4. Will you be extracting, re-coding or using existing data that contains sensitive information (i.e., identifiable information)?

☐ Yes

☒ No

If the answers to both Q3 and Q4 are 'no' you are not required to complete:

Section 4: Potential risks to participants and researchers
Section 5: Participants and data subjects
Section 6: Participant or data subject information and consent

2.3 Security-Sensitive Material

Q5. Does your research project fit into any of the following security-sensitive categories?

☐ Your research project is commissioned by the military.

☐ Your research project is commissioned under an EU security cell.

☐ Your research project involves the acquisition of security clearances.

☐ Your research project concerns groups which may be construed as terrorist or extremist

If you answer 'yes' to any of the questions above you must complete Section 8 Security Sensitive Material. You must answer all questions in the section.

2.4 Good Conduct in Collaborative Research

Q6. Will your research project involve collaborative work?

☐ Yes

☒ No

Selecting "Yes" to this question means you must complete Section 10 "Good conduct in collaborative research" later in the form. You must answer all questions in the section.

2.5 Project Funding

Q7. Is funding required for your research project? (To be completed by staff only)

Please indicate how the project will be financially supported.

N/A

2.6 Knowledge Exchange and Impact

Q8. Will there be any knowledge exchange and impact activities associated with this project? (To be completed by staff only)

2.7 Consultancy Potential

Q9. Could your research project lead to potential consultancy activities in the future? (To be completed by staff only)

SECTION 3: Description of the research

Q10: Please use the box below to describe your research; including a background summary, rationale, research questions and hypotheses, methodology, procedures. If you have identified ethical considerations that are not addressed in other parts of the form, please outline and discuss them here.

Background

Childhood adversities and Psychosis

Childhood adversities are commonly experienced events with approximately one third of the population being affected (Kessler et al. 2010). Being exposed to these adversities as children has been related to negative effects in adulthood, including greater risk of developing a psychiatric disorder (Green et al. 2010; Kessler et al. 1996; Kessler et al. 2010) such as Psychosis, a severe psychiatric disorder (Ellason & Ross, 1997; Read, 1997). In individuals with a diagnosis of psychosis, higher rates of both childhood sexual abuse and other adversities have been reported (e.g. Goff et al., 1991; Masters, 1995; Mueser et al., 1998; Ross & Joshi, 1992). One drawback of these early research, however, is that childhood adversities tend to only encompass childhood sexual abuse and physical and emotional abuse and neglect. More recently, other adversities such as bullying have also been shown to be a strong predictor of the development of psychosis (Bebbington et al. 2004; Lataster et al. 2006; Schreier et al. 2009). A meta-analysis further indicated that adversities including peer victimisation and experiences of parental loss were strongly associated with psychosis (Varese et al. 2012).

Shame

One potential candidate for explaining the psychological mechanism underlying the link between childhood adversities and the development of psychotic symptoms is shame. Shame is a distressing emotion which often arises following a traumatic event (Van Vliet, 2010). It is defined as an unconscious negative evaluation of the self (Parsa, 2018), which drives individuals to conceal or deny any perceived wrongdoing (Shein, 2018). If left unresolved, shame can potentially hinder recovery from a traumatic event (Van Vliet, 2010). There is a consensus between researchers that there are two distinct types of shame (Gilbert, 1998). “Internal shame” which emerges inside of the self and describes a self-criticism and negative evaluation of oneself, and “external shame” which emerges outside of the self and describes an unpleasant awareness of others negatively viewing the self (Kim et al. 2011). There has been some empirical evidence from a recent systematic review suggesting that shame may be an important factor contributing to the development of psychotic symptoms (Carden et al. 2020).

Shame, Paranoia and Childhood Adversities

Paranoia is the main component of persecutory delusions and the most common experienced delusions within psychosis and defined as the belief of being under threat or harassed by an individual, organisation or group (American Psychiatric Association, 2013). When comparing internal and external shame, Matos et al. (2013) found that external shame was more highly correlated with paranoia whereas internal shame was more strongly associated with social anxiety. However, both types of shame were still related to paranoia. Furthermore, this study discovered that shame memories, similar to traumatic memories, were significantly correlated with paranoia, even when considering current feelings of internal and external shame. Pinto-Gouveia et al. (2014) built on this research and highlighted the idea that emotional memories, recollections of threatening events and submissive behaviour have a direct impact on paranoia. Furthermore, they hypothesised that these factors influence the development of internal and external shame which in turn could bring about an increase in paranoid ideation. Despite this however, no studies to date have looked at whether internal or external shame could mediate the relationship between childhood adversities and paranoia.

Shame, Hallucinations and Childhood Adversities

Hallucinations, another common symptom of psychosis, are perceptions which occur in the absences of an external stimulus, where the individual experiencing the hallucination perceives the full impact of a real perception (Slade & Bentall, 1988). Alongside paranoia, some evidence has been found to relate external shame to hallucinations, with one study reporting positive correlations with positive symptoms of psychosis (hallucinations and delusions) (Woods & Irons, 2016). Although there is not a vast amount of research linking shame to hallucinations, McCarthy-Jones (2017) hypothesised that it may play a role in the development of hallucinations, more specifically, that it may mediate the role between childhood adversities and hallucinations. This hypothesis was built on multiple historical and contemporary case studies which suggested that hallucinations containing shaming content are associated with early experiences of shaming. McCarthy-Jones argues that adversities have a strong influence in development of shame by the perpetrator violating highly salient standards of conduct and encouraging shame to keep the victim silent (Deblinger and Runyon, 2005; Feiring, 2005). Due to this, and the evidence of a relationship between childhood adversities and hallucinations, McCarthy-Jones concludes that shame could mediate the relationship between adversities and hallucinations. Despite this however, their work only reviewed evidence from case studies and related literature such as PTSD which is not substantial evidence to prove this hypothesis (McCarthy-Jones, 2017).

Proposed Study

An ongoing debate within the psychosis literature considers whether symptoms of psychosis lie on a continuum. From this viewpoint, it has been proposed that less severe psychotic-like experiences, often referred to as paranoia and hallucination proneness, can be commonly found within the general population (Berry et al. 2018). Consistent with this, research has found evidence of both paranoia and hallucinations proneness in non-clinical samples (Fenigstein & Vanable, 1992; Freeman et al., 2005; Levitan et al., 1996; Pickering et al. 2008; Waters et al., 2003). Consequently, this current study will recruit participants from the general population and examine increased vulnerabilities to psychosis by measuring hallucination and paranoia proneness.

Other potential variables

Guilt

Many psychologists have suggested that there are strong links between shame and guilt, due to both concepts involving negative affect (Tangney at al. 1992). However, they differ due to the focus of the negative affect, for instance, in guilt, the object of concern surrounds a specific action or failure to act. There is also often regret or remorse over the action. On the other hand, shame encompasses the entire self, where the entire self is negatively evaluated and painfully scrutinised. Similar to experiences of shame, links have been made between adverse childhood experiences and the development of guilt in adulthood (Wojcik et al. 2019). Researchers argues that individuals may respond to ACEs in different ways and different reactions may include, shame and guilt along with many other internal and external reactions (Kalmakis & Chandler, 2015). Furthermore, there has been some evidence to suggest that guilt measured by the Personal Feeling Questionnaire-2 (PFQ-2), is strongly related to the paranoid ideation scale (Harder et al. 1992; Tangney,. 1995), providing rational for guilt to be included within the current study. Consequently, as there are many similarities among shame and guilt, and both can arise as a result of childhood adversities, it would be plausible that guilt may to play a role in the relationships between ACEs and psychosis and thus support the inclusion of guilt as a variable alongside internal and external shame within this current study.

Self-Disgust

Another common emotion related to interpersonal contexts which carries similarities to shame is self-disgust. However, like guilt, there are many components which set it apart (Olatunji et al. 2015). For instance, it can be differentiated most likely through self-disgust's strong evocation of nausea and revulsion (Gilbert et al., 2004; Powell et al., 2015). Along with shame and guilt, there has been some evidence which to support the relationship

between childhood adversities and self-disgust (Powell et al. 2015). More recently, research has shown that not only does self-disgust significantly correlate with childhood adversities, but that it also mediates the relationship between trauma and both positive and negative symptoms of psychosis, when controlling for external shame and self-esteem (Simpson et al. 2020). However, this research did not investigate individual positive symptoms of psychosis, i.e hallucinations or paranoia. As a result, it is thought that including self-disgust within this current study, would provide further understanding of its role within psychosis proneness and the specific symptoms hallucinations and delusions.

Other psychotic-like symptoms

Along with positive symptoms (hallucinations and delusions) representing common symptoms of psychosis, many individuals will also experience cognitive disorganisation and negative symptoms (APA, 2013). Cognitive disorganisation reflects a disorganization of thought and is defined by the presence of bizarre behaviour, difficulties with speech and language, and impaired attention (Belger, 2020), while negative symptoms are defined as a non-existence or reduction of affective and social and behavioural expression (Lutgens et al, 2017). Similarly, to the positive symptoms of psychosis, it is hypothesised that these symptoms run on a continuum and less severe psychotic-like symptoms can be found in the general population (Mason & Claridg, 2006). Consequently, this study will include measures of psychosis-proneness in the form of negative symptoms (introvertive anhedonia) and cognitive disorganisation to determine if there are any relationships with other common symptoms of psychosis.

Previous studies have shown an association between childhood adversities in the development of paranoia and hallucination, along with associations between internal and external shame with both paranoia and hallucinations. Consequently, as those who experience childhood adversities have a strong likelihood to experience later feelings of shame, this proposed study would set out to determine whether shame, either external or internal, could mediate the relationship between childhood adversities and both paranoia and hallucinations. Furthermore, it aims to replicate the findings of past research of associations between shame and paranoia in English speaking populations and investigate the relationship between shame and hallucinations. Therefore, the study aims:

1. To explore the relationship between childhood adversities, social emotions and psychosis proneness.

2. To explore the effect of childhood adversities through social emotions on specific symptom proneness (See figure 1, 2, 3 and 4 for diagrammatic representation)

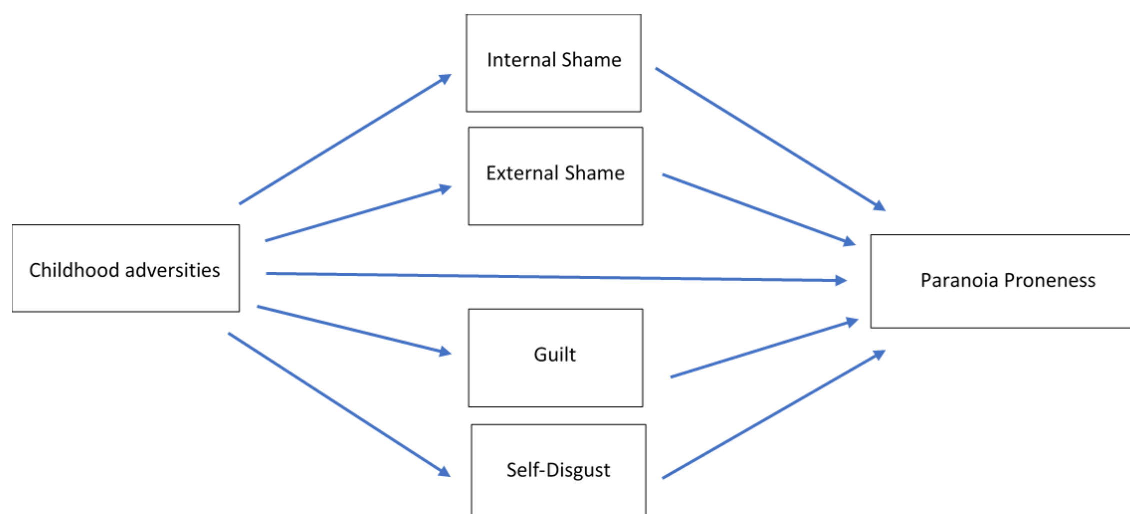

Figure 1. Theoretical model proposed to explain the relationships between childhood adversities, social emotions (internal and external shame, guilt and self-disgust) and paranoia proneness.

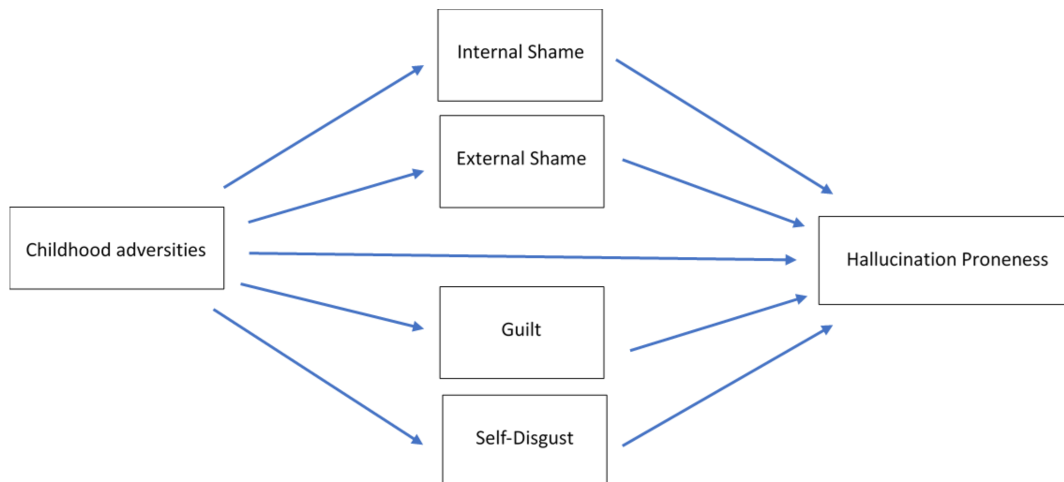

Figure 2. Theoretical model proposed to explain the relationships between childhood adversities, social emotions (internal and external shame, guilt and self-disgust) and hallucination proneness.

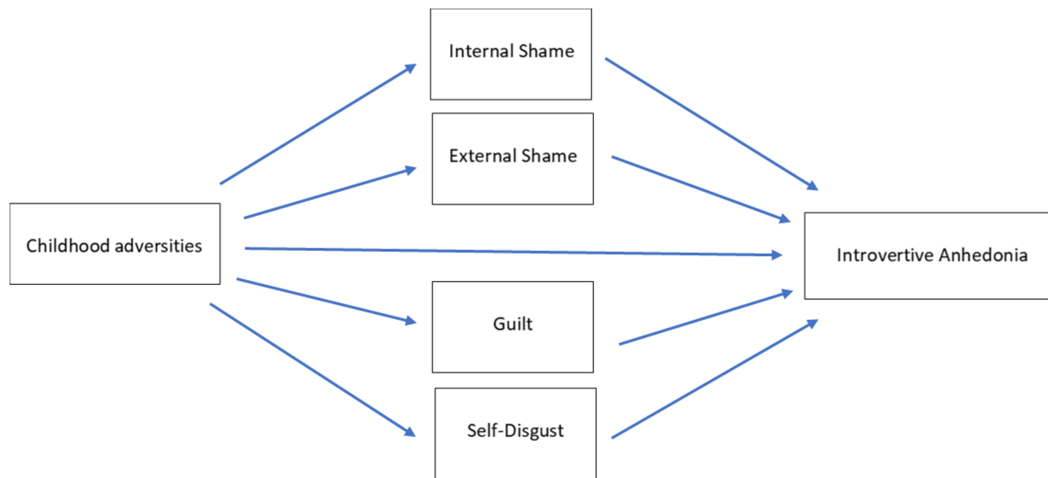

Figure 3. Theoretical model proposed to explain the relationships between childhood adversities, social emotions (internal and external shame, guilt and self-disgust) and introvertive anhedonia (proneness to negative symptoms of psychosis).

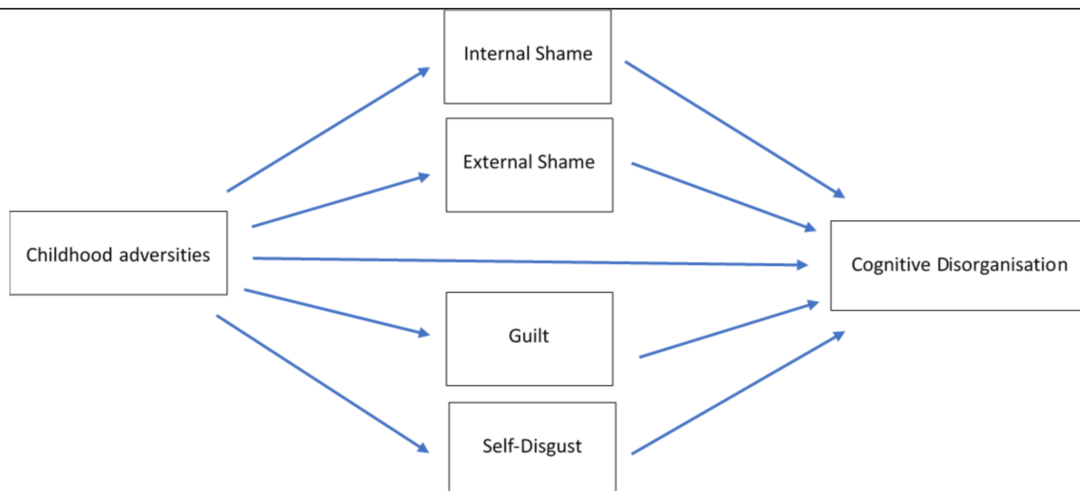

Figure 4. Theoretical model proposed to explain the relationships between childhood adversities, social emotions (internal and external shame, guilt and self-disgust) and cognitive disorganisation.

Sample

84 participants will be recruited from the general population of the UK through various online methods. See Q. 33 for information on recruitment.

Design

This study will use a cross-sectional within-subject design. The Independent variables will consist of childhood adversities whereas the dependent variables will be vulnerability to psychosis (paranoia and hallucination proneness, introvertive anhedonia and cognitive disorganisation). The study will also look at mediating variables of social emotions (internal and external shame, guilt and self-disgust).

Measures

1. Demographic Information – Demographic questions regarding participants' age range, gender, any diagnosis of psychosis or any previous mental health involvement from secondary care services.

2. Childhood Adversities - Philadelphia Adverse Childhood Experiences (PHL ACEs – Cronholm et al. 2015) – This is a 22-item self-report scale which measures exposure to childhood adversities. The PHL ACEs is comprised of the Conventional ACEs subscale, which has been adapted from the Adverse Childhood Experiences (ACEs – Felittiet al. 1998), and an Expanded ACEs subscale. The conventional ACEs consists of 15 items which measures different types of childhood trauma including, sexual abuse, physical abuse, emotional abuse, physical neglect, emotional neglect, household mental health and substance use, domestic violence and incarceration of a family member. The Expanded ACEs on the other hand contains 7 items and measures types of experiences in the community, for instance, discrimination, bullying, witnessing violence, living in an unsafe neighbourhood and living in foster care.
The original ACEs questionnaire (Felitti al. 1998) has been found to show good test-retest reliability from large epidemiological study with kappa coefficients showing good agreement (Dube et al. 2004) along with good internal consistency (Cronbach's α = .88; Murphy et al. 2014). The adapted measure has been chosen for this current study due to the inclusion of the expanded factors. The Philadelphia study by Cronholm et al. (2015) found that of 13.9% of 1,784 respondents experienced only expanded ACEs which would have done undetected if only conventional ACES were measured. Similarly, other scales such as the Childhood Trauma Questionnaire (CTQ - Bernstein et al., 2003) only measure sexual abuse and emotional and physical abuse and neglect. This does not consider factors relating to discrimination and victimisation such as bullying, as well as parental loss which has been found to have strong associations with psychosis and specifically paranoia

(Bebbington et al. 2004; Janssen et al. 2003; Lataster et al. 2006; Mirowski & Ross, 1983; Scheier et al. 2009; Varese et al 2012).

3. Paranoia - The Paranoia Scale (PS - Fenigstein and Vanable 1992) - The PS was derived from the Minnesota Multiphasic Personality Inventory (Dahlstrom et al. 1975) and was design to measure paranoid thoughts in a non-clinical population and is the most widely used measure. It is a 20-item self-report scale and is scored on a 5-point Likert scale with score ranging from 1 "not at all applicable to me," to 5 "extremely applicable to me", where higher scores indicate more paranoid symptoms. The scale has shown good internal reliability (α = 0.84) and test-retest reliability (r = 0.70) (Freeman, 2008). This scale was chosen to be used in this current study as past research has found wide ranging score on this measure within the general population (Vellante et al. 2012).

4. Hallucinations - The revised Launay-Slade Hallucination Scale (LSHS-R; Bentall & Slade, 1985) - 12-item self-report questionnaire which measures hallucinatory predisposition (Waters wt al. 2003). Items are scored on a 5-point Likert scale using the following responses 0 ''certainly does not apply to me" to 4 "certainly applies to me". Higher scores indicate greater symptoms of hallucinations. Researchers have found this measure to be reliable when assessing a normal population (Bentall & Slade, 1985) and has been found within a Portuguese sample to have Cronbach coefficient α = 0.90 (Fonseca-Pedrero et al. 2010). It has been chosen to be used in the current study as it has been used to assess subclinical levels of visual and auditory hallucinatory experience. Additionally, it has been successfully used in previous research to highlight mediating factors of trauma and hallucinations (Varese et al. 2012).

5. Negative symptoms and Cognitive Disorganisation - Oxford-Liverpool Inventory of Feelings and Experiences (O- LIFE; Mason et al., 1995). The O-Life is a 104-item self-report measure developed to measure proneness to psychosis using 4 subscales, Unusual Experiences, Cognitive Disorganisation, Introvertive Anhedonia and Impulsive Non-conformity. The Unusual Experiences (UnEx; 30-items) scale contains items describing perceptual aberrations, magical thinking, and hallucinations, traits which reflect the positive symptoms of psychosis. The Cognitive disorganisation (CogDis; 24-items) scale which considers poor attention, concentration and decision-making and social anxiety. These traits are thought to reflect thought disorder and other disorganised aspects of psychosis. The Introvertive Anhedonia (IntAn; 27 items) scale which measures a lack of enjoyment from physical and social sources of pleasure and an avoidance of intimacy. These traits are thought to reflect weakened forms of negative symptoms. Finally, the Impulsive Nonconformity (ImpCon; 23-item) scale which contains items describing impulsive, anti-social, and eccentric forms of behaviour, often suggesting a lack of self-control (Mason & Claridg, 2006). All scales consist of response choices "YES" or "NO" with total score ranging from 0-24 on the cognitive disorganisation scale and 0-27 introvertive anhedonia scale. The subscales have been shown to have high internal consistency with α = 0.89 for Unusual Experiences, α = 0.87 for cognitive disorganisation, α = 0.82 for introvertive anhedonia and α = 0.77 for Impulsive Nonconformity. These results have since been replicated by Rawlings and Freeman (1997) with 0.77, 0.81, 0.85 and 0.72 respectively. Similarly, Test–retest reliability has been found to be high with r =.86 for Unusual Experiences, r =.93 for cognitive disorganisation, r =.84 for introvertive anhedonia and r =.76 for Impulsive Nonconformity (Burch et al., 1988).

6. Internal Shame - Internalised Shame Scale (ISS; Cook, 1994) - Is a 30-item self-report scale which consists of two subscales; Internalised shame (24-items) and Self-Esteem (6-items; not used in this study). The scale measures internal shame on a 5-point Likert scale, with response choices (0) "Never", (1) "Seldom", (2) "Sometimes", (3) "Frequently" and (4) "Almost Always". Higher scores on this measure indicate higher levels of internal shame. This scale has been found to show high reliability (α = 0.97 for the shame subscale) and construct validity in both clinical and non-clinical populations (Rybak & Brown, 1996).

7. External Shame - Other as Shame Scale (OAS; Goss et al, 1994) - 18-item self-report scale, based on the ISS. The scale measures external shame on a 5-point Likert scale, with response choices (0) "Never" (1) "Seldom", (2) "Sometimes", (3) "Frequently" and (4) "Almost Always". Higher scores on this measure indicate

higher levels of external shame. It has shown good internal reliability with α = .92 (Goss et al., 1994). Similarly, this was mirrored in a study with a Portuguese sample with α = .91 (Matos et al., 2011).

8. Guilt – Personal Feelings Questionnaire-2 (PFQ-2; Harder and Zalma, 1990) is a 16-item self-report questionnaire which measures feelings of shame and guilt. Respondents indicate the frequency of their experiences a scale from (0) “never” to (4) “continuously or almost constantly”. The PFQ-2 includes 6 items assessing guilt and 10 items assessing shame. The current study will only include use of the guilt scale. The PQF-2 Guilt subscales have been shown to have internal consistency with α = .72 and good test–retest with r = .85 (Harder and Zalma, 1990).

9. Self-Disgust - Self-Disgust Scale-Revised (SDS-R; Powell et al. 2015) - 22-item self-report scale used to measure an individual's level of self-directed disgust. The SDS-R has a bi-factor structure and consists of two subscales: behavioural self-disgust (5 items) and physical self-disgust (5 items) as well as a total score relating to general self-disgust (15 items). All 15 items, measured on a 7-point scale from (1) strongly disagree to (7) strongly agree, are summed to generate a total score for self-disgust where higher scores indicate greater self-disgust. It has shown good internal reliability with α = .82 (Simpson et al. 2020).

Procedure

Participants will be recruited from the online sources set out in Q.33 (social media, online forums and charities). Participants will be given an information sheet regarding information on the studies aims, benefits and risks and data protection. Participants will access the questionnaire through a link from the programme ‘Qualtrics’. This will be presented on the first page of the online questionnaire before providing consent and starting the study. The participants will be made aware within the information sheet that they are free to withdraw from the study at any point before completing the questionnaire. Guidance set out by the BPS (2017), has highlighted the difficulties in determining whether a participant has withdrawn from the study if they have only completed a portion of the questionnaire. They suggest that use of an ‘exit’ or ‘withdrawal’ button on each page leading to a debrief page is often good practice. Within this current study a ‘withdrawal’ button will be created for each page if participants chose to withdraw from the study. Furthermore, to avoid any further problems to arise if individuals exit the study before completion, an explanation will be included within the information sheet explaining that process and that data will still be included within the research if the questionnaire in simply closed without withdrawing. This information will be repeated for participants in the consent form to confirm their understanding. Following this, on the next page there will statements of consent provided with “forced-response” tick boxes for the participant to indicate that they have read and understood the information provide and that they consent to taking part in the research. They will be unable to continue to the rest of the questionnaire until they have responded to all statements. Once consent is given, participants will complete an online questionnaire consisting of demographic information and 8 questionnaires including demographic information and childhood adversities, psychosis proneness, paranoia proneness, hallucination proneness, internal and external shame, guilt and self-disgust. Participants will be debriefed on completion of these questionnaires.

Analysis

All statistical analysis will be run using IBM SPPS Statistics Version 25.

Data will be screened initially to ensure that assumptions of further analyses are met. Histograms and boxplots of the data will be examined to check for outliers. Additionally, scatterplots will be examined to make sure that assumptions of linearity and homoscedasticity are met. Finally, Pearson correlations will be calculated between all predictor variables of the planned mediation analysis to test for multicollinearity. If the data is found to be non-parametric, the bootstrapping method will be applied to account for this.

Pearson correlations with bootstrapping will be used to explore the relationship between to explore the relationships between childhood adversities and vulnerability to psychosis and psychosis symptoms (psychosis proneness (measure by full O-LIFE score), paranoia proneness, hallucination proneness, cognitive

disorganisation and introvertive anhedonia), as well as the relationship between social emotions (internal and external shame, guilt and self-disgust) with vulnerability to psychosis.

Following this, five hierarchical regressions will be conducted to determine if childhood adversities and social emotions (internal and external shame, guilt and self-disgust) predict vulnerability to psychosis and psychosis symptoms (psychosis proneness (measure by full O-LIFE score), paranoia proneness, hallucination proneness, cognitive disorganisation and introvertive anhedonia).

Finally, five mediation analyses will be used to explore the mediating relationships. This will be explored using the computational and modelling tool PROCESS for SPSS (Hayes, 2013). Within the first mediation analysis psychosis proneness will be entered as the independent variable, for the second analysis paranoia proneness will be entered as the independent variable for the third analysis hallucination proneness will be entered as the independent variable, for the fourth analysis cognitive disorganisation will be entered as the independent variable for the fifth analysis introvertive anhedonia will be entered as the independent variable. For each mediation analysis childhood adversities as the dependent variable and social emotions a) internal shame, external shame, guilt and self-disgust will be entered as the potential mediators.

References attached

SECTION 4: Potential risks to participants and researchers

Q11. Is your research project likely or possible to induce any psychological stress or discomfort in the participants or others, indirectly associated with the research?

☒ Yes
☐ No

If "yes" state the types of risk and what measures will be taken to deal with such problems

It is likely that a proportion of individuals recruited will have experienced childhood adversities. Participants will be made aware that all data and disclosure of abuse is anonymous. Some individuals may find it distressing when asked to disclose their experiences of childhood adversities through online questionnaires. To account for this, participants will be informed before starting the questionnaires that they will be asked about childhood adversities, that they are under no obligation to take part in the research and they can withdraw at any time. Additionally, within the information sheet (see attached) and debrief sheet, information will be provided on support services and hotlines that they are able to contact.

Q12. Does your research project require any physically-invasive or potentially physically harmful procedures?

☐ Yes
☒ No

If "yes" give details and outline procedures to be put in place to deal with potential problems.

Q13. Does your research project require the use of privacy-invasive technology, such as CCTV, biometrics, facial recognition, vehicle tracking software?

☐ Yes
☒ No

If "yes" - Give details and outline procedures to be put in place to deal with potential problems.

Q14. Does your research project involve the investigation of any illegal behaviour or activities?

☐ Yes
☒ No

If "yes" - Give details of any illegal behavior or activities you may investigate

Q15. Is it possible that your research project will lead to awareness or the disclosure of information about child abuse or neglect?

☒ Yes
☐ No

If "yes" - Indicate the likelihood of disclosure and the procedures to be followed if you become aware that a child has been or may be at risk of harm

It is possible that participants will disclose previous childhood abuse or neglect from information gathered from the ACEs questionnaire. However, due to the anonymised nature of the study, we won't be able to take any further action beyond providing information of support services available.

Q16. Is it likely that dissemination of research findings or data could adversely affect participants or others indirectly associated with the research?

☐ Yes

☒ No

If "yes" - Describe the potential risk for participants/data subjects of this use of the data. Outline any steps that will be taken to protect participants.

Q17. Could participation in this research adversely affect participants and others associated with the research in any other way?

☒ Yes

☐ No

If "yes" - Describe the possible adverse effects and the procedures to be put in place to protect against them.

It is likely that a proportion of individuals recruited will have experienced childhood adversities. Participants will be made aware that all data and disclosure of abuse is anonymous. The reminder or disclosure of childhood adversities may adversely affect the individual taking part in the study. To account for this, participants will be informed before starting the questionnaires that they will be asked

about childhood adversities, that they are under no obligation to take part in the research and they can withdraw at any time. Additionally, within the information sheet (see attached) and debrief sheet, information will be provided on support services and hotlines that they are able to contact. Additionally, there will be a trigger warning on the advertisement of the study and participation information sheet.

Q18. Is this research expected to benefit the participants, directly or indirectly?

☒ Yes
☐ No

If "yes" - Give details of how this research is expected to benefit the participants.

Expected to benefit indirectly. Further research into the understanding of shame and its relationship with childhood adversities and psychosis can lead to implications in the treatment of psychosis. An example of this would be through Compassion Focussed Therapy (CFT) which was developed to treat problems associated with shame (Gilbert, 2014). Additionally, it has a potential role to play in the early intervention phase of psychosis.

Q19. Will the true purpose of the research be concealed from the participants/data subjects?

☐ Yes
☒ No

If "yes" - Explain what information will be concealed and why.

Q20. Will participants/data subjects be debriefed at the conclusion of the study?

☒ Yes
☐ No

If "no" – Why will participants / data subjects not be debriefed?

Q21. At any stage in this research could researchers' safety be compromised, or could the research induce emotional distress in the researchers?

☐ Yes
☒ No

If "yes" - Give details and outline procedures to be put in place to deal with potential problems.

Please tick to confirm you agree with the following:

I will adhere to School guidance on risk assessment and health and safety and will seek advice on project and travel insurance prior to project commencement.

☒ I agree

☐ I do not agree

☐ Not applicable

SECTION 5: Participants and data subjects. For autoethnographic research also include those who may feature in your writings.

Q22. How many participants or data subjects are expected to be included in your research project?

To determine the sample size, previously literature was reviewed to predict the range of effect sizes for the current study. For the relationship between childhood adversities with variables shame and self disgust medium and large effect sizes were reported (Gilbert et al. 2003; Fowke et al. 2012, Simpson et al. 2020). For the relationship between shame and psychosis, a recent systematic review reported mostly medium effect sizes with one small and one large effect size from 11 studies (Carden et al. 2020). Similarly, research as found medium and large effect sizes for the relationships between psychosis with self-disgust (Simpson et al. 2020). Additionally, as no effect sizes were found for the relationships between childhood adversities with guilt and guilt with psychosis, medium effect sizes were assumed. Thus, for the purpose of power calculation, a medium effect size will be assumed.
*To establish the sample size for the current study G*Power was used for correlation and regression analyses. Based on the previous literature an effect sized of 0.3 (considered medium in G*Power) was used alongside a statistical power of 0.8 and an alpha level of 0.05 (Faul et al. 2006). A two-tail approach was used to reduce the chance of type II error. For the correlation analysis, the calculation estimated a minimum sample size of 84 for the study to have adequate power. For the regression analyses, five predictors were included in the calculation (childhood adversity, internal shame and external shame, guilt and self-disgust). The calculation estimated a minimum sample size of 31 for the study to have adequate power.*
Similarly, for the mediation analysis, this current study assumes a medium effect size for the relationships between childhood adversity with shame, guilt and self-disgust. Additionally, medium effect sizes are assumed for the relationships between shame, guilt, and self-disgust with psychosis. When using Fritz and Mackinnon (2007) equation for determining sample size with medium effect sizes for both relationships and adopting a power level of 0.8, a sample size of 71 is suggested.
Taken together, this study will aim to recruit a minimum sample of 84 in order to achieve adequate power based on conservative assumptions.

Q23. What criteria will be used in deciding on the inclusion and exclusion of participants/data subjects in your research project?

Inclusion criteria: Self-identified to have sufficient fluency in English to fill in questionnaires without additional support, 16 years old or older. Participants will also have to be UK based.
Exclusion criteria: Unwilling or unable to provide informed consent.

Q24. Are any of the participants or data subjects likely to be under 16 years of age?

☐ Yes
☒ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

Q25. Are any of the participants or data subjects likely to be children in the care of a Local Authority?

☐ Yes
☒ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

Q26. Are any of the participants or data subjects likely to be known to have additional support needs?

☐ Yes
☒ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

Q27. In the case of participants with additional support needs, will arrangements be made to ensure informed consent?

☐ Yes

☐ No

If "yes" – What arrangements will be made?

N/A for this project

If "no" – Please explain why not

Q28. Are any of the participants or data subjects likely to be physically or mentally ill?

☒ Yes
☐ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

It is likely that some participants will be mentally ill due to recruitment strategies from charities and forums surrounding childhood adversities. To account for this, participants will be informed before starting the questionnaires that they will be asked about childhood adversities, that they are under no obligation to take part in the research and they can withdraw at any time. Additionally, within the

information sheet (see attached) and debrief sheet, information will be provided on support services and hotlines that they are able to contact.

Q29. Are any of the participants or data subjects likely to be vulnerable or likely exposed to harm in other ways?

☒ Yes
☐ No

If "yes" - Explain and describe the nature of the vulnerability and the measures that will be used to protect and/or inform participants/data subjects.

Please see answer to Q. 28 above

Q30. Are any of the participants or data subjects likely to be unable to communicate in the language in which the research is conducted

☐ Yes
☒ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

Q31. Are any of the participants or data subjects likely to be in a relationship (i.e., professional, student-teacher, other dependent relationship) with the researchers?

☐ Yes
☒ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

Q32. Are any of the participants or data subjects likely to have difficulty in reading and/or comprehending any printed material distributed as part of the study?

☐ Yes
☒ No

If "yes" - Explain and describe the measures that will be used to protect and/or inform participants/data subjects.

Q33. Describe how the sample will be recruited.

84 participants will be recruited from the general population of the UK. The study is limited to a UK population due to the variations in experiences in guilt and shame across different cultures and countries (Wong & Tsai, 2007). If a wider population was to be included within the current study, this may influence the results of the study and make it hard to generalise to a UK population.

The current study will recruit through various online methods. Firstly, using UK online forums. These will be on sites such as 'www.mentalhealthforum.net' (permission pending). The study will be posted on specific forums such as 'Mental health experiences' and 'Bullying, mental and physical abuse'.

Another method of online recruitment will be through seeking out advertisement from UK charities to recruit members of their organisations. Potential charities will include 'One in four', 'the National Association for People Abused in Childhood' and 'Institute of recovery from Childhood Trauma'.

The final method will be by using social media, such as twitter and facebook, these will be used to reach out to different UK pages, charities (see above) and groups to further advertise the study. Potential pages will include ""ACEs UK"" and "ACE-Aware Nation" (pending permission). Additionally, university Facebook and Twitter pages will be contacted for advertising the study on their social media sites due to high rates of paranoia and hallucination proneness found among university student (Ellett et al. 2003; Johns, 2005; Lincoln & Keller, 2008). Furthermore, the use of hashtags will be used which allows social media users to find content of similar themes.

The owners of these forums, charities and social media pages will be contacted to post the online advertisement on their pages/websites or to "retweet" on twitter. The online advertisement will include a link to the study on Qualtrics. This will host the participation information sheet, where they will also be able to download a copy as PDF. After the participant information sheet has been shown, participants will be asked to confirm they have read the information sheet and will be next shown the consent form. Only once participants have confirmed they have read the information sheet and provided consent will they be able to take part in the study.

Q34. Will participants receive any financial or other material benefits as a result of participation?

☐ Yes
☒ No

If "yes" - What benefits will be offered to participants and why?

Section 6: Participant or data subject information and consent

Q35. Will written consent be obtained from all participants or data subjects?

☒ Yes
☐ No

If "yes" – attach participant information sheet and consent form
If "no" – explain why not and how consent is obtained (e.g. orally), and/or if consent cannot or should not be sought for some reason, please provide a clear case and rationale for this

See information sheet attached

Q36. Have you made arrangements to tell participants what information you will hold about them and for how long?

☒ Yes

☐ No

If "yes" - what arrangements have been made?

See information sheet attached

Q37. Have you made arrangements to tell participants whether you will disclose the information to other organisations?

☒ Yes
☐ No

If "yes" - What arrangements have been made?

See information sheet attached

Q38. Have you made arrangements to tell participants whether you will combine that information with other data?

☒ Yes

☐ No

If "yes" - What arrangements have been made?

See information sheet attached

Q39. In the case of children participating in the research, will the consent or assent of parents be obtained?

☐ Yes
☐ No

If "yes" - Explain how this consent or assent will be obtained

N/A for this project

If "no" – Please explain why you won't be obtaining consent

Q40. Will the consent or assent of children participating in the research be obtained?

☐ Yes

☐ No

If "yes" - Explain how this consent or assent will be obtained

N/A for this project

If "no" – Please explain why not

Q41. In the case of participants who are not proficient in the language in which the research is conducted, will arrangements be made to ensure informed consent?

☐ Yes

☐ No

If "yes" – What arrangements will be made?

N/A for this project

If "no" – Please explain why not

Q42. Does the activity involve using cookies or tracking individual's activity on a website or the Internet in general?

☐ Yes
☒ No

If "yes" – Describe the arrangements, you have put in place to obtain informed consent for the use of these tools?

SECTION 7: Confidentiality and handling of data

Q43. What information about participants/data subjects will you collect and/or use?

Data will be gathered online via 'Qualtrics'. This is a secure password protected data management platform. The questions and measures outlined in Q.10 of the ethic form will be used within the survey to collect information from the participants. The survey will be anonymised and the researcher will not be able to trace who has completed the survey.

Previous research has raised questions as to whether data from online surveys can truly be anonymised (Van Selm & Jankowski, 2006). A lot of these problems tend to arise from survey where participants have been recruited by email (Sheenan & McMillan, 1999). Within the current study however, participants will be recruited through online forums and social media, and not via email. Additionally, no identifiable information will be asked for as part of the questionnaire. Patients will be asked their age range, rather than specific age, to help protect their anonymity. According to the BPS guidelines for conducting online research, it suggests that anonymity may be compromised by publishing the name or address of the websites in which participants can be recruited. However, they note that this is often in reference to specific quotes or direct information taken from the websites or forums and the risk of potential harm is low for quantitative aggregate data analysis (BPS, 2017). Additionally, the current study does not include any 'open text' responses and therefore increase the anonymity of participants.

Q44. Will you collect or use NHS data?

☐ Yes

☒ No

If "yes" – what NHS data will you collect or use?

Q45. What training will staff who have access to the data receive on their responsibilities for its safe handling? Have all staff who have access completed the mandatory data protection training on the self-enrolment page of Learn?

Only the researcher (Alice Marten, Trainee Clinical Psychologist) and their supervisors (Helen Griffiths and Angus Macbeth) will have access to the data received who has access to the mandatory data protection training on the self-enrolment page.

Q46. Will the information include special categories of personal data (health data, data relating to race or ethnicity, to political opinions or religious beliefs, trade union membership, criminal convictions, sexual orientations, genetic data and biometric data)

☐ Yes

☒ No

If "yes" – Explain what safeguards e.g. technical or organisational you have in place; including any detailed protocols if this requires special and/or external processing, storage, and analysis.

If you answered "no" to this question, please skip Q56 and continue answering the rest of the questions..

Q47. Please indicate how your research is in the public interest:

☒ Your research is proportionate

☐ Your research is subject to a governance framework

☐ Research Ethics Committee (REC) review (does not have to be a European REC)

☐ Peer review from a funder

☐ Confidentiality Advisory Group (CAG) recommendation for support in England and Wales or support by the Public Benefit and Privacy Panel (PBPP) for Health and Social Care in Scotland

☐ Other

Q48. It is essential that you identify, and list all risks to the privacy of research participants. You will then need to consider the likelihood of the risks actually manifesting and the severity of harm if the risks actually manifest.

Risk	**Likelihood of risk manifesting**			**Severity of harm**		
	Remote	**Possible**	**Probable**	**Minimal**	**Significant**	**Severe**
Identifiable due to data linkage	x	☐	☐	x	☐	☐
Identifiable due to low participant numbers	x	☐	☐	x	☐	☐
Identifiable due to geographical location	x	☐	☐	x	☐	☐
Identifiable due to transfer of data	x	☐	☐	x	☐	☐
Identifiable due to access of data	x	☐	☐	x	☐	☐
Insert more rows as appropriate	☐	☐	☐	☐	☐	☐

Please use this text box to record any other risks and the likelihood of them occurring, along with the severity of harm.

N/A

Please identify measures you could take to reduce or eliminate risks identified as possible/significant or probable/severe.

N/A

Q49. Will information containing personal, identifiable data be transferred to, shared with, supported by, or otherwise available to third parties outside the University?

☐ Yes

☒ No

If "yes" - Please explain why this necessary and how the transfer of the information will be made secure. If the third party is based outside the European Economic Area please obtain guidance from the Data Protection Officer.

Q50. Other than the use by third parties, will the data be used, accessed or stored away from University premises?

☒ Yes
☐ No

If "yes" - Describe the arrangements you have put in place to safeguard the data from accidental or deliberate access, amendment or deletion when it is not on University premises, including when it is in transit, and (where applicable) it is transferred outside the EEA.

Data will be saved and stored on the University of Edinburgh server only. Annoymised data will be accessed remotely away from the university on the researchers personal laptop via a VPN.

Q51. Will feedback of findings be given to your research project participants or data subjects?

☒ Yes

☐ No

If "yes" - How and when will this feedback be provided?

Please see Q. 12 below

If "no" - Please provide rationale for this.

Q52. How do you intend to use/disseminate the results of your research project?

Firstly, the current project will be submitted to the University of Edinburgh as part of a doctoral thesis along with a systematic review. The thesis will be uploaded to the universities thesis database in order to disseminate the results.

The contact details of the researcher will be made available to the participants of the study upon completion of the questionnaires. Participants will be made aware that they are able to contact the researcher if they wished to be informed of the results of the research (see information sheet).

Finally, a lay summary of the research will be posted on the sites used to help recruit participants (e.g. www.mentalhealthforum.net, relevant social media pages and charities). This will be done as it will disseminate results to the larger community, including those who did not wish to partake in the research.

SECTION 8: Security-sensitive material

The Terrorism Act (2006) outlaws the dissemination of records, statements and other documents that can be interpreted as promoting or endorsing terrorist acts.

Q53. Does your research involve the storage on a computer of any such records, statements or other documents?

☐ Yes

☒ No

If "yes" - Please tick 'Yes' to indicate that you agree to store all documents on that file store

Q54. Might your research involve the electronic transmission (for example, as an email attachment) of such records or statements?

☐ Yes
☒ No

If "yes" - Please tick 'Yes' to indicate that you agree not to transmit electronically to any third party documents stored in the file store

Q55. Will your research involve visits to websites that might be associated with extreme, or terrorist, organisations?

☐ Yes
☒ No

If "yes" - You are advised that such sites may be subject to surveillance by the police. Accessing those sites from University IP addresses might lead to police enquiries. Please acknowledge that you understand this risk by ticking 'Yes'

☐ Yes
☐ No

By submitting to the ethics process, you accept that your School Research Ethics Officer and the convenor of the University's Compliance Group will have access to a list of titles of documents (but not

the contents of documents) in your document store. Please acknowledge that you accept this by ticking 'Yes'

Please confirm that you have contacted your School Research Ethics Officer to discuss security-sensitive material by ticking ‘Yes’

☐ Yes, I have contacted my School’s Research Ethics Officer
☐ No, I have not contacted my School’s Research Ethics Officer

Section 9: Copyright

Q56. Does your project require use of copyrighted material?

☒ Yes
☐ No

If "yes" please give further details

PHL ACEs – Copyrighted measure, free to download from website *PS, LSHS-R, O-LIFE, ISS, OAS, PFS-2 and SDS-R - published in articles as table or abstract and free to use within thesis/dissertation or research.*

Section 10: Good conduct in collaborative research

Q57. Does your project involve working collaboratively with other academic partners?

☐ Yes
☒ No

If "yes" - Is there a formal agreement in place regarding a collaborative relationship with the academic partner(s)?

If "no" - Please explain why there is no formal agreement in place?

Q58. Does your project involve working collaboratively with other non-academic partners?

☐ Yes
☒ No

If "yes" - Is there a formal agreement in place regarding a collaborative relationship with the non-academic partner(s)?

If "no" - Please explain why there is no formal agreement in place.

Q59. Does your project involve employing local field assistants (including guides/translators)?

☐ Yes
☒ No

If "yes" - Is there a formal agreement in place regarding the employment of local field assistants (including guides and translators)?

If "no" - Please explain why there is no formal agreement in place

Q60. Will care be taken to ensure that all individuals involved in implementing the research adhere to the ethical and research integrity standards set by the University of Edinburgh?

☐ Yes

☐ No

If "no" - Please explain why care will not be taken

N/A

Q61. Have you reached agreement relating to intellectual property?

☐ Yes
☐ No

If "no" - Please explain why you have not reached agreement

N/A

Section 11: Good conduct in publication practice

In publication and authorship, as in all other aspects of research, researchers are expected to follow the University's guidance on integrity.

By ticking yes, you confirm that full consideration of the items described in this section will be addressed as applicable

☒ Yes
☐ No

Subsequent to submission of this form, **both the applicant and their supervisor should review any alterations in the proposed methodology of the project.** If the change to methodology results in a change to any answer on the form, then a resubmission to the Ethics subgroup is **required.**

The principal investigator is responsible for ensuring compliance with any additional ethical requirements that might apply, and/or for compliance with any additional requirements for review by external bodies.

ALL forms should be submitted in electronic format. Digital signatures or scanned in originals are acceptable. The applicant should keep a copy of all forms for inclusion in their thesis.

	Alice Marten	17/12/2020
Applicant's Name	Applicant's Signature	Date signed

	Helen Griffiths	08/02/21
*Supervisor Signature[1]	Supervisor Name	Date

*NOTE to Supervisor: Ethical review will be based only on the information contained in this form. If countersigning this check-list as truly warranting all 'No' answers, you are taking responsibility, on behalf of the HSS and UoE, that the research proposed truly poses no ethical risks.

ISSUES ARISING FROM THE PROPOSAL

[1] Not required for staff applications

Reviewers comments 28.2.21

Project Summary

Sample – We need more info about actual recruitment strategy. It simply states "various online methods". There is a bit more information in Q33 but will the participants be asked to contact the researcher and then the researcher will email consent via an email? If not - How will the participants be provided with the participant info screen/sheet? Will they click a link to a Qualtrics platform where these will be hosted? Need more information here.

Q17 you answered no but you answered yes to Q11. They could be adversely affected because of the questions regarding abuse and neglect.

Q50. Other than the use by third parties, will the data be used, accessed or stored away from University premises? *Data will be stored on the University of Edinburgh server. Annoymised data will be accessed remotely away from the university on the researchers personal laptop via a VPN.*

1. Need to confirm that you will only save and store data on the online university supported server.

Social Media advert

Quite a few of your questionnaires will ask about abuse and neglect. There should be a trigger warning in the advert (or emails) alerting participants about this.

Participant Information Sheet

First paragraph should state who is running the research.

Am I eligible to take part? ... You do not need to have experiences of these to take part in the current study. – everyone has experienced childhood and mental health – suggest re-editing.

Who can I contact? – It may be easier to provide just one contact for questions (not three). Complaints contact is incorrect – this should be HoS - If you have a complaint which you feel you cannot discuss with the above contacts, you can contact the Head of School for Health and Social Science: Matthias Schwannauer, headofschool.health@ed.ac.uk.

Debrief Sheet

Same points as above for Contacts.

The applicant should respond to these comments in section below.

Signature:

Position: Ethics and Integrity Lead

Date: 28.2.21

APPLICANT'S RESPONSE (If required)

Project Summary

Sample – Q. 33 has been changed to add more information on recruitment (see Q33 above – text in red to indicate changes). Changes also pasted below.

The owners of these forums, charities and social media pages will be contacted to post the online advertisement on their pages/websites or to "retweet" on twitter. The online advertisement will include a link to the study on Qualtrics. This will host the participation information sheet, where they will also be able to download a copy as PDF. After the participant information sheet has been shown, participants will be asked to confirm they have read the information sheet and will be next shown the consent form. Only once participants have confirmed they have read the information sheet and provided consent will they be able to take part in the study.

Q17 – Has been changed to reflect that participants may be adversely affected due to disclosure of childhood adversities (See Q17 above – text in red to indicate changes). Changes also pasted below.

It is likely that a proportion of individuals recruited will have experienced childhood adversities. Participants will be made aware that all data and disclosure of abuse is anonymous. The reminder or disclosure of childhood adversities may adversely affect the individual taking part in the study. To account for this, participants will be informed before starting the questionnaires that they will be asked about childhood adversities, that they are under no obligation to take part in the research and they can withdraw at any time. Additionally, within the information sheet (see attached) and debrief sheet, information will be provided on support services and hotlines that they are able to contact. Additionally, there will be a trigger warning on the advertisement of the study and participation information sheet.

Q50 - Has been changed to reflect that participants may be adversely affected due to disclosure of childhood adversities (See Q50 above – text in red to indicate changes). Changes also pasted below.

Data will be saved and stored on the University of Edinburgh server only. Annoymised data will be accessed remotely away from the university on the researchers personal laptop via a VPN.

Social Media advert

Changes made on online advert (attached) to include trigger warning – Changes written in red text to indicate changes (to be changed to black for study)

Participant Information Sheet

Changes made to Participant information sheet (attached) as requested – Changes written in red text to indicate changes (to be changed to black for study)

Debrief Sheet

Changes made to debrief sheet (attached) as requested – Changes written in red text to indicate changes (to be changed to black for study)

Signature:

Date: 05/03/2021

CONCLUSION TO ETHICAL REVIEW (if required)

The applicant's response to our request for further clarification or amendments has now satisfied the requirements for ethical practice and the application has favourable opinion from Clinical Psychology Ethics Committee.

Signature:

Position: Ethics and Integrity Lead

Date: 11.3.21

AMENDMENT/S: REQUEST FOR APPROVAL
Signatures: Date:
CONCLUSION TO ETHICAL REVIEW OF AMENDMENT
The applicant’s response to our request for further clarification or amendments has now satisfied the requirements for ethical practice and the application has therefore been approved. Signature: Position: Date:

Acronyms / Terms Used

NHS: National Health Service

SHSS: School of Health in Social Science

IRAS: Integrated Research Applications System

Section: The SHSS is divided into Sections or subject areas, these are; Nursing Studies, Clinical Psychology, C-PASS.

Ethics Administrators

Nursing Studies: nursing@ed.ac.uk

Counselling, Psychotherapy and Applied Social Science: CPASS.ethics@ed.ac.uk

Clinical Psychology: Submitting.Ethics@ed.ac.uk

MA in Health, Science and Society: mahssug@ed.ac.uk