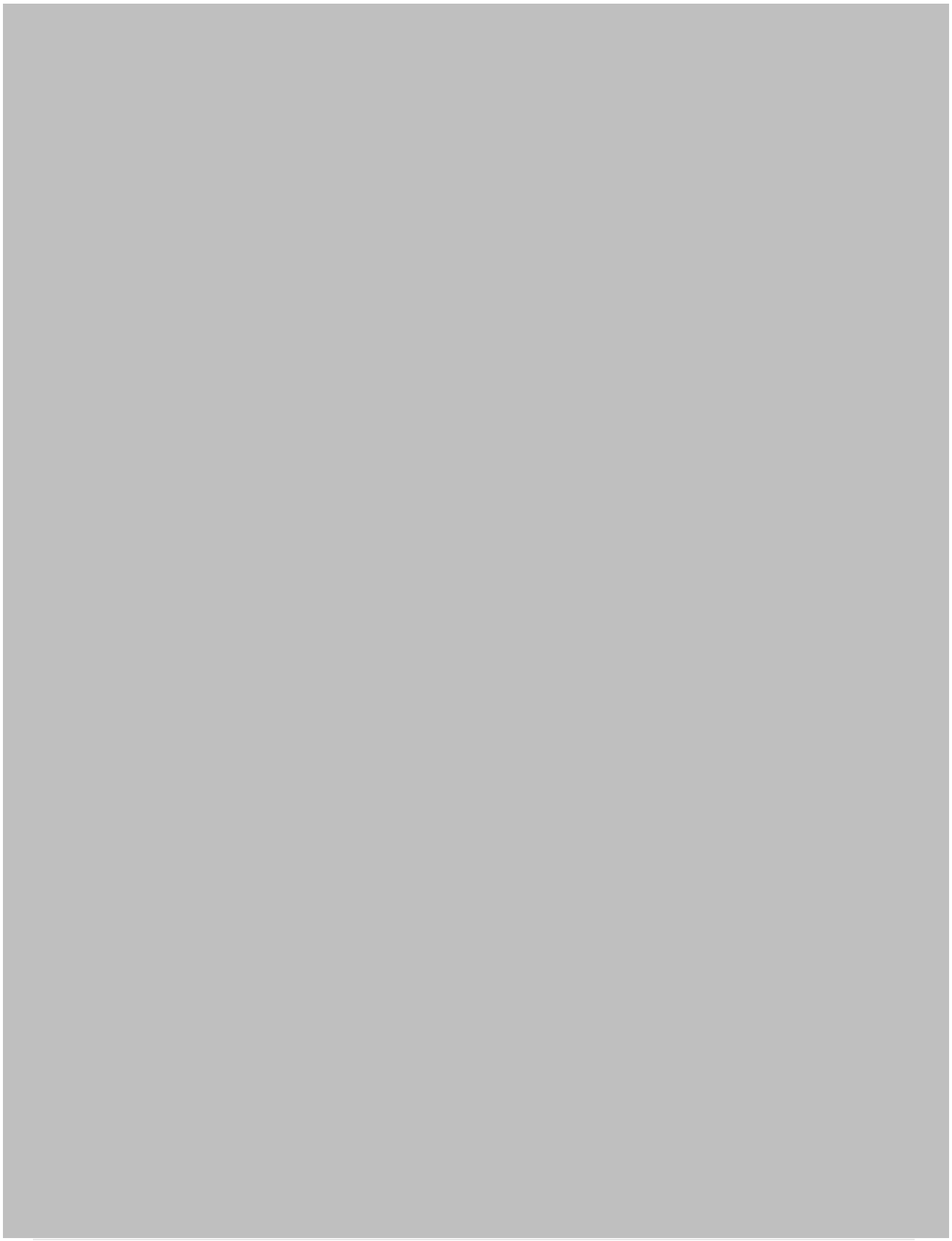

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Volume 1: Research Component

The role of childhood trauma and shame in social anxiety and paranoia within an early intervention in psychosis population

Submitted by

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A thesis submitted to the
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Overview

This thesis is submitted as part of the Doctorate in Clinical Psychology at the School of Psychology, University of Birmingham. There are two volumes; first a research component that includes an empirical study and a review of the literature is presented. Second, a clinical component including five clinical practice reports.

Volume I: Research Component

The literature review explored the role of shame in psychosis. Shame has received much attention as a key transdiagnostic moderator of psychopathology. However, empirical investigation of shame in psychosis has only received attention in recent times. This presents a timely opportunity to review this literature. Much of the research to date has focused on shame associated with having a psychotic illness, due to this being a highly stigmatised diagnosis. This appeared to be strongly linked with emotional dysfunction such as post-psychotic depression and social anxiety. In addition, childhood adversity perceived as shaming may result in trait proneness towards post psychotic emotional dysfunction. Trait disposition of shame may also moderate the severity of paranoia and hearing voices, however this relationship is yet to be adequately investigated. This review suggested that future research should focus on clarifying pathways that link early shaming experiences to post-psychotic emotional dysfunction and severity psychotic symptoms. A number of methodological issues are highlighted in the literature, in particular that of definitions and measurement of shame.

The empirical paper explores the relationship of childhood trauma and shame in social anxiety and paranoia within a first episode of psychosis population, utilising quantitative methodology. The association between childhood adversity and paranoia and social anxiety is well documented. A small body of research has indicated that shame may be a key moderator of this relationship, due to its association with the development of social fears. However, this has not been fully examined within a clinical population with psychosis. This study explored existing proposed pathways that suggested different types of shame may be linked to paranoia and social anxiety. It was found that both paranoia and social anxiety were strongly linked with shame, but external shame in particular. The relationship between childhood adversity and social anxiety and paranoia was highly correlated, and this association was significantly moderated by shame. No specific type of shame emerged as an amplifier of this

relationship. This indicated that shame is a key variable for those who experience social anxiety and paranoia following a first episode of psychosis. However, models that propose these social fears can be differentiated via distinct shame pathways have not been fully supported. It was concluded that the high amount of social anxiety and paranoia in this group may be reflective of shaming developmental adversity and shame associated with having a psychotic illness.

Volume II: Clinical Component

Five clinical practice reports are presented in the second part of this thesis. First, a case formulation from both a psychodynamic and a cognitive behaviour therapy perspective is presented for a 51 year old female who presented to a Community Mental Health Team (CMHT) with depression. Second, a single-case experimental design was applied to assess the outcome of an assertiveness intervention with a 43 year old female who presented to a CMHT with a reoccurring depression. Third, a service evaluation was conducted to map out the activity levels of staff and patients at an older adults' ward that cared for people with dementia and or mental health difficulties. A case study of the cognitive behavioural therapy and systemic intervention with a 14 year old female who was diagnosed with obsessive compulsive disorder is presented. Finally, an abstract is included that outlines the formulation of the social anxiety and paranoia experienced by 23 year old male within an Early Intervention in Psychosis Service.

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Literature Review:
The role of shame in psychosis

Word count: 6776

Abstract

Aims This review aimed to examine the role of shame within psychosis. Shame is a self-conscious emotion that has been identified as being a key transdiagnostic moderator of mental illness. However, its association with psychosis appears to be less well defined. The current paper sought to review the empirical literature to date to explore this relationship.

Method Two databases (Medline and Web of Science) were utilised to search for papers that could be included which met the following inclusion criteria: 1) Published in English; 2) involved people with psychosis or included a measure of a psychotic construct within a normal population; 3) Included a measure of shame; 4) To have been peer reviewed or currently in press 5) Must have produced new quantitative data.

Results Twenty-two studies were deemed appropriate for inclusion. Studies were assessed against a quality criteria and relevant information was accumulated to help answer a number of predefined questions. This included how shame was conceptualised within the literature. How common shame is within psychosis. Is shame associated with emotional dysfunction in psychosis. Is shame a vulnerability factor for psychosis. Also, is shame associated with severity of psychotic symptoms?

Discussion This review found that much of the research thus far has focused on shame associated with having a psychotic illness. It appears this stigma of having a psychosis diagnosis may play a role in this. There is a growing body of evidence that shame associated with psychosis is a key factor in the high amounts of social anxiety, post-psychotic depression and post-psychotic trauma among individuals with the illness. The link between childhood adversity and paranoia and voice hearing may be moderated by shame. However, these findings are in their infancy. Pathways from childhood adversity to post psychotic emotional dysfunction may also be moderated by shame. This review suggested that future research should further establish an understanding of these pathways. In addition, Compassionate Mind Training (Gilbert, 2009) is identified as an intervention with potential to help shame prone individuals however this needs to be further investigated. The review also highlighted a number of methodological issues within the literature, especially around how shame is defined and measured.

1. Introduction

Psychosis is a common, yet poorly understood condition with incidence rates of 32 per 100,000 (Kirkbride Jones, 2011). It is typified by positive symptoms such as delusional thinking, paranoia, hallucinatory experiences, coupled with negative symptoms such as apathy and cognitive impairment (Mueser & McGurk, 2004). Many such experiences can cause large amounts of distress, particularly if delusions are of a persecutory nature (van Os & Kapur, 2009). Psychosis is a central feature of several mental health diagnoses with schizophrenia and schizoaffective disorder perhaps being the most widely known of these. Psychosis has been shown to impact negatively on quality of life as well as inhibit social inclusion through unemployment (Killaspy et al, 2013) and reduced quality of relationships (Redmond, Larkin & Harrop, 2010). The total cost of Schizophrenia in England is estimated at £6.7 billion, including direct treatment and indirect burden costs (Mangalore & Knapp, 2007).

More recently though psychotic type experiences may be at times mapped on to a continuum as opposed to binary or categorical definition of psychosis or schizophrenia (van Os, Linscott, Myin-Germeys, Delespaul & Krabbendam 2009). This way of conceptualising psychosis followed on from research which showed that experiences such as hearing voices is actually a common occurrence amongst people in the general population without a label of Schizophrenia or psychosis (Romme & Escher, 1989). This has allowed for further research into experiences such as paranoia amongst non-clinical populations (Freeman, Pugh, & Garety, 2008).

First line treatment for psychosis has traditionally been antipsychotic medications (Shen, 1999). However, in the recovery phase from psychosis a significant proportion of patients present with treatment resistant symptoms and emotional dysfunction difficulties (Tiihonen et al., 2003; Birchwood, 2003). Consequently, there has been an increased interest in psychosocial factors that moderate psychotic experiences (Birchwood et al., 2006). These have included the measurement of problematic emotional dysfunction (van Os, Kennis & Rutten, 2010) in addition to traumatic developmental experiences before the formation of a psychotic illness (Varese et al, 2012). Post-psychotic depression (Birchwood et al., 2000), anxiety (Birchwood et al., 2006) and trauma (Morrison, Frame & Larkin, 2003; Jackson, Knott, Skeate & Birchwood, 2004; Jackson, Bernard & Birchwood, 2011), have received

much empirical attention. However, one potential influential variable in psychosis which appears to have not received the same level of consideration is shame.

This is surprising given that shame has received considerable empirical evaluation across a range of diverse mental health conditions (Tagney, Wagner & Gramsaw, 1992; Pallanti & Quercioli, 2000). Evidence exists for the role of shame in the formation and maintenance of depression and social anxiety (Gilbert, 2000; Mills, 2005). In addition, an evidence base is emerging for shame and other psychopathologies such as eating disorders (Goss & Allan, 2009) and Post Traumatic Stress Disorder (Andrews, Brewin, Chris, Rose, Kirk, 2000). Accordingly, shame has been conceptualised as a trans-diagnostic moderator of severity of mental pathology (Gilbert, 2000; Neff, 2007; Mills, 2005).

Within recent empirical literature shame has been identified as moderating the individual's response to experiencing a psychosis, a highly stigmatised mental illness (Birchwood et al., 2006). Accordingly, shame is an important consideration in understanding an individual's experience of and reaction to psychotic experience and may have profound implications for the trajectory of recovery (Turner, Bernard, Birchwood, Jackson & Jones 2013). How shame has been conceptualised within the literature is worth considering before investigating its role within psychosis.

1.1 Shame

Shame has broadly been conceptualised as a socially focused, self-conscious emotional process that orientates around punitive self-judgement and wariness around negative evaluation from others (Mills, 2005; Miller and Mason, 2005). This negative evaluation from others is perceived as a threat due to the potential of being rejected or even harmed by others.

It has been theorised that proneness to shame may play a central role in psychopathology (Lewis, 1971, 1987) and in physical health (Dickerson, Gruenewald & Kemeny, 2004). The role of connectedness to others may be a vital element of this. The importance of attachment to others and belonging to relationships and groups is central to humans for both mental and physical health purposes (Baumeister & Leary, 1995) and this is seen throughout human evolution (Gilbert, 1997). The experience of shame has been linked with the increased release of the stress hormone cortisol in conditions where there is a social-self threat present (Gruenewald, Kemeny, Aziz & Fahey, 2004). A self-perception of feeling defective as a person may alarm an individual that others are thinking badly of them and will

not be accepting of them and consequently reduce their social attractiveness. This subsequently prompts an individual to conceal their flaws through subtle or absolute avoidance (Gilbert, 2009).

This is based on a social rank theory (Gilbert, 2000), which suggests that having traits that may be unattractive may "down rank" us as individuals, leading one to feel inferior. Therefore, shame is important as it makes us aware of the possibility that we may exist negatively in the minds of others and therefore it alerts us that we may need to take action in order to reduce negative consequences of this such as rejection from others. Hence, shame is often associated with behaviour such as subordination or withdrawal to ensure we do not experience further loss of status or even attacks (Gilbert, 2000).

Shame is generally referred to as a global construct, but it may be related to specific exposures. For example, if a developmental environment consisted of strict high standards for physical appearance, then shame may be more likely felt for appearance than other traits (Mills, 2005). In addition, it has been highlighted that the literature tends not to separate out different types of shame, such as external shame, internal shame or generalised versus shame about a particular incident (Gilbert, 1998). However, it has been postulated that when measuring shame, it should be assessed in relation to a shaming context from which it has developed or its different components (Lemming & Boyle, 2004).

1.2 Shame and Guilt

Both shame and guilt have been referred to as "moral emotions" that stop socially undesirable behaviours, sometimes without much differentiation between the two (Tangney, 1996). Interestingly, its conceptualisation as a moral emotion may have resulted in less empirical research on shame's role within psychopathology (Pallanti & Quercioli, 2000). Theoretically, guilt has been associated more with the act that an individual may have done, which remains at the centre of the evaluation, whereas in shame it is the person that is negatively evaluated and they are at the centre of the negative evaluation (Lewis, 1971). Another distinction between shame and guilt is that guilt is associated with behaviours which function to repair social relationships following acts we feel bad about, whereas shame is linked with more global negative evaluation and with behaviours of social withdrawal (Cozolino, 2006). Such definition of shame as a global negative self-evaluation is important when appreciating why it may present in wide-range of psychopathologies (Gilbert, 2010)

whereas guilt has been found to have only weak correlations with mental health difficulties (Tagney et al., 1992).

1.3 Shame and Self-Esteem

A further distinction is between shame and self-esteem. A feature of self-esteem appears to be the importance of doing well, in particular when compared to other people (Gilbert, 2005). This would be more compatible with an ingrained sense of societal social rank. This can been seen in the Rosenberg self-esteem (Rosenberg, 1965) measure "I feel that I am a person of worth, at least on an equal plane with others". In addition, shame is not just an absence of self-esteem; as it is marked by its lack of warmth and kindness, and driven by self-criticism and hatred (Gilbert 2009). Furthermore, shame differs in its function from self-esteem as it serves to alert us that our status within important groups may be compromised due to existing negatively in the minds of others (Gilbert, 2005) so we can take action to minimise negative consequences.

1.4 How shame develops

Gilbert (2000) posited a model where an individual initially develops external shame in relation to personally shaming experiences. As seen in Figure 1, there are two proposed defence strategies for this; the first being an internalisation of shame where one becomes submissive and subordinate and therefore likely to self-monitor and to self-criticise. The other is to externalise this humiliating feeling via an attacking, dominant approach, thus keeping the self-safe by overpowering the threatening other. A distinction is made between external social world fears and beliefs (what others malevolent intentions are) and internal world fears and beliefs (fear of one's own inadequacies). Both types of shame appear strongly related, however, distinguishing between these two concepts is seen as important when considering the safety strategies used by individuals.

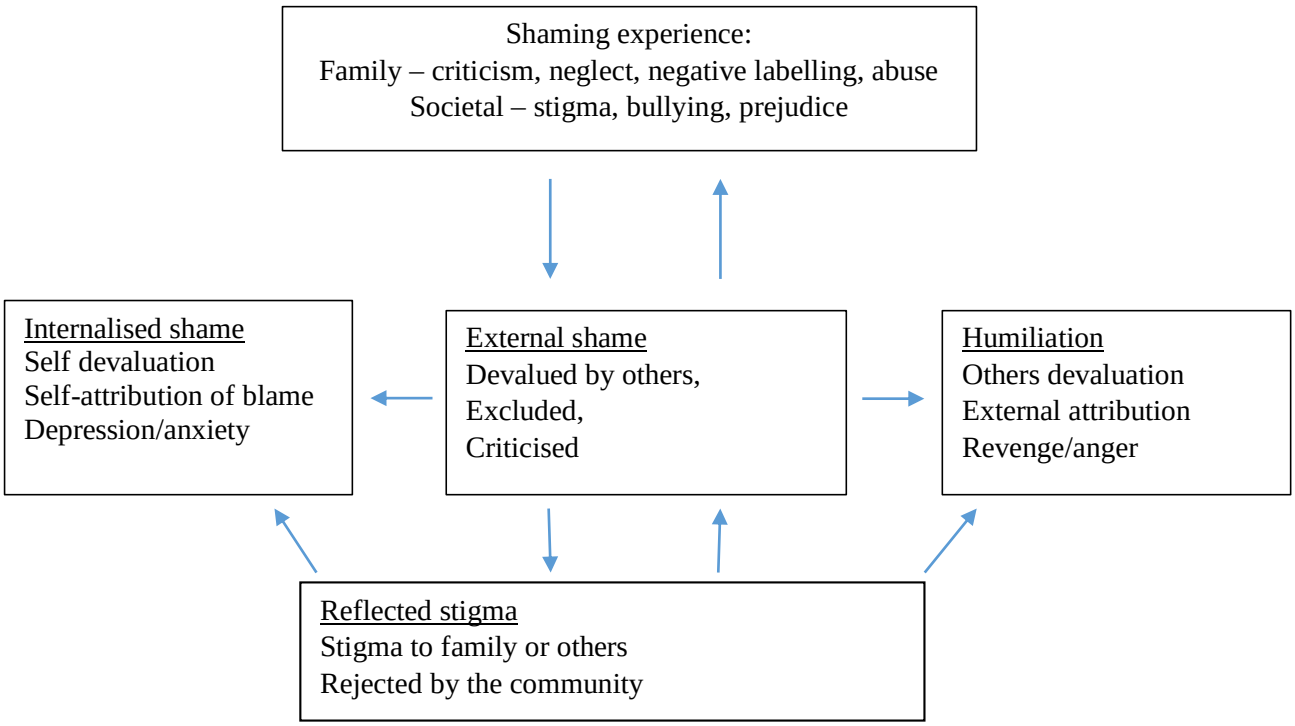


Fig 1. Gilbert (2000) model of shame

1.5 Shame and psychosis

The role of emotional dysfunction in psychosis has received increased attention in the past 25 years (Estroff, 1989, Birchwood et al, 2000, 2003; Michail & Birchwood, 2012). Of particular interest has been the high frequency of post psychotic depression (PPD) (Birchwood et al., 2000; Birchwood, Jackson, Brunet, Holden & Barton 2012), social anxiety disorder (SaD) (Birchwood et al, 2006; Michail & Birchwood, 2009; 2012) and trauma (Turner et al, 2013) within the population of people with a psychotic illness. Much of this literature has understandably emphasised the shaming impact of a psychotic illness on an individual and how this experience can result in high levels of enduring distress and limited life opportunity (Birchwood et al, 2006).

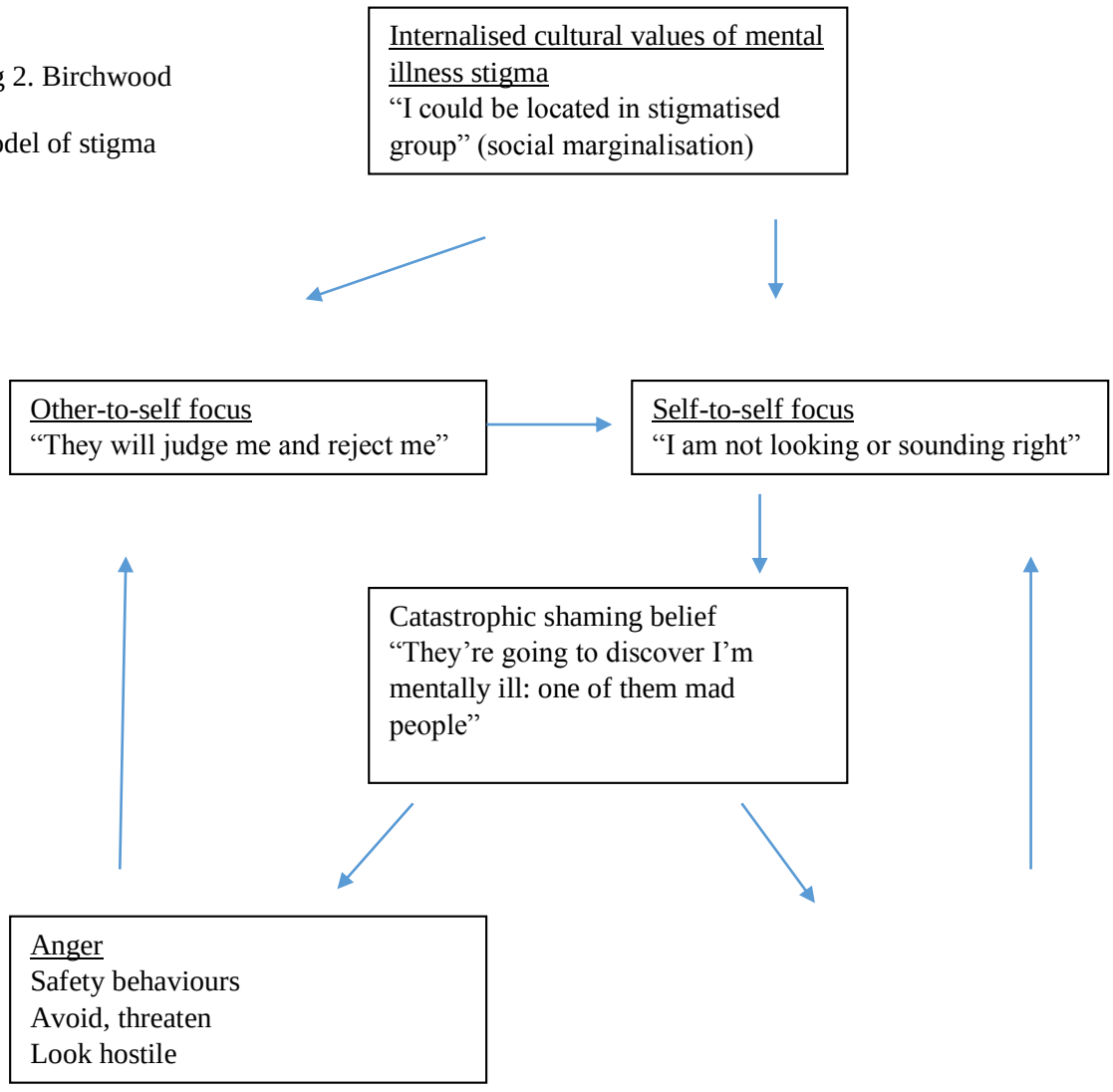
Psychosis has been conceptualised as an "I am" illness, instead of a "I have" illness e.g. "I am a psycho" as opposed to "I have cancer" (Estroff, 1989). This can turn a previously stable, known and relatively well esteemed self into an unfamiliar and devalued self. This self

may become more defined by their sickness, leading to marginalisation. Considering the well documented stigma associated with schizophrenia and psychosis (Crisp, 2000), the process of this turning into shame has been proposed.

1.5.1 Birchwood's Shame Model

Birchwood et al (2006) proposed a stigma model of social anxiety in schizophrenia that placed shame beliefs at the core of difficulty in adjusting to a psychotic illness. As seen in figure 2, awareness of social attitudes to mental health diagnoses may leave an individual vulnerable to believing they are now part of this unattractive social group. This leads to fears of negative judgement from others and a loss of social status. An awareness such as this can develop into an image of self that one may appear unusual to others, for example, "I feel tense". From this, catastrophic shaming beliefs develop about oneself. Due to the threat felt with such beliefs, safety strategies are adopted to prevent fears of exposure. These strategies act to perpetuate this cycle of catastrophic shame prone thinking and unhelpful safety behaviour.

Fig 2. Birchwood model of stigma



Shame may also play a role in the trajectory of recovery from psychosis. This may occur via related maladaptive defences resulting in non-adherence to medication or substance misuse (Miller & Mason, 2005).

Anxiety
Safety behaviours
Hiding, avoidance

It has been suggested that there is a need to investigate shame as a causal pathway to psychopathology and health outcomes (Mills, 2005). This is relevant to psychosis as its development is often conceptualised within a stress-vulnerability model where genetic disposition interacts with environmental stressors (Mueser & McGurk, 2004). It has been shown that psychosis is associated with developmental risk factors such as trauma, attachment and emotional difficulties (Michail & Birchwood, 2012; Read & Argyle, 1999; Janssen et al, 2004). These experiences have also been linked with predisposing individuals to feeling shame in later life (Lutwark & Ferrari, 1997). Shame has shown negative associations with secure attachment and positive associations with fearful and preoccupied attachment styles (Gross & Hansen, 2000). A moderating role for shame in the relationship between early adversity and current levels of paranoia will be reviewed in the text below (Matos et al., 2013).

1.6 Current Review

The focus of this review is to investigate what the current empirical literature tells us about the role of shame within psychosis and psychotic like experiences. This is a broad subject area that may benefit from asking more specific questions that may add weight to provide a more substantial answer. The questions in mind are; do we know if problematic levels of shame are present in people with psychosis or who have psychotic like experiences? Is shame a vulnerability marker for psychosis? Does shame occur as a result of having psychosis? How much research has been done to investigate this association between shame and psychosis? Are there different conceptualisations or factors of shame that have been linked with psychosis or will it be more generalised shame? Is there a relationship between shame and particular psychotic symptoms for example voices, paranoia and delusions?

The inclusion of research that does not include a clinical population may help with the understanding of how shame and psychosis are related. This is because the research literature

now evidences that some of the "symptoms" of psychosis may be much more prevalent in non-clinical population. This is consistent with the notion of psychosis mapped upon a continuum as mentioned previously (van Os et al., 2009).

2. Search for Studies

2.1 Strategy utilised in searching for appropriate studies

Several databases were used to search for papers meeting the inclusion criteria (Table 1) up to and including January 2014. These included: Medline (1508 studies) and Web of Science (369). Search terms used were; shame OR "self-criticism" OR "self-blame" OR "self-hatred" AND psychosis OR psychoses OR psychotic OR schizophren* OR paranoi* OR voice*. The search terms were used in the title, abstract, keywords and full text. Abstracts and titles were read and those that appeared to meet the inclusion criteria were accessed with the university's Shibboleth privileges; Figure 3 outlines the selection process. Reference sections of included papers were examined for applicable papers which may have been missed in the initial database search. Only papers that could be obtained in these ways were utilised. From this search, 22 papers were deemed appropriate to include in the current literature review.

Eligibility criteria for selection of papers in current review:
1. To be published in English language
2. To involve either participants with a diagnosis of a psychotic illness, or to include a measured construct of psychosis amongst a general population sample
3. Papers needed to include a measure of shame or include a measure that included a distinct factor of shame. If a measure has been referred to as shame in a number of studies, then it will be included even if it is not referred to as shame in a particular study
4. Papers must be peer reviewed or currently in press
5. Studies must have produced new quantitative data as part of their inquiry

Table 1. Eligibility criteria

Papers were excluded if they were non-empirical reviews. In addition, studies using solely qualitative methodology were not included. Books were not included in the review due to accessibility difficulties.

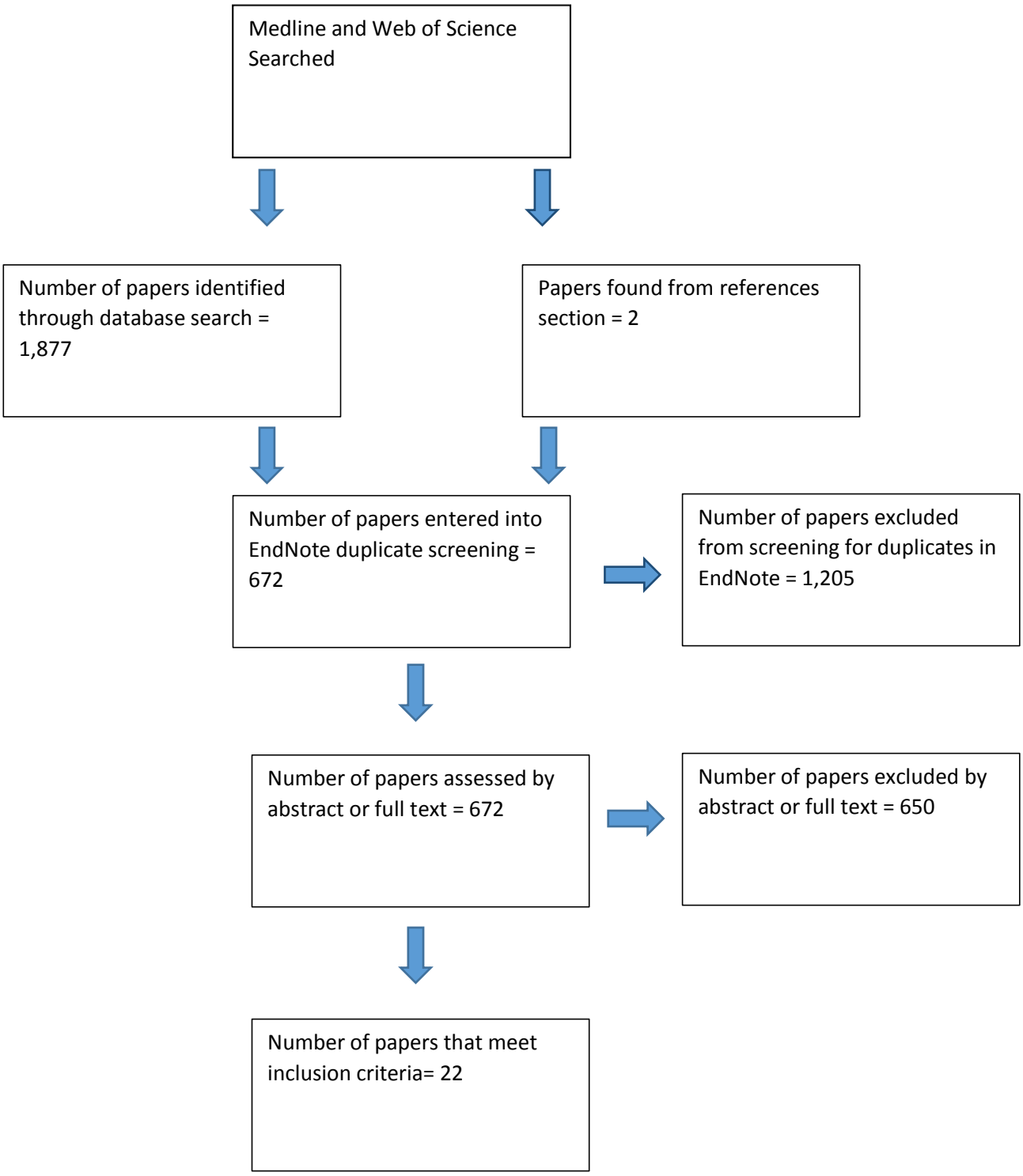


Fig 3. Flow chart of search for papers

3. Role of Shame in Psychosis

3.1 Quality of studies in review of the role of shame in psychosis

The quality criteria utilised is an adaption of that established by Thompson, Diamond, McWilliam, Snyder & Snyder (2005); a framework that evaluates the quality of evidence from correlational research designs. The original Thompson et al., (2005) criteria had four sections containing 18 items overall; Measurement; Practical and Clinical Significance; Avoiding Some Common Macro-analytical Mistakes; Confidence Intervals (CI's) for Reliability Coeffeciants, Statistics and Effect Sizes. After alteration, 11 items remained and the Measurement and Clinical and Practical Significance Headings were retained but some items within them were altered to be more pertinent to this review. Avoiding Some Common Macro-analytical Mistakes and CI's for Reliability Coeffeciants, Statistics and Effect Sizes were combined to make one new section; Data Anaylsis, and again the items within these were altered to use more relevant definitions. These criteria have been applied to each study in Table 2. In the current review 15 cross sectional/correlational studies were included of which ten used a clinical population and five a non-clinical sample. There were three studies that use a mixture of cross-sectional and a follow up deign. There were a further three intervention studies which were subject to the same quality criteria. Of the 16 studies that used a clinical population, all included participants from mental health services with a diagnosis of a psychotic illness. All but two of the studies used a mixed gender sample (Laithwaite et al., 2009; Mayhew & Gilbert, 2008).

3.2 Measurement

The overall reporting of the reliability of the main outcome measures was good. There was mild concern over the reporting of reliability coefficients on five papers (Rooke & Birchwood, 1998; Birchwood et al., 2000; Gumley et al., 2004; Gumley et al., 2006; Braehler

et al, 2009) reflecting their failure to report the Cronbach alpha and test re-test reliability of the main outcome measures. There were seven papers in which bespoke measures or behavioural observations were utilised and of these, six were found to have been well validated. There was mild concern in one study due to how this was justified in the text (Braehler et al., 2012). The reliability of the bespoke measures was provided in six of the studies but were absent in one study leading to significant concern (Braehler et al., 2012). Accordingly, there was significant concern regarding the measurement of constructs in this study.

3.3 Data analysis

Most papers appeared to use appropriate statistical analysis to test their hypothesis. However, there were four papers where the statistical methods were not clearly justified (Matos et al., 2012, Pinto-Gouveia, 2014, Laithwaite et al., 2009; Braehler et al., 2012). Three studies may have used univariate methods upon inherently multivariate data sets. This is of concern as univariate analysis may overemphasise simple effects in the presence of significant mediation and/or moderation by other important variables, (Matos et al., 2013; Suslow et al., 2003; Braehler et al., 2012).

There are two studies that do not provide satisfactory evidence that their data met the assumptions underlying the statistical methods which were subsequently used (Suslow et al., 2004; Hutton et al., 2013). This led to those studies being labelled as mildly concerning. Although P values were reported in all papers; in two studies, no standard deviations of confidence intervals were mentioned (Connor & Birchwood, 2011; Braehler et al., 2012). This is of some concern as without measures of dispersion it is not possible to interpret measures of central tendency and it will also mean that this data could not be independently reanalysed at a later stage.

3.4 Practical and Clinical Significance

Of the 22 studies, seven had concerns over the sample used. Of these, four used a non-clinical population (i.e. student or convenience sample) to measure psychotic phenomenon and were rated to be of mild concern (Pinto-Gouveia et al.,2013; Pinto-Gouveia et al., 2012; Matos et al., 2012; Mill et al., 2007). One study used a help seeking population, some of whom may transition into psychosis but were rated as below a clinically significant threshold at the time of the study (Johnson et al., in press). In one study the number of people included with a psychotic diagnosis was deemed to be low in numbers (Hutton et al., 2013).

Concerns were raised over the sample group in a case series report due to all three people involved being white British males (Mayhew & Gilbert, 2008).

Along with a diagnosis of psychosis, there appeared to be a high proportion of comorbid diagnoses in one study, including anti-social personality disorder. In addition, only males were included in this study as it was based at an all-male forensic setting (Laithwaite et al., 2009). Due to this being a relatively new area of research, there has not been a lot of comparison between the effect sizes within these studies. The link with previous research appears not to be made in any substantive or numerical way however, conceptual similarities have been noted in the papers (e.g. Michail & Birchwood, 2012; Birchwood et al., 2004).

It was not clear in two studies that the limitations of the study design and sample sizes were considered when interpreting effect sizes (Suslow et al., 2003; Braehler et al, 2012).

3.5 Summary of Quality

The review of the quality of the research has highlighted that most studies appear to be of a satisfactory standard in relation to a correlational framework. The main concerns compromised of: utilisation of a non-clinical population; the absence of reliability score, methodological limitations and the lack of justification for the choice of univariate statistical techniques used.

Population	Clinical population									
Design	**Correlational Designs**									
Author	Suslow, Roestal, Ohrmann & Arolt	Birchwood, Gilbert, Gilbert, Trower, Meaden, Hay, Murray & Miles	Gumley, O'Grady, Power & Schwannauer	Birchwood, Trower, Brunet, Gilbert, Iqbal & Jackson	Karatzias, Gumley, Power & O'Grady	Connor & Birchwood	Michail & Birchwood	Connor & Birchwood	Hutton, Kelly, Lowens, Taylor & Tai	Turner, Bernard, Birchwood, Jackson & Jones
Year	2003	2004	2004	2006	2007	2011	2012	2013	2013	2013
Measurement										
1. Appropriate reliability coefficients are reported for all standardised peer reviewed measures										
2. An explicit justification for the validity of behavioural observations or bespoke measures is provided. This justification can be based on a logical rationale or use in previous peer reviewed studies.	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	
3. If bespoke measures are used then reliability is empirically evaluated based on data generated within the study.	n/a		n/a	n/a	n/a	n/a	n/a	n/a	n/a	
4. In situations where there is caution regarding score reliability and validity, the study explicitly considers this issue in reasonable detail when interpreting the data generated within the study.										
Data Analysis										
1. Appropriate statistical methods was used to test the hypotheses										
2. Univariate methods are not used in the presence of multiple outcome variables.										
3. Evidence is provided that the assumptions of statistical methods are sufficiently well-met for results to be deemed credible.										
4. Confidence intervals or measures of variance are reported for the statistics (e.g., means, correlation coefficients) of primary interest in the study.										
Practical and Clinical Significance										
1. Were the participants in the study representative of the entire population from which they were recruited?										
2. Authors interpret study effect sizes for each primary outcome directly and explicitly comparing study effects with those reported in related prior studies.						n/a				
3. Authors explicitly consider study design and effect size statistic limitations as part of effect interpretation.										

Table 2. Quality of papers included in study

Table 3. Key findings

Study	**Participants**	**Aim**	**Questionnaire(s) for measuring shame**	**Key result**
Rooke & Birchwood (1998)	49 individuals with schizophrenia diagnosis	Investigate the link between post-psychotic depression and the appraisals of loss, humiliation and entrapment associated with psychosis	Personal Beliefs about Illness Questionnaire (PBIQ)	Perceived loss of autonomy & social role, especially employment were associated with depression. No association with shame was found. Entrapment also predicted depression.
Birchwood, Iqbal, Chadwick & Trower (2000)	105 people with a diagnosis of schizophrenia	To explore if patients have more negative appraisals of psychosis prior to onset of post-psychotic depression.	Personal Beliefs about Illness Questionnaire (PBIQ)	Prior to post-psychotic depression patients felt higher loss, humiliation & entrapment than those who did not become depressed. After depression they experienced greater insight, lower self-esteem & worsening of their appraisal of psychosis.
Birchwood, Gilbert, Gilbert, Trower, Meaden, Hay, Murray & Miles (2004)	125 participants from Assertive Outreach teams with a diagnosis of schizophrenia or related disorder. Must have been voice hearer for two years	To explore voice hearers relationship with their dominant voice, to test out hypothesised model that social rank & social power lead to appraisal of voice power, distress & depression	Beliefs About Voice Questionnaire (BAVQ)	Voices shown to mirror external social relationships. Content of voices can reflect an individual's perception of powerlessness & being controlled by others

Study	Participants	Aim	Questionnaire(s) for measuring shame	Key result
Suslow, Roestal, Ohrmann & Arolt (2004)	30 patients diagnosed with schizophrenia & flat effect, 30 patients with diagnosis of schizophrenia & anhedonia & 28 patients with diagnosis of schizophrenia but without flat affect or anhedonia. 30 healthy controls	To examine the frequency of basic emotions in everyday life in addition to emotional control in different groups of individuals with a schizophrenic label	Differential Emotions Scale (DES)	All patient groups felt fear and disgust more than controls. Anhedonic patients had higher sadness, shame and guilt scores than healthy controls. Extrapyramidal symptoms were negatively correlated with shame.
Gumley, O'Grady, Power & Schwannauer (2004)	Two groups of participants with (19) & without (19)	Investigate if socially anxious group perceive more loss, entrapment, shame & humiliation, blame themselves more & have lower self-esteem than non-socially anxious group	Personal Beliefs About Illness Questionnaire (PBIQ)	No difference in positive or negative symptoms found. Socially anxious group reported higher levels of self-blame, entrapment, shame & lower self-esteem. Higher scores for entrapment, shame & self-esteem remained after controlling for depression.
Birchwood, Trower, Brunet, Gilbert, Iqbal & Jackson (2006)	79 from an inner city mental health service with diagnosis of schizophrenia or related disorder. Group of socially anxious (23) & no social anxiety (56)	Testing out of one pathway to social anxiety following psychosis based on social rank that predicts this is related to anticipation of catastrophic loss of social status due to stigma of schizophrenia	Personal Beliefs about Illness Questionnaire (PBIQ); Other as Shamer Scale (OAS)	Individuals with social anxiety appraised their psychosis as more shaming & placed them apart from others. Stigma model proposed, how stigma transcends into social anxiety.

Study	Participants	Aim	Questionnaire(s) for measuring shame	Key result
Karatzias, Gumley, Power & O'Grady (2007)	138 individuals diagnosed with schizophrenia. 62 of sample had a comorbid or affective disorder	Examined whether greater negative beliefs about psychosis & lower self-esteem is associated with anxiety disorders	Personal Beliefs About Illness Questionnaire (PBIQ)	Anxiety group had significantly more shame associated with psychosis than non-anxious group. Shame not a predictor of anxiety in regression, but entrapment was.
Connor & Birchwood (2012)	74 clients with a diagnosis of schizophrenia or a related disorder with auditory hallucinations	To explore whether abuse & dysfunctional parental affiliation in childhood are linked to voice appraisals of power & perceived expressed emotion, shame cognitions, depression & suicidality	Other as Shamer Scale (OAS); Self-attacking & Self-reassuring Scale (SASRS)	Emotional abuse associated with greater voice power. Rejection from father & emotional abuse strongest predictors of internal & external shame.
Michail & Birchwood (2012)	80 patients with a first episode of psychosis. 20 of these were socially anxious, 60 were not. Healthy control group with 24 also included	Explore association between shame cognitions from psychotic illness & perceived loss of social status, in those with social anxiety & psychosis	Other as Shamer Scale (OAS)	External shame & PBIQ shame associated with psychosis were elevated in socially anxious group compared to those without.
Birchwood, Jackson, Brunet, Holden & Barton (2012)	150 participants from an early intervention in psychosis service, 66 of these were part of a CBT trial	To further develop the Personal Beliefs about Illness Questionnaire, that is based on social rank theory & consists of several main constructs	Personal Beliefs About Illness Questionnaire-Revised (PBIQ-R)	Shame component was significantly correlated with social comparison scale. Changes in the shame scale was correlated with changes in depression over a 6 month period.

Study	Participants	Aim	Questionnaire(s) for measuring shame	Key result
Turner, Bernard, Birchwood, Jackson & Jones (2013)	50 participants with a diagnosis of a psychotic disorder	Examine role of different types of shame to post-psychotic trauma, whilst controlling for depression	Internal Shame Scale (ISS) Other as Shamer Scale (OAS) The Experience of Shame Scale (ESS)	External shame & post-psychotic trauma related after controlling for depression & general shame. Internal shame shown to have a stronger link to depression.
Connor & Birchwood (2013)	74 voice hearers with diagnosis of schizophrenia of related diagnosis	Examine self-critical thinking and self-reassuring & whether these are associated with theme of voice content & appraisal of voice power & voice expressed emotion	Other as Shamer Scale (OAS); Function of self-criticism scale (FSCS); Forms of self-criticising scale (FSCRS)	Common themes of voices were shame, control & affiliation. Shaming theme linked with reduced ability to self-reassure. Self-critical thoughts were associated a more powerful voice & higher in expressed emotion.
Hutton, Kelly, Lowens, Taylor & Tai (2013)	Three groups identified; persecutory delusions with psychosis (15), depressed group (15) & healthy controls (19)	Explore whether reduced self-reassurance & elevated self-criticism is associated with clinical paranoia	Function of self-criticism scale (FSCS); Forms of self-criticising scale (FSCRS)	Persecutory delusions group had more self-hate & less self-reassurance than healthy controls, but no difference with depressed group was noticed.
Mills, Gilbert, Bellew, McEwan & Gale (2007)	131 undergraduate students	Investigated self-criticism & self-compassion in regard to paranoid beliefs	Function of self-criticism scale (FSCS); Forms of self-criticising scale (FSCRS)	Paranoid beliefs associated with self-hating & self-persecution & negatively correlated with self-reassuring. Self-hating relation to paranoia remained after controlling for depression.

Study	Participants	Aim	Questionnaire(s) for measuring shame	Key result
Matos, Pinto-Gouveia & Gilbert (2013)	328 participants from a general community sample	Explored whether shame and shame memories have different associations with paranoia and social anxiety	Other as Shamer Scale (OAS); Experience of Shame Scale (ESS); Impact of Events Scale-Revised (IES-R); Centrality of Events Scale (CES)	Found that paranoia is linked with centrality & traumatic impact of shame memories, in addition to external shame. Internal shame shown to be associated with social anxiety
Pinto-Gouveia, Matos, Castilho & Xavier (2012)	255 subjects from a general community sample	To investigate how emotional memories, shame & submissive behaviour in adulthood are differently related to depression & paranoia	Other as Shamer Scale (OAS); Internalised Shame Scale(ISS); Impact of Events Scale-Revised (IES-R)	Emotional memories, external, internal shame & submissive behaviour are related to paranoia. Early threat memories predicted paranoia through external shame.
Pinto-Gouveia, Castilho, Matos & Xavier (2013)	204 subjects from a general community sample	Explore if self-criticism mediated relationship centrality of shame memories & depressive symptoms and between centrality of shame memories & paranoid beliefs	Function of self-criticism scale (FSCS); Forms of self-criticising scale (FSCRS); Centrality of Events Scale (CES)	Self-criticism correlated with paranoia but did not mediate the relationship between centrality of shame memories and paranoia
Johnson, Jones, Wood & Jackson (in press)	60 participants, consisting of young people with mental health difficulties at high risk for developing psychosis	Explored the role of shame as a predictor & moderator in the relationship between life stress & paranoia.	Experience of Shame Scale (ESS)	Shame amplified the impact of life stress of paranoia for individuals who scored high on shame measure. Low & moderate levels of shame act as buffer to this relationship

Study	Participants	Aim	Questionnaire(s) for measuring shame	Key result
Mayhew & Gilbert (2008)	3 males with a diagnosis of schizophrenia from a community mental health team	Case series exploring the understanding, acceptance & value of compassionate mind training	Belief About Voices Questionnaire (BAVQ); Function of self-criticism scale (FSCS); Forms of self-criticising scale (FSCRS); Centrality of Events Scale (CES)	All 3 participants showed reduced depression, psychoticism, anxiety, paranoia, OCD & interpersonal sensitivity. Auditory hallucinations also became less malevolent & persecutory but more reassuring
Gumley, Karatzias, Power, McKay & O'Grady (2006)	144 with schizophrenia or related disorder. CBT group (72) or TAU group (72)	Examined hypothesis that patients who relapse will have greater negative beliefs about psychosis & that CBT would reduce negative beliefs about psychosis & improve self-esteem	Personal Beliefs About Illness Questionnaire (PBIQ)	Patients who relapse scored greater on entrapment in relation to their illness on PBIQ. Patients in CBT trial showed greater improvements in loss and self-esteem. No improvement for shame was noticed
Laithwaite, O'Hanlon, Collins, Doyle, Abraham & Porter (2009)	19 male participants, of whom 18 completed the programme, residing in a high secure setting	Evaluate the effectiveness of recovery group based on Compassionate Mind Training, in particular to improve depression, self-compassion & promote help seeking	Other as Shamer Scale (OAS)	Significant improvements noticed in self-esteem, external shame, social comparison scores, Beck depression scores and general psychopathology

Study	Participants	Aim	Questionnaire(s) for measuring shame	Key result
Braehler, Gumley, Harper, Wallace, Norrie & Gilbert (2012)	40 patients with a schizophrenia-spectrum disorder. Participants randomised to 2 groups; compassion focused therapy & TAU	Feasibility study to explore the safety, acceptability, potential benefits & improvements utilising group compassion focused therapy	Personal Beliefs About Illness Questionnaire (PBIQ)	Low attrition rates (18%), greater observed clinical improvements, significant increase in compassion. Shame as measured by PBIQ significantly negatively correlated to changes in compassion, but not depression

3.6 How has shame been conceptualised within the empirical literature on psychosis?

Shame has been traditionally measured as a global trait (Lemming & Boyle, 2004). However as its link with psychopathology has become better understood (Mills, 2005), it has been conceptualised in relation to particular facets of an individual or an individual's response to a certain context (Lemming & Boyle, 2004). Within the context of a psychosis and psychotic type experiences, a number of ways of conceptualising and measuring shame were identified.

3.6.1 Shame related to a psychotic illness

Social rank theory (Gilbert, 2000) has been central to the most prevalent shame measures used within psychotic groups (Birchwood et al., 2006; Turner et al., 2013; Birchwood et al., 2000). Two initial studies focused on shame associated with the experience of a psychotic illness and the humiliation involved in this highly stigmatised event (Rooke & Birchwood, 1998; Birchwood et al., 2000). This developed due to the high proportion of people with psychosis reporting emotional dysfunction symptoms; namely social anxiety (Birchwood et al., 2006) and post psychotic depression (Birchwood et al., 2000). The Personal Beliefs about Illness Questionnaire (PBIQ) was developed in order to assess shame based appraisals (alongside others such as entrapment, social isolation) associated with psychosis (Birchwood, Mason, MacMillan & Healy, 1993). The shame scale assesses elements of stigma (e.g., 'my illness is a judgement on me'), general shame (e.g., 'I am ashamed about my illness') and external shame (e.g., 'others look down on me because of my illness').

The inclusion of different shame appraisals reflects the literature on shame as conceptualisations of shame have placed emphasis on different aspects of shame such as shame-proneness, internal shame, and external shame (Lemming & Boyle, 2004; Gilbert, 1998). In the list of studies reviewed here nine include the shame subscale PBIQ as their primary measure of shame (Rooke & Birchwood, 1998; Birchwood, Iqbal, Chadwick & Trower, 2000; Gumley, O'Grady, Power & Schwannauer, 2004; Birchwood et al., 2006; Gumley et al., 2006; Karatzias, Gumley, Power & O'Grady, 2007; Michail & Birchwood, 2012; Birchwood et al., 2012; Braehler et al., 2012). Based on findings from the PBIQ, a model has been proposed whereby individuals have internalised social stigmas regarding people with psychosis - they are perceived as being unattractive, defective and potentially dangerous (Birchwood et al., 2006). (See Figure 2 for a copy of this model). Despite this,

there has not been an emphasis in the literature to fully uncover what feelings of shame is related to in particular. For example, anecdotal assumptions about weight gain due to medication, yet these have not been fully empirically measured (Miller & Mason, 2005). Qualitative research exists where the experiences of people with psychosis are being explored more (Loughbran, 2011). The theme of shame is one that has appeared in this context and in particular around issues such as the embarrassment at being "crazy", letting loved ones down by failing one's own standards, an awareness of people treating you differently due to psychosis. Overall, it appears that the body of evidence that investigated shame as a result of experiencing psychosis is of good quality and has reliably shown that feeling ashamed is a common feature of being given this diagnosis.

3.6.2 Internal and external shame

Gilbert (2000) proposed a model of shame (see figure 1) based on social rank theory that distinguishes between internal shame, typified by holding negative self-critical beliefs, and external shame, where an individual believes others think critically and negatively of them. Goss, Gilbert & Allen (1994) were the first to explicitly measure these two constructs highlighting that shame involves both appraisals of self and others but shame was often only assessed as a self-evaluation. Of the studies reviewed, three measured just external shame (Laithwaite et al., 2009; Birchwood et al., 2006; Michail & Birchwood, 2012); four measured just internal shame (Mills et al., 2007; Hutton et al., 2007; Mayhew & Gilbert, 2008; Pino-Gouveia et al., 2013) and five measured both internal and external shame (Connor & Birchwood, 2012; Pino-Gouveia et al., 2012; Connor & Birchwood, 2013; Turner et al., 2013; Matos et al., 2013). However, these studies measured internal shame in different ways (see below).

A further development has seen internal and external shame specifically associated with psychosis being measured (Turner et al., 2013). The measurement of the high correlation between internal and external shame has received some attention in the literature (Goss et al., 1994). This may lead to conclusions that these two constructs are not being measured distinctly enough within the research to date as correlations of up to .81 have been found (Goss et al., 1994). This concern has been caveated though as it has been acknowledged that high correlations between the two types of shame are expected due to both types of shame emerging from the same process but at different stages so that evaluation by self and by

others will be highly linked (Gilbert 2002). Furthermore, although usually highly correlated, it has been shown that these two types of shame have different consequences. It has been found that external shame is linked to paranoia and post-psychotic trauma whereas internal shame has stronger associations with post-psychotic depression and social anxiety in a general population sample (Turner et al., 2013; Matos et al., 2013).

Another measurement issue surrounding internal shame was also apparent in the literature. It was found that three different types of questionnaires have been used to measure this; the Internalised Shame Scale (ISS; Cook, 1994); the Experience of Shame Scale (ESS; Andrews et al., 2002) and the Function of Self-criticism and Self-reassuring Scale (FSCSR; Gilbert et al., 2004). Within these scales, self-criticism and self-hatred are highly related to shame but self-reassurance is not. The ESS looks at; characterlogical, e.g. "have you felt ashamed of the sort of person you are?", behaviour, e.g. "have you worried about what other people think of your manner with others?" and body shame, e.g. "have you felt ashamed of your body or any part of it?" However, within each category they mix external and internal shame items without distinguishing between these.

Turner & colleagues (2013) found that the ESS correlated more with the Other as Shamer Scale (OAS; Goss et al., 1994). It is unclear to date which of these questionnaires captures greater conceptual fidelity to internal shame as defined by Gilbert (2002). Clarifying this issue could be considered in future research if proposed models are to be endorsed with better confidence. Conversely, it appears that the OAS is widely utilised as a questionnaire of external shame with all references to this type of shame in this review measured by it.

It appears that the quality of research of internal shame amongst people with psychosis may be affected by inconsistent measurement of this concept. The quality of research of external shame has been of higher quality, as it has been measured by the same questionnaire. Some of the research in this area has used people without psychosis, which again reduces the application of the findings to individuals with a clinically diagnosed psychosis. However, it does provide a good base for future research of internal and external shame amongst people with psychosis.

3.6.3 Developmental shaming events

Three studies include measures that assess developmental shaming memories (Pinto-Gouveia et al., 2012; Pinto-Gouveia et al., 2013; Matos et al., 2013). Matos & colleagues (2013) have highlighted the importance of difficult developmental experiences in

contributing towards trait shame vulnerability in a non-clinical sample. It was found that developmental shame memories function similarly to trauma memories and are associated with hyperarousal, intrusions and avoidance. The distressing trauma-like impact of these shame memories have been measured by the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997) (Pinto-Gouveia et al., 2013). In addition, memories of shameful events have been found to function similarly to autobiographical memories that are integral in defining an individual's identity (Conway, Mears & Stanart, 2004).

Such events may represent a turning point in the person's life and have been associated with a vulnerability towards psychopathology (Matos et al., 2013). Matos et al., (2013) assessed the degree to which an individual feels defined by prior shaming events and has this has been measured by the Centrality of Events Scale (CES; Bernstein & Rubin, 2006). Both measures have been adapted to refer to shaming memories from the past and linked to current paranoid anxiety. This correlation with paranoia remained even after internal and external shame was controlled for. However, to date they have only been used within non clinical samples (Matos et al., 2013). In Matos' paper, childhood adversity appears to refer to centrality of shaming memories and their traumatic impact but no actual measure of childhood adversity was included.

Developmental shame memories is an interesting area of further research but with no research to date including people with psychosis, then the quality of research is limited in its application.

3.7 The levels of shame amongst people with psychosis

This question is important when considering if shame is a particularly important factor in psychosis or if the studies here are measuring a variable that is transdiagnostic across samples. As seen above, a key paper in conceptualising schizophrenia as a stigmatising and shaming illness was Estroff (1989). More specifically, the levels of shame amongst people with a psychotic illness appears to be conditional on the types of shame being referred to and the group being compared to (Michail & Birchwood, 2012; Matos et al, 2013). Additionally, there may be people with psychosis who are not shame prone compared to other psychotic individuals who are (Birchwood et al., 2000).

3.7.1 Shame compared to general population

Two studies compared the mean shame scores from a sample of people with psychosis to that of a general population (Hutton et al., 2013; Turner et al., 2013). One study found shame, as measured by the Experience of Shame scale (ESS), to be higher amongst people with psychosis (M = 54.96; Turner et al, 2013) than a mean from a normal population (M =48.94; Matos & Pinto-Gouveia, 2010). In addition, internal and external shame was also significantly higher in a psychosis sample than internal and external shame in a control sample (Turner et al., 2013). Similarly, internal shame as measured by the FSCSR (Gilbert et al., 2004) was found to be higher in people with persecutory delusions compared with a healthy group (Hutton et al., 2013). This is a difficult area to research due to shame often being measured in relation to a psychotic illness. However, there is evidence that that higher levels of general shame is reported amongst people with psychosis. This evidence has not been widely investigated and therefore not replicated.

3.7.2 Shame in different groups with psychosis

Five papers studied differences in levels of shame between sub-groups of people with a psychotic illness (Suslow et al., 2003; Birchwood et al., 2006; Karatzias et al., 2007; Connor & Birchwood, 2012; Michail & Birchwood, 2012). It was found that individuals with clinically significant levels of anxiety in addition to psychosis experienced significantly higher amounts of shame regarding their illness on the PBIQ than people with psychosis and non-clinical levels of anxiety (Karatzias et al., 2007). Individuals with a psychosis and social anxiety (SaD) have higher levels of shame on the PBIQ than those with a psychosis and no SaD (Michail & Birchwood, 2012). The shame related to psychosis is suggested to be related to heightened fears of exposure of their mental illness (Michail & Birchwood, 2012). A helpful finding is that shame in relation to having a psychotic illness does not appear to be associated with an individual's insight into the illness (Birchwood et al., 2012).

The differing levels of shame seen in people with psychosis may be linked to their developmental experiences. Connor & Birchwood (2012) found that external shame as measured by the OAS (Goss et al, 1994) in voice hearers was linked to emotional and physical abuse as well as rejection from mother and father. They found that internal shame as measured by hated self on the FSCSR (Gilbert et al., 2004) was significantly related to emotional abuse in addition to rejection from mother and father.

Suslow & colleagues (2003) found that participants with clinically significant anhedonic symptoms experienced significantly more shame than healthy controls. They explained this by drawing parallels with Meehl's (1962) model of anhedonia that suggests that there is an imbalance between the appetitive and aversive brain centres that then leads to more experiences of aversive and negative emotion. However, this paper does not consider if shaming experiences have contributed to some of the anhedonic "symptoms", such as withdrawal from others and therefore should be interpreted with caution.

It is unclear if other demographics differentiate the level of shame in groups within people with a psychotic illness. Birchwood et al (2006) highlighted that ethnic minorities reported significantly lower levels of SaD than White British respondents (17% versus 39%). They associated this with either reduced stigma in these communities or even a heightened stigma and so an underreporting of distress.

The evidence that suggests higher levels of social anxiety and anxiety is linked with higher shame in individuals with psychosis, appears to be of good quality. Linking different levels of shame to development experiences is at an early stage of understanding, however the one paper that shows this is of good quality. The -correlation between shame and anhedonia is interesting but the quality of the conclusions drawn from this research paper appears low.

3.7.3 Shame in people with psychosis compared to other mental health difficulties

Two studies made comparisons between psychosis groups and groups with other mental illnesses (Michail & Birchwood; Hutton et al., 2013). It was found that people with psychosis and no Social Anxiety Disorder (SaD) have lower levels of external shame than people with SaD and no psychosis (Michail & Birchwood, 2012). In people who have SaD and not psychosis compared to individuals with psychosis and SaD, levels of shame do not appear to differ (Michail & Birchwood, 2012). This is an interesting finding as it suggests that social anxiety is central to shame.

Furthermore, Michail & Birchwood (2012) found that there was no difference in psychotic symptoms between people with psychosis and SaD compared to those with psychosis and no SaD. Compared to a group of clinically depressed people, it was found that internal shame, as measured by the Forms of self-criticising and Self-reassuring scale

(FSCRS; Gilbert et al, 2004), was not significantly different in a psychosis sample (Hutton et al., 2013). However, both groups reported significantly more internal shame than healthy controls. Interestingly, both groups also disclosed less self-reassurance than healthy controls. The persecutory delusions group had similar amounts of depression as the depressed group, meaning that similarities in shame may be explained by depression as opposed to psychosis.

From these findings, there is good quality research to suggest that a diagnosis of psychosis does not automatically equate to experiences of shame. However, for a significant number of people shame is present and linked to emotional dysfunctional (Birchwood et al., 2000; Michail & Birchwood, 2012). In addition, an association has been observed between current levels of shame and levels of hearing malevolent voices (Connor & Birchwood, 2012). Difficult attachment experiences may also increase an individual's vulnerability to this outcome (Connor & Birchwood, 2013). These relationships will be considered further in the review.

3.8 Is there a link between shame and emotional dysfunction in psychosis?

As previously mentioned, it appears that investigations into emotional dysfunction such as SaD and post-psychotic depression have been key to identifying the central role of shame and humiliation in psychosis (Rooke & Birchwood, 1998; Birchwood et al., 2000; Birchwood et al., 2006). The relationship between shame and different types of post-psychotic emotional dysfunction will now be explored.

3.8.1 Shame and post-psychotic depression

Of the studies reviewed, six investigated links between shame and depression (Rooke & Birchwood, 1998; Birchwood et al., 2000; Birchwood et al., 2012; Connor & Birchwood, 2013; Pinto-Gouveia et al., 2013; Tuner et al., 2013). The relationship between shame and depression was initially not found (Rooke & Birchwood, 1998). As mentioned above, links between shame and post-psychotic depression were first observed by Birchwood and colleagues (2000). They found high rates of depression amongst people with psychosis even after acute symptoms had resolved. There is also more recent evidence that shame in relation to having a psychosis is associated with post-psychotic depression and that changes in depression are also correlated with changes in shame (Birchwood et al., 2012). Generalised external and internal shame (i.e. not explicitly linked to a psychosis), appears to be associated with depression in psychosis (Connor & Birchwood, 2013) as measured by the Calgary Depression Scale (Addington, Addington & Schissel, 1990).

Turner & colleagues (2013) found internal shame associated with psychosis to be most highly related to depression. This pattern is consistent with models that suggest internal shame is linked to higher self-criticism and hated-self beliefs, contributing towards the development and maintenance of depression (Gilbert, 2002).

The quality of research linking shame and depression amongst people with psychosis appears good and it has also been replicated several times. However, one study (Rooke & Birchwood, 1998), does not support this link.

3.8.2 Shame and social anxiety

Four studies investigated the relationship between shame and social anxiety (Gumley et al., 2004; Birchwood et al., 2006; Karatzias et al., 2007; Michail & Birchwood, 2012). An initial study showed that shame associated with psychosis as measured by the PBIQ was associated with social anxiety (Gumley et al., 2004). Furthermore, shame in relation to a psychotic illness was a greater predictor of social anxiety than external shame but both remained significant independent predictors (Birchwood et al., 2006). Individuals with psychosis and SaD reported higher levels of generalised external shame and shame in relation to their illness compared to those with psychosis but without SaD (Michail & Birchwood et al., 2012). These findings add support to Birchwood & colleagues (2006) stigma model which suggests why shame and social anxiety are so inter-linked. This may also indicate that these individuals are higher in trait shame due to adverse childhood experiences (Freeman et al., 2008). In addition, it was found that people with a psychotic illness and a comorbid affective illness report higher levels of shame in relation to their psychotic illness than those without a comorbid diagnosis (Karatzias et al., 2007).

There appears to be good quality evidence that strongly suggests that social anxiety and shame are highly related in people with a psychosis. This makes sense due to shame being a socially focused emotional process.

3.8.3 Shame and Post-Psychotic Trauma

Only one study has investigated links between shame and post-psychotic trauma. Post-psychotic trauma occurred in 33% of people (Turner et al., 2013). Post-psychotic

trauma was correlated with general shame and both internal and external shame associated with psychosis. However, regression analysis found that external shame in relation to an individual's psychotic illness and also their general sense of shame measured by the ESS (but not internal shame) had an independent association with post psychotic trauma (Turner et al., 2013). These results remained significant even when controlling for depression. This is consistent with previous research that shows a link between shame and Post Traumatic Stress Disorder (Harman & Lee, 2010). The findings suggest that perceiving yourself to exist negatively in the minds of others because of having psychosis may have trauma related characteristics to it, for example flashbacks, hyperarousal and avoidance.

Although there is only one study looking at shame and post-psychotic trauma, it is of good quality and may be clinically significant when considering appropriate psychological interventions for people with psychosis.

3.9 The relationship between shame and psychotic symptoms

This question highlights the importance of considering psychotic symptoms on a spectrum that may be measured amongst non-psychotic individuals (van Os et al, 2009). For example, paranoid thinking has been conceptualised as something that exists amongst a significant proportion of the general population without a psychotic illness (Freeman, 2005). Shame has been linked with paranoia (Matos et al., 2013; Hutton et al., 2013) and voice hearing (Connor & Birchwood, 2012).

3.9.1 Shame and hearing voices

Two studies investigated shame voice hearing (Connor & Birchwood, 2013; Birchwood et al., 2004). Those who experience external social relationships as shaming, report higher frequency of shame content in their malevolent voices and experience higher distress from this (Connor & Birchwood, 2013). It was found within the same study that 35% of voices content were reported to be shaming in nature. Also, it appears that reduced external shame is associated with a higher perception of affiliation with voices (Connor & Birchwood, 2013). Birchwood & colleagues (2004) reported that if one perceives voices as powerful then they were also perceived to have greater shame content and more omniscience as measured by the Beliefs About Voices Questionnaire (BAVQ; Chadwick & Birchwood, 1994), however they did not publish the strength of effect size with this finding.

In addition, Connor & Birchwood (2013) found higher voice power was associated with more self-critical thoughts and self-hatred and inadequacy, components of internal shame. It was speculated that voices have access to private shameful information that means an individual may be prone to feeling their voices as harmful and omnipotent (Birchwood et al., 2004). From a clinical view point Birchwood and colleagues (2004) highlighted the potential embarrassment that a service user may feel when disclosing the content of what voices are saying as a result. The ability to self-reassure was associated with determining what these voices say and may offer a form of resilience (Connor & Birchwood, 2013).

These findings do suggest a potentially multi-factorial role for shame amongst people with psychosis. More research is required is analyse this link more robustly to make it more clinically useful.

3.9.2 Shame and paranoia

Six studies using non-clinical and clinical groups have investigated shame and paranoia. Four studies (Matos et al., 2013; Pinto-Gouveia et al., 2013; Pinto-Gouveia et al., 2012; Mills et al., 2007) involved community samples.

Three studies found that external shame was associated with paranoid beliefs within a non-clinical population (Pinto-Gouveia et al., 2012; Matos et al., 2013; Pinto-Gouveia et al., 2013). Mills & colleagues (2007) found an association between self-hatred and self-criticism as measured by the FSCRS (Gilbert et al., 2004) and paranoia amongst students. In a regression model, they found that self-hatred was a stronger predictor of paranoia than depression (b=.33 versus b=.23). More recently, shame and paranoia have been investigated in a clinical group of young people at high risk of developing psychosis (Johnson et al., in press). Here, shame as measured by the ESS partially moderated the relationship between life stress and paranoia. This relationship appeared to be stronger in those who also exhibited more shame in relation to their body. Although statistically significant, this moderating effect did not appear to be strong, with a Beta value of .005, and .0002 when interacting with life events. This relationship was found to be non-significant for those with low or moderate levels of shame which may indicate a "buffer" if levels of shame are decreased. Johnson & colleagues (in press) also found a moderate correlation between the ESS and paranoia.

In a combined group of participants including individuals who experience persecutory delusions, depressed people and healthy controls, internal shame was strongly correlated to paranoia (Hatton et al., 2013). It may have been more helpful to report on individual group

scores to see if the link between shame and paranoia is indeed stronger for people with psychosis. However, this study was likely underpowered with only 15 people in the persecutory delusions group.

The link between shame and paranoia appears to be potentially clinically useful, however the research has mainly been done on non-clinical populations, limiting its application to clinical practice.

3.10 Is shame a vulnerability marker for psychosis?

The link between developmental trauma and psychosis is well established (Read, van Os, Morrison & Ross, 2005; Bentall, Wickham, Shevlin & Varese, 2012), yet the role of shame has received less attention in the literature. Nonetheless, studies amongst the general population, utilising path analysis, have suggested that different types of shame may be a potential mediator of the relationship between early adversity and psychotic experiences (Matos et al., 2013; Pinto-Gouveia et al, 2013). This relationship appears to be partially mediated by external shame (Matos et al., 2013). Higher incidents of childhood abuse was correlated with increased external shame and the perception of voices as more powerful and critical (Connor & Birchwood, 2012). The attempt to establish a pathway from shaming childhood adversity towards a vulnerability to a psychotic illness appears to be in its infancy in the literature. No firm conclusions can yet be drawn from this as non-clinical findings may need to be replicated in an appropriate psychosis group. However, this offers an opportunity for future researchers to explore this link even further.

3.11 Interventions for shame prone people with psychosis

As previously reviewed in this paper, shame appears to play a significant role in emotional dysfunction amongst individuals with psychosis (Birchwood et al., 2012). Cognitive behaviour therapy (CBT) is a leading approach when working with emotional dysfunction (Birchwood, 2006), however a CBT trial for a first episode of psychosis group failed to reduce shame as measured on the PBIQ (Gumley et al., 2006). They also failed to find a link between shame about illness and relapse rates in their sample.

Recent research has focused on establishing an appropriate intervention to help clients who are shame prone; namely Compassion Mind Training (CMT) or Compassion Focused Therapy (CFT; Gilbert, 2009). This approach was developed to build capacities to experience compassion in high shame and self-critical people (Braehler et al., 2012). Higher self-

reassurance has been associated with determining themes of voice content which may act as a buffer against persecutory hallucinations (Connor & Birchwood, 2013). A case series exploring effectiveness of CMT for people who hear malevolent voices recorded the data of three individuals who underwent the program (Mayhew & Gilbert, 2008). From data produced it appeared to be difficult to conclude if CMT was effective for those three individuals but qualitative feedback was positive and there was a reduction in internal shame. A compassion focused group for individuals in a high secure forensic setting appeared to be effective in significantly reducing depression scores and boosting self-esteem amongst group members (Laithwaite et al., 2009). Levels of external shame were significantly reduced when measured at a six week follow up, however only a small effect was observed.

In the first randomised control trial identified for CFT in psychosis, an emphasis was placed on the feasibility of running a group for a psychosis population (Braehler et al., 2012). This showed that shame on the PBIQ reduced when self-compassion increased amongst participants. The intervention was also deemed to be safe and acceptable for those who took part with an attrition rate of 18%, and some level of improvement was noticed in 65% of group members compared to 5% of those participants allocated to a "treatment as usual" condition.

As seen in the quality criteria table above (Table 1), the intervention studies that look at shame in psychosis appear to have several methodological issues surrounding number of participants and interpretation of results. Nonetheless they offer an encouraging platform to build more stringent levels of research upon.

4. Summary

The majority of papers have utilised the social rank theory when conceptualising the role of shame in psychosis. This includes making sense of how an individual reacts to the experience of having and being diagnosed with a psychotic illness and also linking developmental shame proneness to a vulnerability towards experiencing distressing psychotic symptoms. Social rank theory emerged 20 years ago and appeared at a time when awareness around stigma in relation to mental illness became heightened (Gilbert, 1997a).

Since landmark papers such as Rooke & Birchwood (1998), the link between shame and psychosis has become better understood and resultantly more frequently measured. It appears now that having a psychotic illness is a shaming experience in addition to being a distressing one (Birchwood et al., 2006). A pathway to post psychotic emotional dysfunction has placed shame in a central position when predicting such outcomes (Birchwood et al., 2000; Birchwood et al., 2006). Empirical findings have consistently supported Birchwood's stigma model and do explain a significant amount of shame seen amongst people with psychosis.

In addition, evidence has emerged that indicates shaming developmental experiences impact negatively upon psychotic experiences of paranoia in a non-clinical group (Matos et al., 2013) and hearing malevolent voices in a group with psychosis (Connor & Birchwood, 2013). Gilbert's model of shame, which distinguishes between external and internal shame, has received some empirical validation with external shame being shown to be a significant predictor of paranoia in non-clinical sample (Matos et al., 2013), trauma associated with a first episode of psychosis (Turner et al., 2012) and internal shame to be a predictor of depression in a first episode sample (Turner et al., 2013) and social anxiety in a control sample (Matos et al., 2013)

The proposed intervention of choice for shame prone individuals, as mentioned above, is Compassionate Mind Training (CMT) (Gilbert, 2009). This approach has been adapted specifically for a population recovering from psychosis (Gumley, Braehler, Laithwaite, McBeth & Gilbert, 2010). There has been a small amount of research assessing the feasibility and effectiveness of this approach in clinical and forensic settings. Initial results indicate that this is an acceptable therapy that can be delivered in group formats, however it is too early to make valid conclusions as to its effectiveness.

A suggested area for developing better insight is to look at and research what is particularly shaming about having a psychotic illness including the impact of weight gain and perceived unattractiveness. Also, understanding the stability of shame in the trajectory of recovery from a psychotic illness and testing out developmental pathways of shame as a vulnerability marker for psychotic experiences represent other key areas of interest for future research. It appears that shame increases alongside post-psychotic depression but this result needs further exploring (Birchwood et al., 2000).

Social isolation appears to be a comparatively common experience in psychosis (Allision, Harrop & Ellet, 2013). Thus, it would be of interest to explore shame's relationship with this. This may be particularly important if it is influential in impacting upon individuals' need to belong to relationships and social groups (Leary & Baumeister, 1995).

As a final reflection, agreement is now needed regarding the best measures for assessing shame amongst people with psychosis. The testing out of differing theories of shame and psychosis will benefit from an increased confidence around how it is evaluated. Currently there appears to be some disparity on how shame is measured, leading to difficulty in building upon and drawing firm conclusions from the existing research.

Despite encouraging results and an increased understanding of the role of shame in psychosis, there are a number of interesting areas that should be investigated further. A meaningful understanding of this complex relationship may result in the further application and refinement of Compassionate Focused Therapy (Gilbert, 2010) to samples recovering from psychosis.

The role of childhood trauma and shame in social anxiety and paranoia within an early intervention in psychosis population

Word Count: 9,817

Abstract

Background Social anxiety and paranoia are commonly observed social fears amongst a first episode of psychosis group. Social rank theory posits that different types of shame may be related to both. External shame and shame proneness have been shown to be linked to paranoia in a non-clinical population, whereas internal shame has been shown to be more closely associated with social anxiety. However, the role of different types of shame in moderating this association between childhood adversity and these social fears appears to be unclear amongst first episode psychosis samples.

Objectives To examine if distinct shame pathways to social anxiety and paranoia can be identified amongst a first episode of psychosis sample whilst considering other evidenced and theoretical perspectives that may underlie the formation of both social fears. In particular, it was explored whether different types of shame, including shame associated with psychosis and shame proneness, act as a moderator in the relationship of childhood adversity and paranoia and social anxiety.

Design A cross-sectional correlational design was utilised in addition to moderation analysis to investigate shame's impact on the link between childhood adversity and paranoia and social anxiety.

Method 45 individuals with a current diagnosis of a psychotic disorder whom were in the recovery phase of their treatment, completed questionnaires assessing childhood adversity, shame proneness, internal and external shame associated with psychosis, paranoia and social anxiety.

Results Childhood adversity was positively and significantly correlated with all shame measures and social anxiety and paranoia. In addition, all types of shame were positively and significantly correlated with paranoia and social anxiety. However, regression analysis suggested that external shame was a stronger predictor of both paranoia and social anxiety than internal shame. Childhood adversity predicted both social anxiety and paranoia and collectively, all shame measures moderated the association between childhood adversity and paranoia and social anxiety. However, no single shame measure emerged as having a significant impact on this relationship, except for a small effect by internal shame interacting with childhood adversity in the moderation analysis of paranoia.

Conclusion The current study provides strong evidence for the role of shame in social anxiety and paranoia in a first episode of psychosis population. External shame may play a particularly important role in this relationship. In addition, shame appears to significantly amplify the relationship between childhood adversity and paranoia and social anxiety. However, the lack of a clear type of shame as a significant moderator may highlight issues surrounding how shame is measured and mapped onto conceptual definitions.

1. Introduction

Social anxiety and paranoia are examples of different social fears (Matos, Pinto-Gouviea, & Gilbert, 2013), which are often experienced in a first episode of psychosis (Birchwood, 2003). Social anxiety is one of the most common forms of emotional dysfunction experienced following a psychotic episode (Birchwood, 2006). In contrast, paranoia is viewed as a core feature or symptom of psychosis (Mueser & McGurk, 2004). Both are similar as they are focused on a sense of threat (Dagnan, Trower & Gilbert, 2002). A recent study (Matos, Pinto-Gouveia, Gilbert, 2013) has suggested that early adverse life experiences and different types of shame may be important variables in explaining both paranoia and social anxiety. However, this model was based on a non-clinical community sample and it remains to be seen whether early experiences and different types of shame can shed light on the experience of social anxiety and paranoia in a clinical sample recovering from a first episode of psychosis. This is the focus of the current study. Before reviewing the Matos study and their model, previous research on social anxiety and paranoia will be presented.

1.1 Social Anxiety

Social anxiety is defined as a persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or possible scrutiny by others. The individual fears that they will act in a way or show anxiety symptoms that will be humiliating or embarrassing (DSM-IV, APA, 1994). Clinically significant social anxiety is known as social anxiety disorder (SaD) and is typically measured by the Social Interaction and Anxiety Scale (SIAS) and the Social Phobia Scale (SPS) (Mattick and Clarke, 1998). SaD has been estimated to have a lifetime prevalence rate from 3.1%-15.6% in the general population (Favarelli et al., 2000; Furmark et al., 1999).

Individuals with social anxiety often wish to create a desirable impression around other people, yet believe that they do not possess the aptitude to do so (Michail, 2013). They often worry that others will judge them negatively due to this and consequently adopt socially avoidant coping strategies (Clark & Wells, 2005). Consequently, social anxiety can be a debilitating mental illness and can impact on many areas of an individual's life; social functioning can reduce significantly due to high amounts of withdrawal from relationships, social interactions and employment (Wittchen et al., 2000).

1.2 Social Anxiety disorder in psychosis

SaD has consistently been observed as highly prevalent within psychosis populations (29-36%; Birchwood et al., 2006; Pallanti, Querciolio & Hollander, 2004). It is associated with higher rates of suicide attempts, substance misuse, worse social adjustment and lower quality of life (Pallanti et al., 2004). Social anxiety is also observed to be of high co-morbidity in people with post-psychotic depression (Michail & Birchwood, 2009).

Shame and humiliation related to having a psychotic illness have been identified as important in understanding the prevalence of social anxiety (Rooke & Birchwood, 1998). There is a high amount of stigma associated with a diagnosis of schizophrenia or a related psychotic disorder (Crisp, Gelder, Rix, Meltzer & Rowlands, 2000) most likely due to a widely held view that people with this diagnosis are dangerous and are often referred to with derogatory language such as "schizos" or "psychos" (Miller & Mason, 2005).

Birchwood et al., (2006) developed a model that focused on the contribution of shame to social anxiety following psychosis. They argued that when an individual is aware of negative societal attitudes that are held about an undesirable social group, they can become socially marginalised when they perceive themselves as belonging within this category. Estroff (1989) proposed that schizophrenia tends to be perceived as an "I am" illness as opposed to an "I have" illness, for example, "I am a schizophrenic", whereas other illnesses may be defined as "I have heart disease". In being defined by an illness with such a negative reputation, adjustment to this already distressing life event creates a disparity in who a person once felt they were to a self that is potentially seen as defective (Miller & Mason, 2005).

A number of other shaming variables may be experienced including gaining weight or loss of sexual proficiency due to the side-effects of anti-psychotic medication (Miller & Mason, 2005). As a result, shaming beliefs about the self begin to form, confirming that one may be defective and that they will be "exposed" (Birchwood et al., 2006). To protect oneself from this feared outcome, Birchwood et al. (2006) argued that safety strategies develop e.g., hiding, submissiveness, act threatening or look hostile. This in turn may lead to the development of social anxiety due to the fearful regard that social interactions are now held in.

It has been found that service users with a diagnosis of social anxiety had significantly higher amounts of shame associated with their illness and external shame than those with psychosis but without social anxiety (Birchwood et al., 2006; and Michail & Birchwood,

2012). This highlighted that shame is potentially a key variable in social anxiety disorder following psychosis, consistent with the aforementioned model.

Michail & Birchwood (2009) extended these findings by comparing patients with social anxiety disorder (SaD/no FEP) to those with a first episode of psychosis but with no social anxiety (FEP/no SaD) and those with psychosis and social anxiety disorder (FEP/SaD). They found that the SaD/FEP group have comparable levels of social anxiety to the SaD/no FEP group. In addition, they found that paranoia symptoms between the two psychosis groups, that is those just with psychosis (FEP) verses those with psychosis and social anxiety disorder (FEP/SaD) did not differ, which highlighted SaD is not a "symptom" of psychosis.

Finally, a more recent study by Michail & Birchwood (2014) examined the role of early attachment experiences in social anxiety following psychosis. They found 25% of their sample had a diagnosable SaD. People with first episode of psychosis (FEP) and social anxiety (FEP/SaD) and just SaD reported significantly higher amounts of childhood trauma and adversity than those with psychosis and no social anxiety disorder (FEP/SaD) and healthy controls. There was no difference in childhood trauma between those with just social anxiety (SaD) and those with social anxiety and psychosis (FEP/SaD). This suggests that current social anxiety levels are often rooted in early life attachment relationships (Bowlby, 1977). In particular, social anxiety is thought to be linked to insecure attachment and is typified by a negative view of self and others (Michail & Birchwood, 2014). Therefore, it is suggested that insecure attachment and the onset of a psychotic illness may both be relevant to the formation of social anxiety in psychosis.

1.3 Paranoia

Paranoia is characterised by an increased sense of threat, mistrust and suspiciousness around others, as well as difficulties in forming affiliative relationships (Matos, Pinto-Gouveia & Gilbert, 2013). Although typically mentioned as a frontline symptom of a psychotic illness, paranoid thinking styles have been recently conceptualised as existing on a continuum within normal experiences (Romme and Escher, 1989; van Os, Hanssen, Bijil & Ravelli, 2000; van Os & Kapur, 2009). Paranoia has been described as a normal psychological process that involves an awareness of potential malevolent intent of others directed at the self (Ellet, Lopes & Chadwick, 2003). It has been found that up to one-third of a general population sample may experience paranoid ideation, but for the vast majority this will not be clinically significant (Freeman et al., 2005).

1.3.1 Paranoia hierarchy

Freeman et al., (2005) proposed a hierarchy of paranoia that showed experiences including social evaluative concerns and ideas of reference are common amongst the general population. However, rarer thoughts with threat focused content such as "people are trying to cause me distress or harm" ranging to "there is a conspiracy against me", lie at the higher end of this continuum and represent more clinically significant paranoia. The hierarchy structure is helpful in that it conceptualises severe paranoia as built upon socially anxious concerns.

1.3.2 Pathway to paranoia

Matos et al., (2013) have proposed a model based on social rank theory that has identified two related but distinct pathways to explain how individuals may experience paranoid ideation or social anxiety that involves early experiences and different types of shame. Before exploring their model and findings in more detail it will first be helpful to briefly outline social rank theory and consider the role of shame in this.

1.4 Social rank theory

Social mentalities such as theory of mind and self-conscious awareness have evolved to help us monitor how others may appraise us (Gilbert, 2003, 2007). It is the experience of shame that might be the signal from an innate alert system that we will be rejected or even harmed by others (Gilbert, 2003). Shame is a socially focused, self-conscious emotional process that orientates around punitive self-judgement and wariness around negative evaluation from others (Mills, 2005; Miller and Mason, 2005). Social rank theory is important when considering how shame may play a vital role in paranoia and social anxiety (Gilbert, 2000). People live within certain group structures where desired approval from others impact upon the behaviours of group members. Acceptance and approval has played a significant role in our survival as a social species; there are significant benefits to belonging to safe and secure relationships with others, including better immune system functioning and increased release of oxytocin (Heinrichs, Baumeister, Kirschbaum & Ehlert, 2003; Norman, Hawkley, Cole, Berntson, Cacioppo, 2012), leading to a feeling of safety through the activation of the affect system related to soothing (Gilbert, 2009).

Therefore, belonging to supportive relationships is both psychologically and physiologically regulating (Cacioppo, Berntson, Sheridan & McClintock, 2000). Without this sense of belongingness, an individual is more prone to a number of negative psychological

and physical health outcomes including depression, anxiety, loneliness, shame and reduced immune system functioning (Tambor & Leary, 1993).

Feeling defective may lead a person to be aware that they exist negatively in the minds of others and consequently will not reach an expected socially desired level of attractiveness. The outcome of rejection is feared due being down ranked and marginalised, leading to acquisitive and defensive behaviours based on the want to appear attractive in the mind of others (Gilbert, 1997).

1.5 Measurement of Shame

The conceptualisation and measurement of shame appears to vary in the literature to date, with some referring to and measuring it as a trait (Lemming & Boyle, 2004). However, there have been useful distinctions made that indicate shame may be conceptualised differently, depending on where the emphasis is placed by the individual (Gilbert, 2000; Lemming & Boyle, 2004). Internal shame occurs when the focus of our thoughts and attention are directed inwardly on the self, in a self-deprecating manner (Gilbert, 2002). This focus centres on our mistakes and flaws, and feelings of inferiority are a common feature of such self-critical judgements. External shame occurs when the focus of attention is outwardly placed, and is associated with thoughts of existing negatively in the minds of other people (Gilbert 2002). It is posited that external shame develops when an individual, often at a young age, is exposed to critical or threatening interpersonal experiences, leading them to believe that they are undesirable to others, whom may have mal intent towards them (Gilbert, 2002). A major defence to this is to internalise the critical other, and as a safety strategy utilise submissive behaviour and blame the self, i.e. internal shame, leading to them devaluing the self (Pinto-Gouveia, Matos, Castilho & Xavier., 2012).

1.6 Role of shame in Social Anxiety and Paranoia

Matos et al., (2013) suggest that both paranoia and social anxiety may develop due to exposure to differing degrees of hostile behaviour from others during childhood. They propose that memories of shaming events may function similarly to traumatic and autobiographical cognitions. Consequently, such memories may bias an individual towards malevolent intentions of others towards the self, i.e. paranoia, or a social wariness focused on the defectiveness of the self, i.e. social anxiety. Autobiographical memories have been conceptualised as containing socially constructed schema that underlie self-identity and how we perceive others as well as how we perceive interactions with others (Conway, Mears &

Stanart, 2004). Matos draws upon the Centrality of Event Theory (Bernstein & Rubin, 2007), that suggests memories of negative events can become positioned as central to one's identity, and be perceived as a "turning point" in one's life. Memories serving this function could be associated with an increased vulnerability to psychopathology, due to interpreting events in an shameful manner (Matos et al., 2013).

The role of shame memories in this process can be substantial, due to the possibility of shaming experiences developing from a young age (Gilbert, 1997a), and it has been found that shame memories exist within autobiographical memory as powerful and distressing that are close to individuals' identity (Pinto-Gouveia & Matos, 2011). Matos et al., (2013) propose that shame memories are threat memories that are linked with intense affect and cognitions of being bullied, criticised, harmed or of failing. Matos & Pinto-Gouveia (2010) established that shame memories function similarly to trauma memories in that they are characterised by hyperarousal, intrusive thoughts and typified by experiential and behavioural avoidance.

However, Matos et al (2013) found that those who had shame memories which were closer to their identity, as measured by the Centrality of Events Scale (CES; Bernstein &Rubin, 2006) with more trauma like features, measured by the Impact of Events Scale (IES-R; Weiss & Marmar, 1997) currently experienced more paranoid ideation. Matos et al (2013) showed through path analysis that higher paranoia and shame memories were associated with external shame, as measured by the Other as Shamer Scale (OAS; Goss et al., 1994). Also, social anxiety and depression were associated with internal shame, as measured by the Experience of Shame Scale (ESS; Andrews, Qian & Valentine, 2002).

1.7 Evaluation of the Matos Model

Matos' model builds on the already established link between early life difficulty and paranoia (Janssen, Krabbendam, Bak, Hanssen, Voobegh, de Graaf & van Os, 2004). In addition, their findings are consistent with a study with a non-psychotic clinical population which showed that although social anxiety and paranoia may be related, there may be two discreet pathways to them, with paranoia based on hostile intent of other and social anxiety focused on the inadequacies of the self (Gilbert, Boxall, Cheung & Irons, 2005).

However, Michail and Birchwood (2014) argue that the high level of affective dysregulation in psychosis develops due to shared risk factors between psychosis and social anxiety. In addition, Michail & Birchwood (2012) found high correlations between social

anxiety and external shame in a first episode of psychosis sample however internal shame was not measured. This may not be fully compatible with Matos' et al. (2013) that advocate more differentiated pathways to social anxiety and paranoia as a psychotic symptom, where paranoia would be linked more with developmental adversity. In addition, it may not fully fit with Michail & Birchwood's (2014) findings that childhood trauma is key in social anxiety. Seeing that Matos et al base their conclusion on a study with a non-clinical population, it would appear vital to test this model out with individuals who have experienced a psychotic episode.

1.8 Current study

The current study aims to investigate whether the Matos et al., (2013) model on pathways to paranoia and social anxiety can be identified within a clinical population. This study will expand on Matos et al., (2013) in three ways.

First, a childhood trauma questionnaire will be included in this study in order to gain an advanced understanding of reported frequency of adverse childhood experiences and shame memories. This differs from Matos et al., (2013), in that childhood adversity was measured by proxy by shame proneness and not a discreet separate measure.

Second, as well as measuring shame proneness with the CES and IES-R, adapted measures of the Internal Shame Scale (ISS; Cook, 1994) and the OAS (Turner et al., 2013) will be used to assess shame associated with psychosis, consistent with Birchwood et al's., (2006) original model that highlighted shaming evaluations of psychosis are key.

Thirdly, a different analysis methodology will be utilised in the current study than the path analysis used by Matos et al. Recent studies have found that shame is an important moderator between adverse events or stressors and psychopathology (Beck et al., 2011; Harper & Arias, 2004; Shorey et al., 2011; Johnson et al., in press). As a result, a moderation analysis will be used to examine whether different types of shame amplifies the relationship between childhood trauma and social anxiety and paranoia.

1.9 Hypotheses

The following hypotheses will be examined.

1. First, the relationships between childhood trauma and different types of shame (shame proneness and shame associated with psychosis) will be examined. Specifically, it will be examined whether childhood trauma is associated with more shame proneness which consists of centralised and traumatic shame memories (hypothesis 1a). In addition, it will be examined if childhood trauma is associated with making internal and external shame based appraisals associated with psychosis (hypothesis 1b). The relationship between shame proneness and psychosis associated with psychosis will also be explored, with positive correlations predicted.
2. The second set of hypotheses will examine whether childhood trauma is associated with paranoia (hypothesis 2a) and social anxiety (hypothesis 2b). Based on previous findings (Michail & Birchwood; 2014; Janssen et al., 2004), it is predicted both will show a significant and positive relationship.
3. Consistent with findings considered above, the third hypothesis predicts that individuals who are more shame prone will also report higher paranoia (hypothesis 3a) (Matos et al., 2013), and social anxiety (hypothesis 3b) (Birchwood et al., 2006; Michail and Birchwood, 2013).
4. The fourth hypothesis examines whether external shame is a stronger predictor of paranoia (hypothesis 4a) and whether internal shame is a better predictor of social anxiety (hypothesis 4b). As seen above, there is some evidence to support this pattern of results (Matos et al., 2013). However, other evidence reviewed above has found external shame is related to social anxiety (Gilbert, 2000), including in first episode of psychosis samples Michail & Birchwood, 2012). Thus this study will explore these different possibilities.

   5. The final hypothesis will examine whether particular types of shame moderate childhood trauma and social anxiety and paranoia. Specifically, the current study will examine whether shame proneness, that is centrality of shame memories and their traumatic impact and shame associated with psychosis, both internal and external, amplify the relationship between childhood trauma and paranoia and social anxiety. As seen above, there are grounds to expect external shame and increased shame proneness will moderate paranoia (hypothesis 5a) and internal

shame will moderate social anxiety (hypothesis 5b) (Matos et al., 2013) whereas other evidence suggests that distinct shame based pathways may not be identified but that shame should still predict non-specific but significant variance in social anxiety and paranoia (Michail and Birchwood's, 2009; 2014).

2. Method

Recruitment was conducted within four Early Intervention Psychosis teams in a densely populated inner city area. All participants required a diagnosis of non-affective or affective psychosis according to ICD-10, were over the age of 18 and were fluent English speakers. Participants were excluded if they were experiencing an acute psychotic or mental health episode, or had been in hospital due to their mental health in the past month or if they represented a risk to themselves or others. Care co-ordinators were asked to identify appropriate potential participants from their case loads. Prospective participants were then contacted by a researcher and a date and time was arranged to complete a pack of questionnaires which took on average 45 minutes to complete, but this ranged from about 30 minutes to 90 minutes with some participants. The questionnaires were filled out with the researcher present.

2.1 Participants

Forty-five participants completed the questionnaire packs from all four teams. Details of the demographics of participants are detailed in Table 1 below. The ethnic diversity seen reflects an inner city population :

Average age	25 (SD 5.03) range 19-36 years old
N=45	24 Male, 21 Female
White British	18 (37.5%)
Pakistani	8 (16.7%)
Bangladeshi	4 (8.4%)
Black African	4 (8.4%)
White Other	3 (6.2%)
Mixed Race	2 (4.2%)
Afro-Caribbean	2 (4.2%)

Table 1. Participant demographics

Recruitment occurred over an eight month period and usually was completed during one appointment. Only one participant withdrew after agreeing to take part.

2.2 Measures

2.2.1 Childhood Trauma.

This was assessed with the Trauma and Distress Scale (TADS; Patterson et al, 2002), which is a 33-item list of trauma and distress experiences in childhood. It includes five domains: self-esteem, physical abuse, sexual abuse, adverse experiences and shame/guilt. Consistent with previous studies (e.g., Luutone, Tikka, Karlsson & Salokangas, 2013) all 33-items were summed to provide a total score for childhood trauma. The internal reliability of this total score in our sample was excellent ($\alpha = .91$).

2.2.2 Shame Proneness

Two scales were used to assess shame proneness. However, consistent with previous approaches (e.g., Matos et al. 2013), participants were first primed to think of a shame memory from their past. Once participants read this, they were then asked to complete the Centrality of events scale (CES; Bernstein & Rubin, 2006), which contains 16 items and measures the degree that shameful memory exists as an emotional reference point, a turning point for them and contributes to their sense of identity. These three subscales can be used separately or items can be summed to provide an overall score of centrality of shame memories. Consistent with previous research, the total scale was used (Matos et al., 2013). This total score has been shown to have good internal reliability ($\alpha = .90$; Bernstein & Rubin, 2006) and the internal reliability in the current sample is consistent with this ($\alpha = .92$).

Participants also completed the Impact of Event scale - Revised (IES-R; Weiss & Marmar, 1997), which has 22 items and measures the distress felt in relation to a stressful life event or experience. The IES-R contains three subscales which measure intrusions, avoidance and hyper-arousal. Participants indicate the degree of distress they have experienced in the last week due to each item on a 5-point scale ranging from 0 (not at all) to 5 (extremely). The scale items can also be summed to provide a total measure of traumatic or stressful impact. In the current study, participants completed the IES-R in relation to the shame memory that was identified in the CES. Internal reliability in the current study was excellent ($\alpha = .96$).

2.2.3 Shame Associated with Psychosis

Two scales were used to assess shame associated with having a psychotic illness. Participants completed the Internalised Shame Scale (ISS; Cook, 1994) which contains 24

items assessing internal shame using a 5 point Likert scale. This questionnaire was adapted by Turner et al (2013) for use with a FEP group, to assess an individuals' shame specifically in relation to their psychosis. Turner et al (2013) reported excellent internal reliability for this adapted measure (α = .96) and reliability in the current study was comparable (α = .97). Participants also completed the Other as Shame Scale (OAS; Goss et al, 1994), which assesses external shame and contains 18 items. Participants indicated their agreement with each item on a 5 point Likert Scale ranging from 0 (Never) to 4 (Almost always). The items on this scale were originally adapted directly from the ISS by Goss et al. (1994).This questionnaire was also modified by Turner et al (2013) in order to assess external shame associated with psychosis. Turner et al (2013) reported the internal validity of this modified measure was excellent (α= .97) and internal reliability in the current study was comparable (α = .96).

2.2.4 Social anxiety

Two scales were used to measure social anxiety. The Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) contains 20 items and measures anxiety within social interaction contexts. Participants responded to items on a 5-point Likert scale ranging from 0 (Not at all) to 4 (Extremely). Reliability was excellent in the current study (Cronbach = .92). Participants also completed The Social Phobia Scale (SPS; Mattick & Clarke, 1998), which contains 20 items and measures anxiety related to performance when the individual thinks they are being observed and evaluated by others. Participants responded on a 5 point Likert scale ranging from 0 (Not at all) to 4 (Extremely). Reliability was excellent for the SPS this study (α = .97). Both the SIAS and SPS have been used with a first episode psychosis sample (e.g. Michail & Birchwood, 2012).

2.2.5 Paranoia

The Paranoia Checklist (Freeman et al, 2005) measures a multi-dimensional representation of paranoid ideation. It contains 18 items that are marked on a 5 point Likert scale ranging from 1 to 5 and assesses the frequency 1 (rarely) to 5 (Hourly), degree of conviction 1 (Do not believe it) to 5 (Absolutely believe it), and distress associated with different paranoid thoughts 1 (Not distressing) to 5 (Very distressing).The three subscales of the Paranoia Checklist can be used to provide scores of the frequency, conviction, and distress associated with paranoia or the subscales can be summed to provide a total score of

paranoia (Westermann & Lincoln, 2010). The current study used the total paranoia score and this had excellent internal validity ($\alpha = .98$)

3. Results

Spearman correlations were conducted to examine the relationship between different variables in the study. Non-parametric correlations were used as a Sapiro-Wilk test identified some of the data as non-normally distributed (Field & Miles, 2010). Hierarchical regression analysis was used to investigate whether different types of shame moderated the relationship between childhood trauma and paranoia and social anxiety. However, prior to reporting these results the descriptive statistics will be discussed. These are presented in Table 2 below:

Table 2. Descriptive statistics for sample (N = 45)

		Range	*Mean*	*Standard Deviation*
Childhood trauma	TADS	36-111	68.11	20.62
Shame proneness	CES	23-76	53.78	12.93
	IES-R	0-84	37.20	23.73
Shame associated with psychosis	ISS	0-104	62.34	22.81
	OAS	0-72	32.87	18.43
Paranoia	PC	54-230	111.32	54.38
Social anxiety	SPS	0-76	32.73	25.88
	SIAS	4-76	35.20	20.55

Note. TADS = Trauma & Distress Scale; CES = Centrality of Event Scale; IES-R = Impact of Event Scale-Revised; ISS = Internal Shame Scale; OAS = Other as Shamer Scale; PC = Paranoia Checklist; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale.

The mean score of the TADS was 68.11(SD 20.62) out of a potential total score of 165. The CES has a mean score (M = 53.78, SD = 20.62), which is higher than a non-clinical sample (44.99, SD 18.65; Matos et al., 2012). The IES-R mean (37.20, SD 23.73) indicates that the current sample experienced lower amounts of trauma in relation to shame memories than a non-clinical sample, (85.36, SD 2.77; Matos et al., 2013). Thus the present sample reported of trauma memories that appeared slightly higher in centrality but having less traumatic impact than a non-clinical population. The ISS scores (62.34, SD 22.81), appears to be higher than previous scores with a first episode sample (40.33, SD, 26.69, Turner et al, 2013) and a student population (M=32.1, SD 16.2, Goss et al., 1994). This is also seen with the OAS (32.87, SD 18.43), when compared to a similar sample (M = 27.53, SD 19.11;

Turner et al, (2013) and a non-clinical population (M=19.60, SD 9.45; Matos et al., 2012). The paranoia checklist scores (M = 111.32; SD 54.38) appear to be higher than a non-clinical population (75.01, SD 24.45; Westermann & Lincoln, 2010). The SIAS scores indicate a high level of social anxiety in this sample, with the mean score (35.20, SD 20.55) falling just below the cut off for a potentially clinically significant social anxiety (36). However, 51 % of the sample were over this mark therefore half of the current sample were meeting the criteria for clinical significant social anxiety. The SPS scores also indicated that this sample had a high proportion of clinically significantly social anxiety with the mean (32.73, SD 25.88), which is above the clinical cut off of 26. 47% of the sample reported scores over this mark so again nearly half are reporting clinical significant social phobia.

3.1 Analysis

The zero-order correlations between childhood trauma (TADS), shame proneness (centrality of shame memories and their traumatic impact), shame associated with psychosis, paranoia, and social anxiety are displayed in Table 3 below. Given that the three subscales of the Paranoia Checklist were highly correlated (all r's > .93 $p < .001$) they were summed to provide a total score of paranoia. As mentioned earlier this total score had excellent internal reliability ($\alpha = .98$).

Table 3: Zero correlations between childhood trauma, centrality of shame memories and their traumatic impact, internal and external shame associated with psychosis, paranoia, and social anxiety.

		Shame proneness		*Shame associated with psychosis*		*Paranoia*	*Social anxiety*	
		CES	IES-R	ISS	OAS	PC	SPS	SIAS
Childhood trauma	TADS	.36*	.49**	.66**	.71**	.76**	.55**	.68**
Shame proneness	CES		.73**	.52**	.49**	.62**	.60**	.57**
	IES-R			.68**	.65**	.72**	.68**	.68**
Shame associated with psychosis	ISS				.83**	.76**	.68**	.67**
	OAS					.77*	.74**	.74**
Paranoia	PC						.74**	.82**
Social anxiety	SPS							.87**

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Note. TADS = Trauma and Distress Scale; CES = Centrality of Event Scale; IES-R = Impact of Event Scale-Revised; ISS = Internal Shame Scale; OAS = Other as Shamer Scale; PC = Paranoia Checklist; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale

3.2 Childhood Trauma, Shame Proneness and Shame Associated with Psychosis

The first set of hypotheses examined whether childhood trauma (TADS) was related to shame proneness as measured by the Centrality of Event Scale (CES) and the Impact of Event Scale –Revised (IES-R) and with internal (ISS) and external (OAS) shame associated with psychosis. As expected, childhood trauma (TADS) was positively correlated with both the centrality of shame memories (CES), ($r = .36$, $p < 05$), and their traumatic impact (IES) ($r = .49$ $p < .01$). Thus, participants who reported more childhood trauma were also more prone to shame memories being more central to their identity and these shame memories were also more likely to be having a current impact on them, that is, they were experiencing more intrusions, avoidance, and hyper-arousal associated with these shame memories. Thus, hypothesis 1a was supported.

From Table 3, it can also be seen in line with hypothesis 1b that childhood trauma (TADS) was strongly correlated with internal shame associated with psychosis ($r = .66$ $p < .001$) and external shame associated with psychosis ($r = .71$ $p < .001$). Therefore, participants

who had reported more childhood trauma were more likely to report experiencing both internal and external shame due to having had a psychotic illness.

Finally, the relationship between shame proneness and shame associated with psychosis was examined. From Table 3, it can be seen that the centrality of shame memories (CES) is correlated with both internal ($r = .52$ $p < .001$) and external ($r = .49$ $p < .001$) shame associated with psychosis. Similarly, the traumatic impact of these shame memories (IES-R) is strongly correlated with both internal ($r = .68$ $p < .001$) and external (r = ..65, p<.001) shame associated with psychosis. Therefore, participants who are more shame prone were more likely to have higher levels of internal and external shame associated with psychosis.

3.3 Childhood Trauma, Paranoia and Social Anxiety.

The second set of hypotheses examined whether childhood trauma was associated with paranoia (hypothesis 2a) and social anxiety (hypothesis 2b). Previous research (Matos et al, 2013) has suggested that paranoia has a stronger association with childhood adversity than social anxiety in a non-clinical sample. However, it is possible that childhood trauma leads to both paranoia and social anxiety in a clinical sample who have experienced psychosis (Michail & Birchwood, 2013). Childhood trauma was positively correlated with paranoia ($r = .76$, $p < .001$), social phobia ($r = .55$ $p < .001$), and social anxiety ($r = .68$, $p < 001$). Therefore, participants who reported more childhood trauma reported higher levels of paranoia, social phobia, and anxiety about interacting with others. The correlation between childhood trauma and paranoia is slightly stronger than the one between childhood trauma and social phobia.

However, there was less difference between the strength of the correlations between childhood trauma and paranoia compared to childhood trauma and social anxiety about interacting with others (SIAS).

3.4 Shame proneness and paranoia and social anxiety

The third set of hypotheses examined the relationship between shame proneness, paranoia, and social anxiety. The Centrality of shame memories (CES) was positively correlated with paranoia (r = .62, p<.001), social phobia (SPS) ($r = .60$ $P < .001$), and social anxiety (SIAS) ($r = .57$ $p < .001$). The relationship between the traumatic impact of shame memories and paranoia and social anxiety were then examined. The traumatic impact of shame memories (IES-R) was positively correlated with paranoia ($r = .72$ $p < .001$), social phobia ($r = .68$ $p < .001$), and social anxiety ($r = .68$ $p < .001$). Thus, shame proneness as

defined by participants who reported that they were experiencing more intrusions, avoidance, and hyperaroual due to their memories and reported these were more centrality to their identity experienced more paranoia (hypothesis 3a), and social phobia, and social anxiety (both hypothesis 3b). The strength of the correlations between paranoia and social anxiety with centrality of shame memories were very similar. The same pattern is noticed with the traumatic impact of shame memories.

In summary, these findings suggest that both paranoia and social anxiety, at least in a first episode sample, are associated in a similar way to developmental adversity. More importantly, this finding was consistent irrespective of whether the measure of developmental adversity was assessed with a measure of childhood trauma or shame proneness.

3.5 Internal, External Shame, Paranoia and Social Anxiety

Next, the previous finding that paranoia is more likely to be associated with external shame whereas social anxiety is more likely to be associated with internal shame (Matos et al., 2012) was examined. There were positive and strong correlations between external shame associated with psychosis and paranoia ($r = .77$, $p < .001$), social phobia ($r = .74$, $p < .001$) and social anxiety, ($r = .74$, $p < .001$). Thus, participants who reported more external shame also reported more paranoia and social anxiety. There were also positive correlations between internal shame and paranoia, ($r = .76$, $p < .001$), social phobia ($r = .68$, $p < .001$), and social anxiety, ($r = .67$, $p < .001$). Thus, participants who reported more internal shame associated with psychosis reported higher levels of paranoia and social anxiety. It can be seen that the strength of the correlations between external shame and paranoia is slightly stronger than the one between internal shame and paranoia. However, this pattern also holds up for the relationship between external shame and both measures of social anxiety, that is, the correlations between external shame and social anxiety are slightly stronger than the ones between internal shame and social anxiety.

In order to examine whether internal or external shame had independent relationships with paranoia and social anxiety, regression analyses was conducted. In each regression analysis, internal (ISS) and external (OAS) shame were entered as independent predictors of paranoia (regression 1), social phobia (SPS) (regression 2), and social anxiety (SIAS) (regression 3). For the first regression, a significant multiple correlation was observed, between paranoia and the predictor variable remaining in the model which was external

shame (β = .70, t = 6.28, p < .001). Thus, external shame independently predicted paranoia. For the second regression, a significant multiple correlation was also noted between social phobia and the predictor variable which was again external shame (β = .69, t = 6.1., p < .001). Similarly for the third regression, another multiple regression model was found between social anxiety and external shame (β = .74, t = 7.1., p < .001). Therefore, it appears that external shame is associated with both paranoia and social anxiety over internal shame. This is partially consistent with previous results in a non-clinical population where paranoia was associated more with external shame; however the link between social anxiety and external shame, not internal shame, reveals a different pattern from Matos et al., (2012). The association between external shame and social anxiety is however consistent with Michail & Birchwood (2013) findings for a first episode sample, and Gilbert (2000) with a clinically depressed sample.

3.6 Does shame moderate childhood trauma, paranoia and social anxiety

The fifth hypotheses suggested that the relationship between childhood trauma, paranoia and social anxiety would be moderated by central shame memories and their traumatic impact, and shame in relation to psychosis. Paranoia, as measured by the paranoid checklist, was the dependent variable in the first hierarchical regression (hypothesis 5a). In the first step, childhood trauma (Trauma and Distress Scale) were entered as a predictor variable. In the second step the centrality of a shameful memory/event (as measured by the Centrality of Events Scale), the traumatic impact of this shame memory (as measured by the Impact of Event Scale Revised), and internal and external shame regarding psychosis (as measured by the Internal Shame scale and the Other as Shamer scale) were entered as the main effects of the moderator variables. In the third step, the interaction between childhood trauma and the moderator variables was entered. All of the variables were centred to reduce the impact of multiple co-linearity. In addition, asymptotic probability estimates are supplemented with bias corrected accelerated (BCa) bootstrap estimates of the regression parameters and their associated 95% confidence intervals. The BCa bootstrap estimates are included as they have been shown to be robust to violation of inference assumptions and smaller sample sizes (Wu, 1986). The results of this analysis are presented in the table below:

Table 4: Regression with Paranoia as dependent variable

Model		***B***	***Bootstrap (based on 5000 samples)***				
			Bias	**Std. Error**	**Sig. (2-tailed)**	**BCa 95% Confidence Interval**	
						Lower	**Upper**
Step 1							
R^2 Change = 0.470	(constant)	-.955	.328	6.090	.885	-12.584	11.565
$F_{1,41}$ = 36.320	TADS	1.75	.014	.361	.000	1.022	2.464
P<0.003							
Step 2	(constant)	-1.004	.116	5.299	.844	-11.542	9.425
R^2 Change = 0.187	TADS	.931	.009	.392	.024	.151	1.672
$F_{4,37}$ = 4.998	CES	.505	.041	.591	.407	-.933	1.784
P=0.003	IES-R	.516	-.041	.429	.234	-.236	1.217
	ISS	.321	-.021	.363	.357	-.307	.961
	OAS	.342	.048	.576	.557	-.855	1.722
Step 3	(constant)	-1.333	-.343	5.425	.799	-11.855	8.290
R^2 Change = 0.092	TADS	.-.745	-.046	1.729	.605	-4.293	2.533
$F_{4,37}$ = 3.007	CES	1.581	-.515	2.267	.438	-2.178	4.214
P=0.032	IES-R	-2.235	.234	1.470	.076	-6.184	1.932
	ISS	-1.931	.265	1.154	.075	-4.896	1.872
	OAS	3.329	-.046	1.677	.035	-.322	6.442
	TADSxIESR	.035	-.005	.022	.068	-.003	.060
	TADSxCES	-.014	.009	.039	.683	-.103	.108
	TADSxISS	.035	-.004	.021	.066	.004	.060
	TADSxOAS	-.037	.001	.028	.134	-.089	.026

Note. TADS = Trauma and Distress Scale; CES = Centrality of Event Scale; IES-R = Impact of Event Scale-Revised; ISS = Internal Shame Scale; OAS = Other as Shamer Scale; PC = Paranoia Checklist; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale

3.7 Does shame moderate childhood trauma and paranoia

At step 1 of the hierarchical regression, there was a significant relationship between developmental trauma and paranoia (β=1.750, CI 1.022 to 2.464), which accounted for approximately 47% of the variation on the paranoid checklist ($F_{1, 41}$=36.320, $p < 0.001$). In the second step, the main effects of the moderator variables added a further 19% explained variance ($F_{4, 37}$=4.998, p= 0.003). Finally, the interaction between the moderator variables and developmental trauma accounted for a further 9% explained variance ($F_{4, 33}$ = 3.007, p=0.032). Of these interaction terms, the BCa bootstrap confidence intervals indicate that the internal shame associated with psychosis (ISS) and the TADS (β=0.035, 95 % CI 0.004 to 0.0600) evidence a significant moderation affect. In addition, the traumatic impact of central shame memories (IES-R) interaction with the TADS (β=0.035, 95 % CI -0.003 to 0.0600), approached significance. However, estimation of the unique contribution of the moderators is

confounded by multiple co-linearity between these variables as seen with the high correlations between predictor variables.

3.8 Does shame moderate childhood trauma and social anxiety

Two further hierarchical regression analyses were conducted to examine whether the relationship between developmental trauma and social anxiety (Hypotheses 5b) was moderated by the centrality and impact of the shaming memory and shame in relation to psychosis. Social anxiety was measured by two scales; the Social Phobia Scale (SPS) and the Social Interaction Anxiety Scale (SIAS). Therefore, two separate analyses were required. For both analyses, in the first step, childhood trauma (TADS) was entered as a predictor variable. In the second step the centrality of a shameful memory/event (CES), the traumatic impact from this event/memory (IES-R), and internal (ISS) and external (OAS) shame regarding psychosis were entered as the main effects of the moderator variables. In the third step, the interaction between developmental trauma and the moderator variables were entered. All of the variables were centred to reduce the impact of multiple co-linearity. In addition, asymptotic probability estimates are supplemented with bias corrected accelerated (BCa) bootstrap estimates of the regression parameters and their associated 95% confidence intervals. The results of this analysis are presented in Table 5 and 6 below.

Table 5: Regression model with Social Phobia as dependent variable

Model		***B***	***Bootstrap (based on 5000 samples)***				
			Bias	**Std. Error**	**Sig. (2-tailed)**	**BCa 95% Confidence Interval**	
						Lower	**Upper**
Step 1							
R^2*Change = 0.282* $F_{1,41}$ *= 16.125 P<0.000*	(constant)	.045	.129	3.449	.993	-6.609	6.922
	TADS	.667	.007	.184	.001	.273	1.017
Step 2 R^2 *Change = 0.299* $F_{1,37}$ *= 6.587 P<0.000*	(constant)	.010	.061	2.790	.997	-5.561	5.671
	TADS	.097	-.008	.233	.677	-.361	.497
	CES	.466	-.005	.350	.195	-.254	1.113
	IES-R	.130	-.035	.280	.651	-.342	.594
	ISS	.162	.002	.231	.462	-291	.677
	OAS	.464	.041	.310	.153	-.144	1.175
Step 3 R^2 *Change = 0.020* $F_{1,33}$ *= .417 P=0.795*	(constant)	-.096	.286	3.391	.980	-6.969	7.594
	TADS	-.342	-.224	1.239	.763	-2.631	1.297
	CES	.325	-.684	1.682	.843	-2.329	1.516
	IES-R	-225	.465	1.241	.816	-3.335	4.704
	ISS	-.386	.253	1.097	.705	-2.571	3.045
	OAS	1.421	-.283	1.472	.311	-1.704	3.571
	TADSxIESR	.004	-.008	.018	.809	-.025	.014
	TADSxCES	.003	.010	.026	.902	-.052	.096
	TADSxISS	.009	-.004	.020	.623	-.028	.035
	TADSxOAS	-.013	.005	.022	.482	-.049	.048

Note. TADS = Trauma and Distress Scale; CES = Centrality of Event Scale; IES-R = Impact of Event Scale-Revised; ISS = Internal Shame Scale; OAS = Other as Shamer Scale; PC = Paranoia Checklist; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale

At step 1 of the hierarchical regression for the SPS there was a significant relationship between childhood trauma and social phobia (β=0.667, CI 0.273 to 1.017), which accounted for approximately 28% of the variation on the Social Phobia Scale (SPS) ($F_{1,41}$=16.125, p < 0.001). In the second step, the main effects of the moderator variables added a further 30% explained variance ($F_{1,37}$=6.587, p< 0.001). Finally, the interaction between the moderator variables and childhood trauma failed to provide a significant effect. None of the individual interactions proved to have a significant moderation effect. Again, estimation of the unique contribution of the moderators is confounded by multiple co-linearity between these variables.

Table 6. Regression model with Social Interaction Anxiety as dependent variable

Model		***B***	***Bootstrap (based on 5000 samples)***				
			Bias	**Std. Error**	**Sig. (2-tailed)**	**BCa 95% Confidence Interval**	
						Lower	**Upper**
Step 1							
R^2 Change = 0.436	(constant)	-.700	.101	2.258	.761	-5.072	3.890
$F_{1,42}$ = 32.532	TADS	.636	.003	.111	.000	.401	.869
P<0.000							
Step 2	(constant)	-.479	.071	1.904	.795	-4.327	3.559
R^2 Change = 0.242	TADS	.272	-.001	.136	.053	-.005	.553
$F_{1,38}$ =7.134	CES	.303	.001	.238	.222	-.169	.763
P<0.000	IES-R	.169	-.017	.156	.283	-.082	.399
	ISS	-.006	-.006	.164	.969	-.273	.276
	OAS	.358	.015	.212	.104	-.151	.856
Step 3	(constant)	-.534	.057	2.044	.782	-4.780	3.735
R^2 Change = 0.038	TADS	-.188	-.057	.714	.774	-1.546	1.046
$F_{1,34}$ = 1.154	CES	.375	-.236	.965	.688	-1.324	1.527
P<0.348	IES-R	-.508	.205	.673	.333	-1.642	1.832
	ISS	-.439	.053	.588	.392	-1.550	.960
	OAS	1.068	-.048	.735	.110	-.287	2.325
	TADSxIESR	.009	-.003	.009	.255	-.010	.016
	TADSxCES	.000	.003	.015	.980	-.032	.045
	TADSxISS	.007	-.001	.010	.418	-.012	.023
	TADSxOAS	-.009	.001	.011	.331	-.033	.018

Note. TADS = Trauma and Distress Scale; CES = Centrality of Event Scale; IES-R = Impact of Event Scale-Revised; ISS = Internal Shame Scale; OAS = Other as Shamer Scale; PC = Paranoia Checklist; SPS = Social Phobia Scale; SIAS = Social Interaction Anxiety Scale

At step 1 of the hierarchical regression for the SIAS there was a significant relationship between childhood trauma and social anxiety (β=0.636, CI 0.401 to .869), which accounted for approximately 44% of the variation on the Social Anxiety Interaction Scale (SIAS) ($F_{1,42}$=32,532, $p < 0.001$). In the second step, the main effects of the moderator variables added a further 24% explained variance ($F_{1,38}$=7.134, $p< 0.001$). In the third step, the interaction between the moderator variables and developmental trauma failed to provide a significant effect. None of the individual interactions had a significant moderation effect. As with the other analysis, estimation of the unique contribution of the moderators is confounded by multiple co-linearity between these variables.

4. Discussion

The current study has supported a salient role for shame in both paranoia and social anxiety in a first episode of psychosis population recovering from an acute phase of their mental illness. However, distinct pathways of internal and external shame to social anxiety and paranoia respectively have only been partially supported. It appears that external shame may be a stronger predictor of both these outcomes. This study has also shown a strong correlation between childhood trauma and current levels of paranoia and social anxiety. Our analysis suggested that both shame proneness and shame associated with psychosis predict a significant amount of variance in the relationship between childhood trauma and paranoia and social anxiety, but no single measure emerged as a significant moderator of this relationship except for a small effect from internal shame interacting with childhood trauma. A standout feature of the analysis is the high rate of clinically significant social anxiety in the sample (45%).

4.1 Childhood trauma and shame in people with psychosis

The first hypothesis explored whether childhood trauma would be positively correlated with shame proneness, as measured by centrality of shameful memories and the traumatic impact of these shameful events. Our study found that childhood trauma was positively correlated with both the centrality of shame memories and their traumatic impact. This is similar to the relationship found between the Early Life Experiences Scale, which focuses on memories of personal feelings as opposed to specific experiences (ELES; Gilbert, Cheung, Grandfield, Campey & Irons, 2003) and the IES-R by Pinto-Gouveia & colleagues (2012) in a non-clinical population.

It was explored whether childhood trauma would be linked with both internal and external shame associated with psychosis. Our results indicated childhood trauma was strongly correlated with internal shame associated with psychosis and external shame associated with psychosis. These results appear to be in the same direction yet even stronger than previous findings that look at childhood adversity and internal and external shame, where Pinto-Gouveia et al (2012) found a correlation between external shame and internal shame and the ELES in a general population sample. This would appear to be consistent with the Gilbert model of shame (2002) that indicates greater childhood difficulties will be associated with the formation of external and internal shame.

These findings follow previous research in identifying childhood adversity as making individuals vulnerable to shame proneness and shameful appraisals of their psychosis (Connor & Birchwood, 2012). This is pertinent amongst people with psychosis due to the high level of childhood adversity reported from previous studies (Read, van Os, Morrison & Ross, 2005).

The results show that the centrality of shame memories (CES) is correlated with both internal and external shame associated with psychosis. This suggests that shaming developmental events that we rate as close to our identity will impact on how the onset of a psychotic illness is appraised. However, there is also the possibility that due to this being a cross sectional study, higher rates of shame associated with psychosis (Birchwood et al., 2006; Turner et al., 2013) may have primed participants to rate previous life events as shaming and rate their current traumatic impact as high. Also high rates of social anxiety and paranoia may increase the general sense of threat and influence retrospective reports of shame events. This is the first identification of the link between centrality of shaming memories prior to the onset of the psychosis and the shame associated with psychosis found in a clinical sample to our knowledge.

In the current study, the traumatic impact of shame memories (IES-R) was strongly correlated with both internal and external shame. Amongst people with psychosis, the traumatic impact of events in relation to having psychosis was also found to be associated with internal shame and external shame (Turner et al, 2013). It would appear that if memories of earlier life events are recalled as more shameful and traumatising, an individual is increasingly prone to make a shameful appraisal of their psychosis. This is seemingly the first association of this specific pattern measured in a psychosis population.

4.2 Childhood trauma, paranoia and social anxiety in people with psychosis

The second hypothesis sought to explore the relationship between childhood trauma and paranoia in addition to social anxiety. The results found that childhood trauma was positively correlated with paranoia, social phobia and social anxiety. This finding indicates a significant role for hostile developmental experiences on the level of paranoia reported, in addition to social anxiety which is prevalent amongst people with psychosis (45% in this sample). The association between early life difficulties and paranoia is one that has been previously established (Janssen, Krabbendam, Bak, Hanssen, Vooebegh, de Graaf & van Os, 2004). This

finding supports the perspective of Freeman & colleagues (2008) that social anxiety and paranoia share vulnerability pathways.

4.3 Shame proneness relationship with paranoia and social anxiety

It was hypothesised that shame proneness would be positively correlated with both paranoia and social anxiety. It was found that the centrality of shame memories was positively associated with paranoia, social phobia (SPS), and social anxiety (SIAS). This replicates the findings of Matos and colleagues (2013) who found that centralised shame memories were associated with paranoia and social anxiety in a non-clinical population. Pinto-Gouveia, Castilho, Matos & Xavier (2013) found that the CES was also linked to paranoia. This would indicate that if someone reports that a past experience has been shameful and close to their identity they will be more paranoid and socially anxious. The current study is the first one to find a link between centralised shame memories to paranoia and social anxiety in a psychosis population.

In addition, the traumatic impact of shame memories (IES-R) was positively correlated with paranoia, social phobia and social anxiety. The IES-R was previously found to be positively correlated with paranoia in a non-clinical population (Pinto-Gouveia et al., 2012). It would appear that the greater the severity of this traumatic memory, the more paranoid an individual feels here and now, and the more anxious they feel around others. This appears to be the first study to establish a link between current traumatic impact of developmental shameful memories and paranoia and social anxiety in a psychosis population. This relationship between higher shame proneness appears to be compatible with Gumley, Braehler, Laithwaite, MacBeth & Gilbert et al.,'s (2010) formulation of psychosis, where toxic interpersonal developmental experiences are remembered as threatening, therefore contaminating current interactions with others.

4.4 Shame associated with psychosis relation to paranoia and social anxiety

Consistent with predictions, there were positive and strong correlations between external shame and paranoia, social phobia and social anxiety. External shame and paranoia and social anxiety has been correlated previously in a non-clinical sample (Matos et al., 2013).There were also positive correlations between internal shame and paranoia, social phobia and social anxiety. This is consistent with previous research that found a link between paranoia and internal shame, however this was also in a general public sample (Pinto-Gouveia et al., 2012).

The issue of external shame and internal shame appears to be one that lacks empirical clarity in the research literature to date. Conceptually it is suggested that external shame is more related to paranoia, due to beliefs about existing negatively in the minds of others, whereas internal shame is more related to social anxiety due to its self-critical nature and feelings of inadequacy (Matos et al., 2013; Gilbert, 2002). It has also been noted that both types of shame are highly related due to potentially coming from a similar source, however can be best distinguished from each other by exploring their relationships with different emotional dysfunctional outcomes (Goss et al., 1994; Turner et al., 2013). This would appear to address issues of co-linearity of these two measures which have typically share high variance (r=.81; Goss et al., 1994).

There are a number of findings that suggest both play an important role in both social anxiety and paranoia. Previous results indicate that external shame is a better independent predictor of paranoia over internal shame in a non-clinical population (Pinto-Gouveia et al., 2012). However, internal shame as measured by "hated self" in the Forms and Functions of Self-criticising and Reassuring Scale (Gilbert et al., 2004) has been previously linked to paranoia in a student population and clinical populations (Mills, Gilbert, Bellew, McEwan & Gale, 2007; Hutton, Kelly, Lowens, Taylor & Tai, 2013).

As a result of the apparent disparity in the current literature, we carried out three regression analysis' to investigate whether Matos et al's., (2013) findings were applicable to a clinical population. Internal and external shame associated with psychosis were the independent predictor variables in each regression. In all three regressions, external shame emerged as a stronger predictor over social anxiety. Thus, within this study it appears that external shame is a stronger predictor of both paranoia and social anxiety. This partially supports Matos' model in that external shame predicts paranoia, however it also predicts social anxiety better than internal shame. Matos et al., (2013) utilised the Experience of Shame Scale (ESS) as a measure of internal shame, but another paper found the ESS to be more closely link to external shame than another commonly used internal shame measure (ISS) (Turner et al., 2013). The ESS includes items that measure external shame as well as internal shame, which may explain this finding.

In addition, an association between paranoia and the ESS has been found within a group of people who are at high risk of developing a psychosis (Johnson et al., in press). There was also a high correlation noticed between paranoia and both social anxiety measures,

which may partially explain why separate pathways have not been noted in this sample; Matos et al., (2013) noticed a weaker correlation between these two constructs (r=.40, p<.01). Gilbert, Boxall, Cheung, & Irons, (2005) found a moderate relationship between the Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS) and a paranoia, and suggested that social anxiety may be a milder form of paranoid anxiety.

The regression results were consistent with previous findings that show first episode psychosis participants who have a diagnosis of social anxiety disorder report significantly higher amounts of external shame than those with psychosis but without social anxiety disorder (Birchwood, Trower, Brunet, Gilbert, Iqbal & Jackson, 2006; Michail & Birchwood, 2012). Added to this they also report feeling more ashamed of their illness, than those with a psychosis but without a social anxiety diagnosis. This led to the conclusion that the high amount of social anxiety seen in people with psychosis was not associated with a symptom of psychosis, but more related to the (shameful) appraisal of having the psychosis.

4.5 Is the relationship between childhood trauma and paranoia and social anxiety moderated by shame proneness and shame associated with psychosis?

The final hypothesis explored the potential moderating effect of shame proneness and shame associated with psychosis on the relationship between childhood adversity with paranoia and social anxiety. This analysis indicated that 47% of variance in paranoia was explained by childhood trauma. In addition, shame proneness and shame in relation to psychosis combined to explain a further 19% of variance. When all of the shame variables' interactions with childhood trauma were considered, it added an additional 9% shared variance. The only single interaction that was significant was childhood trauma and internal shame associated with psychosis, which explained a 4% variance. However, the interaction between childhood trauma and the traumatic impact of shame memories approached significance. This would indicate that childhood trauma plays a central role in the development/experience of paranoia, explaining almost half of its variance which is consistent with previous findings (Janssen, Krabbendam, Bak, Hanssen, Vooebegh, de Graaf & van Os, 2004; Bentall, Wickham, Shevlin & Varese, 2012). The other predictor variables on their own and interacting with childhood trauma explained another 28% variance. This may indicate that despite co-variance between the constructs being measured, they are pertinent enough to explain over a quarter of the outcome seen in paranoia. The significance of internal shame interacting with childhood trauma is an interesting result, but accounts for

only 4% of paranoia score variance. This may be explained by the development of self-hatred through internalising criticism and hostility from others during childhood (Irons, Gilbert, Baldwin, Baccus & Palmer, 2006).

Childhood trauma has been shown to explain 28% of variance in social phobia and 44% of variance in social anxiety. When all other shame variables were added, they predicted a further 24% of social phobia and 28% of social anxiety. That childhood adversity appears to be more predictive of paranoia over social anxiety and in particular social phobia is an interesting finding and is consistent with Matos' (2013) model, in that paranoia should be linked to worse developmental history. However, no significant predictive relationship was found for any individual shame variable and social anxiety.

These findings highlight several key issues in relation to understanding the role of shame in paranoia and social anxiety, in addition to potential concerns around co-linearity of measurements. Previous research has been able to display specific and separate pathways whereby external and internal shame have been found to independently predict differing outcomes (Goss et al., 1994; Turner et al., 2013). As a pertinent illustration, external shame emerges as a partial mediator in the relationship between childhood adversity and paranoia over internal shame (Pinto-Gouveia et al., 2012; Matos et al., 2013). Similarly, internalised self-criticism akin to internal shame was found to not mediate the relationship of centrality of shame memories to paranoia (Pinto-Gouveia et al., 2013).

Previous findings have shown internal shame to be a strong predictor of social anxiety, even when centrality of events and external shame are accounted for (Matos et al., 2013). However, as previously mentioned this study used an internal shame measure (ESS) that may not be entirely consistent with internal shame. Matos et al., (2013) acknowledged this limitation and suggested that the ISS be used in future research. However, in our study it is possible that all shame measures are displaying high levels of co-linearity. This could contribute to the explanation of why no one particular shame measure is emerging as a significant moderator of childhood trauma and paranoia or social anxiety. This indicates that other underlying factors may be influential in explaining the strength of this link. Childhood trauma may be an important difference between who develops psychosis and who does not (Read et al., 2005). Research indicates that people with psychosis are 2.72 times more likely to have experienced childhood trauma than controls without psychosis (Varese et al., 2012). Moreover, it has different types of childhood adversity have been implicated in specific

psychotic experiences (Bentall et al., 2014); attachment disrupting events have been particularly associated with paranoia.

It may be useful to consider recent developments on neuroscience here on what impact childhood trauma appears to have on biological development. Recently it has been shown that damage can occur with people who have been abused as children, in their stress regulation mechanism of the hypothalamic-pituitary-adrenal (HPA) axis. This is presumed to occur due to high levels of the stress hormone cortisol being released, and has been identified as a marker for future psychopathology (Heim et al., 2000). This process has even been shown to develop through prenatal stress on the mother (Huiznick, Mulder & Buitelaar, 2004). Such a finding may be related to how shame is felt, but also indicate how an automatic stress response to interpersonal interactions may be prevalent amongst people who have had damaging early experiences in these contexts. Consistent with this, despite the potential issue around co-linearity, the moderation analysis indicated that shame, be it proneness or shame associated with psychosis, played a significant role in explaining variance with paranoia and social anxiety.

This potentially thought provoking finding strongly endorses how big an impact shame plays amongst distressing issues that are among the most commonly presented to mental health services.

5. Implications

The findings of the current study have important clinical implications as they highlight that shame is an important variable in both paranoia and social anxiety. Our results suggest that childhood adversity is associated strongly with both shame proneness and shame associated with psychosis, which may be vital in making sense of an individual's adjustment to a psychotic illness. In addition, we have found that childhood adversity explains a large variance in both paranoia and social anxiety seen in our sample. The current study appears to show that external shame, existing negatively in the minds of others, is a stronger predictor of both paranoia and social anxiety, than is internal shame, existing negatively in one's own mind.

Here we have identified two potentially influential pathways to emotional dysfunction in people with psychosis. The first is shame proneness that appears to develop from a young age and as a response to traumatic childhood experiences which may leave an individual prone to making shaming interpretations of negative life events, in particular ones so stigmatising as psychosis. This may contribute to the development and compounding of social fears such as those associated with social anxiety and paranoia. An integral part of shame is self-criticism and perceived judgement of self by others (Gilbert, 2002). Compassionate Mind Training (CMT) has been developed for people who are shame prone and who also find self-reassurance and self-soothing difficult if not threatening to instigate (Gilbert, 2009). It looks to foster and build on feelings of safety and soothing systems that may not have previously been activated during developmental stages of their life, in particular in a self-focused manner. A case series study of CMT with people who hear voices has provided some initial encouraging results (Mayhew & Gilbert, 2009). Also the first randomised trial of CMT has shown that it is an acceptable and feasible treatment (Laithwaite et al., 2009). Previous papers suggest that self-reassurance is associated with thematic content of voices (Connor & Birchwood, 2012), indicating this may be a helpful buffer for people with psychosis.

It also appears that shaming events lie close to the identity of the service users questioned here in addition to having traumatic characteristics. This may endorse treatments such as emotional disclosure following a psychosis (Bernard, Jackson & Jones, 2006) that may help to work with an individual's shame prone self-identity, reducing the traumatic impact of this.

The other pathway is a direct association between childhood adversity and social anxiety and paranoia that is unexplained by the shame measures used here. This adds further evidence towards the strong influence of early trauma or difficult attachment on current levels of social anxiety and paranoia (Michail & Birchwood, 2009; Bentall, Wickham, Shevlin & Varese, 2012). This finding is important for several reasons; first, it endorses proposals that childhood experiences should be key to assessment and formulation when working with people with a psychotic illness (Read et al, 2005),. This is essential, as disclosure of childhood abuse is unlikely unless asked about (Briere & Zaidi, 1989). Secondly, it emphasises the work needed to be done in identifying a psychological pathway from childhood adversity to current psychopathology. Neurodevelopmental advances have helped with exhibiting the potential damage of early adverse events, which leave individuals vulnerable to psychopathology (Read et al., 2005). This is possibly what shame measures may be identifying, however it will be important to continue mapping the psychological construct that may manifest from this occurrence.

Freeman et al (2002) has formulated a cognitive model of persecutory delusions where it is postulated that people prone to paranoia are attempting to make sense of "oddness" created by internal anomalies such as arousal, hallucinations and perceptual anomalies. It has found that the key component to differentiating paranoia and social anxiety reactions was that of anomalous experiences (Freeman et al., 2008). Thus, those who had more paranoid interpretations also had more anomalous interpretations. It has been noted that these anomalies may be trauma based reactions but an individual may confuse internal experiences and attribute them externally if they are not aware of their source (Read et al., 2005; Garety et al., 2001). This has been described as a "faulty monitoring source" and could be a factor in interpreting arousal and hallucinations to threatening external sources. Future studies may find it helpful to measure anomalies alongside trauma history, which may help to understand the strong relationship childhood adversity to social fears such as social anxiety and paranoia.

5.1 Limitations

The current study used a cross-sectional design where several limitations should be noted whilst interpreting the results. First, causation cannot be confidently inferred from the relationships noticed in the analysis done. However, where possible, parallels to previous

studies have been drawn that may help to identify emerging directions of causations. Second, this does not measure the stability of the constructs being measured, which may flux in relation to the stage of recovery that a service user is at.

The current study did not control for depression within the analysis. The relationship between shame, social anxiety and depression has been previously identified within the literature (Gilbert, 2000). Elevated depression has been noted in people with psychosis and social anxiety compared to those with just psychosis, also indicating shared developmental pathways (Michail & Birchwood, 2009). Additionally, the discreet distinction between these variables may not be helpful due to their high co-incidence (Shorter & Tyrer, 2003).

Utilising a first episode of psychosis sample may not be fully representative of people who have lived longer with a diagnosis of psychosis. In addition, a first episode in psychosis sample may have more intensive treatment and be at lower risk for an elongated duration of untreated psychosis, which has been associated with worse recovery prognosis (Skeate, Jackson, Birchwood & Jones, 2002). The number of participants involved in the study (n=45) may have made it difficult for a particular shame measure to emerge from the moderation analysis. Future research may benefit from increased numbers when testing for the impact of shame on the relationship between childhood trauma and social fears.

5.1.1 Measurement issue

The analysis of internal and external shame in relation to psychosis showed these two constructs were strongly correlated. This pattern has been noted in previous research (Goss et al., 1994; Turner et al., 2013), where it was also shown that both constructs are related to distinct emotional dysfunction. However, this may not fully satisfy co-linearity issues of these two measures. The multiple regression that looked at which shame measures significantly moderated the relationship between childhood trauma and paranoia and social anxiety showed that no one measure stood out from the others. This indicates that shame is relevant but the distinct measures of shame may not be. This could also be down to the low numbers involved in the study (N=45), considering the type of analysis that was being conducted.

5.2 Conclusion

The findings of this study support the notion that shaming developmental trauma is strongly linked to the high levels of paranoia and social anxiety seen in a first episode in psychosis group. It would appear this is the first study to examine this link within a clinical population in this depth. In addition, it suggests that childhood adversity leads individuals prone to shame which in turn is associated with making shame based appraisals of psychosis.

Finally, the study found that both shame proneness and shame associated with psychosis are associated with both paranoia and social anxiety. Compassionate Mind Training is an intervention with an increasing supportive evidence base (Gilbert, 2010) that may be most appropriate for these shame prone individuals.

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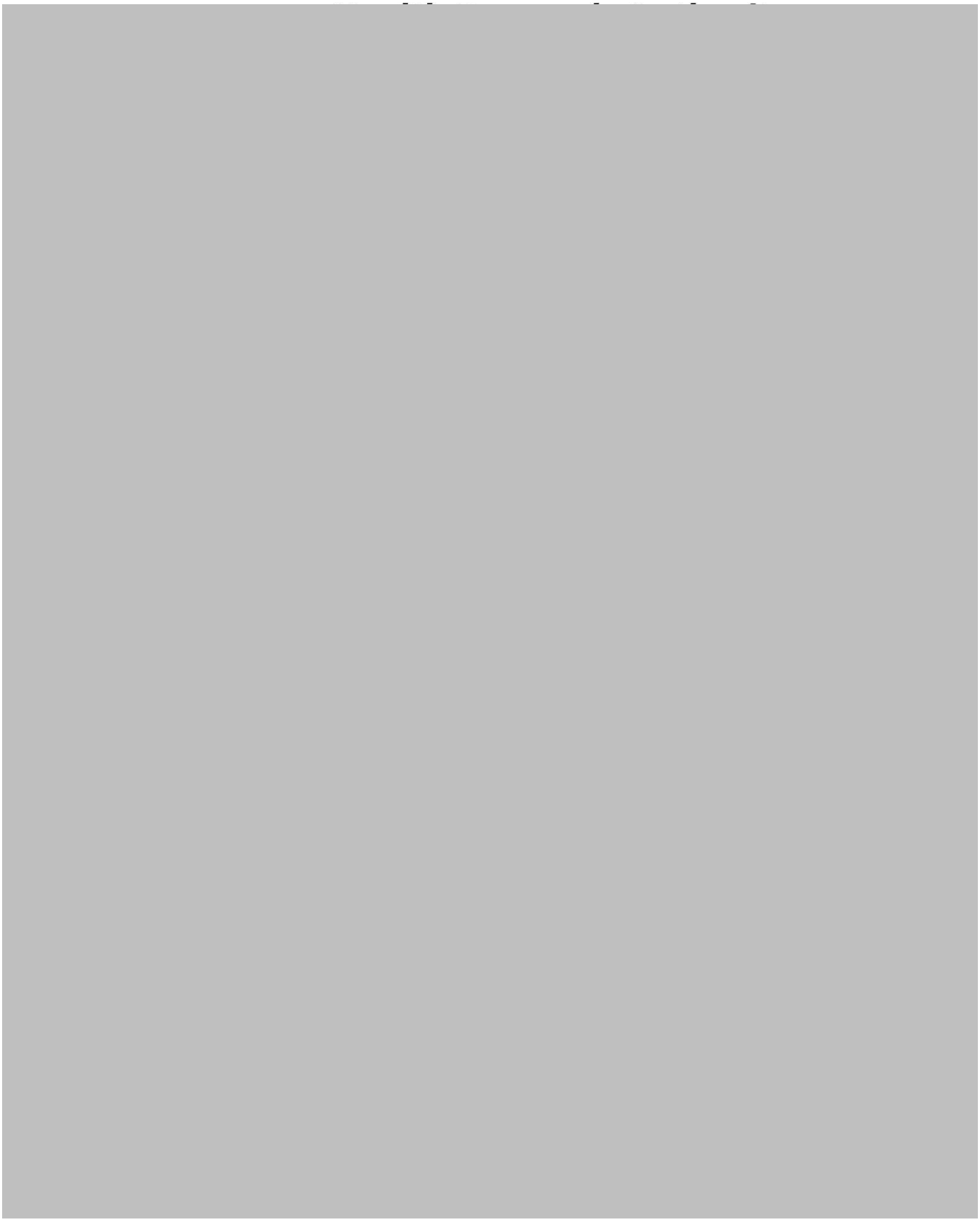
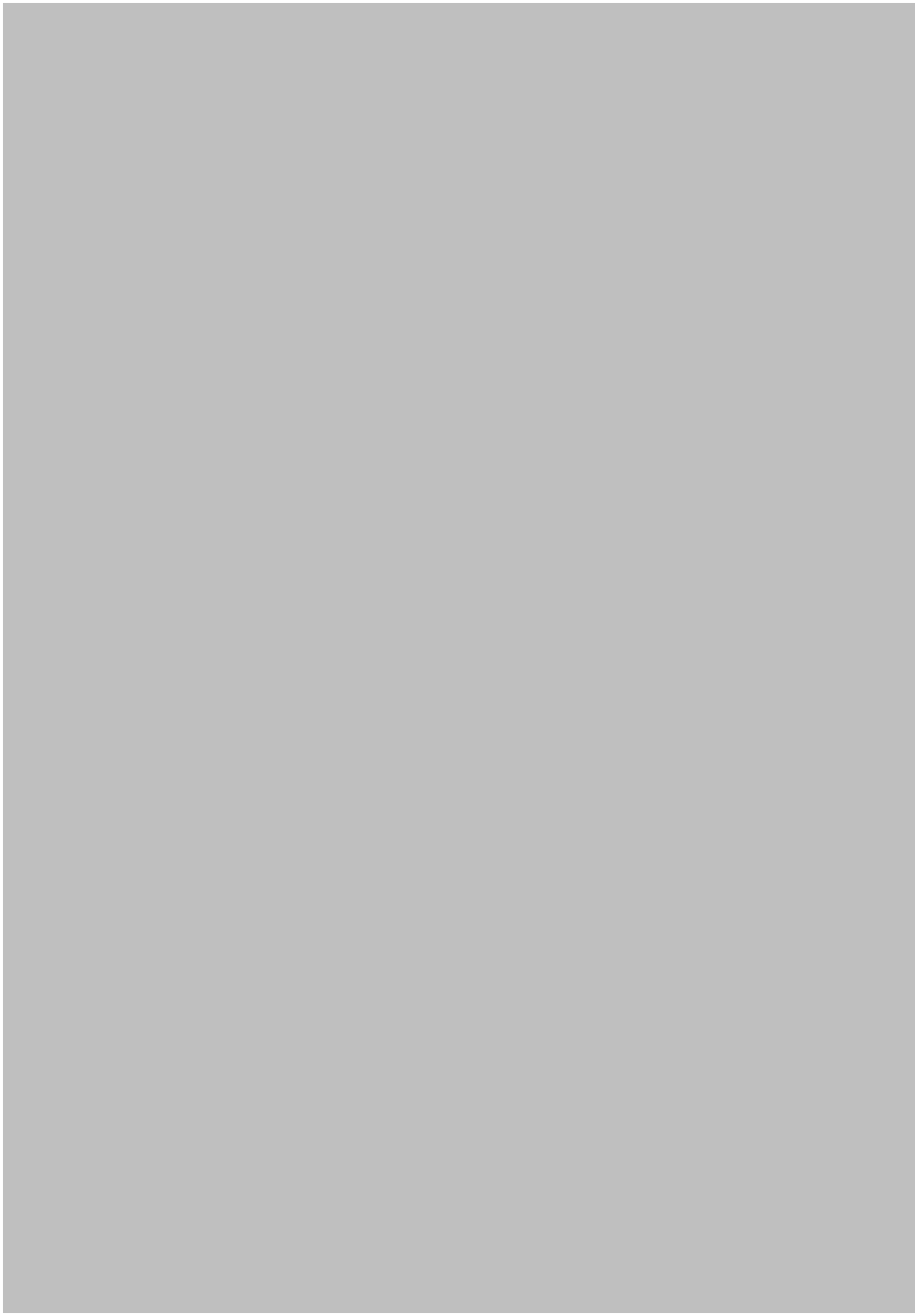
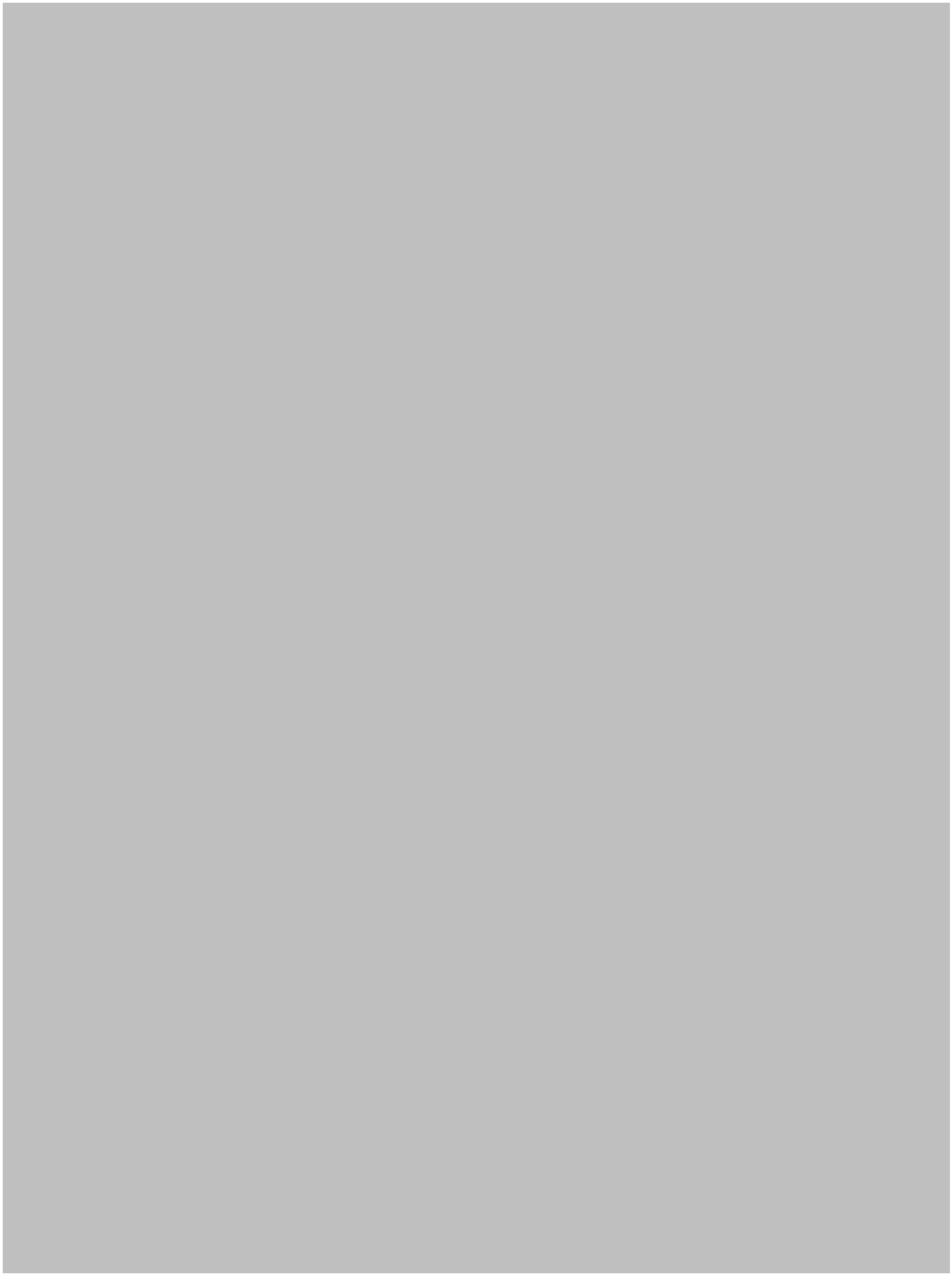
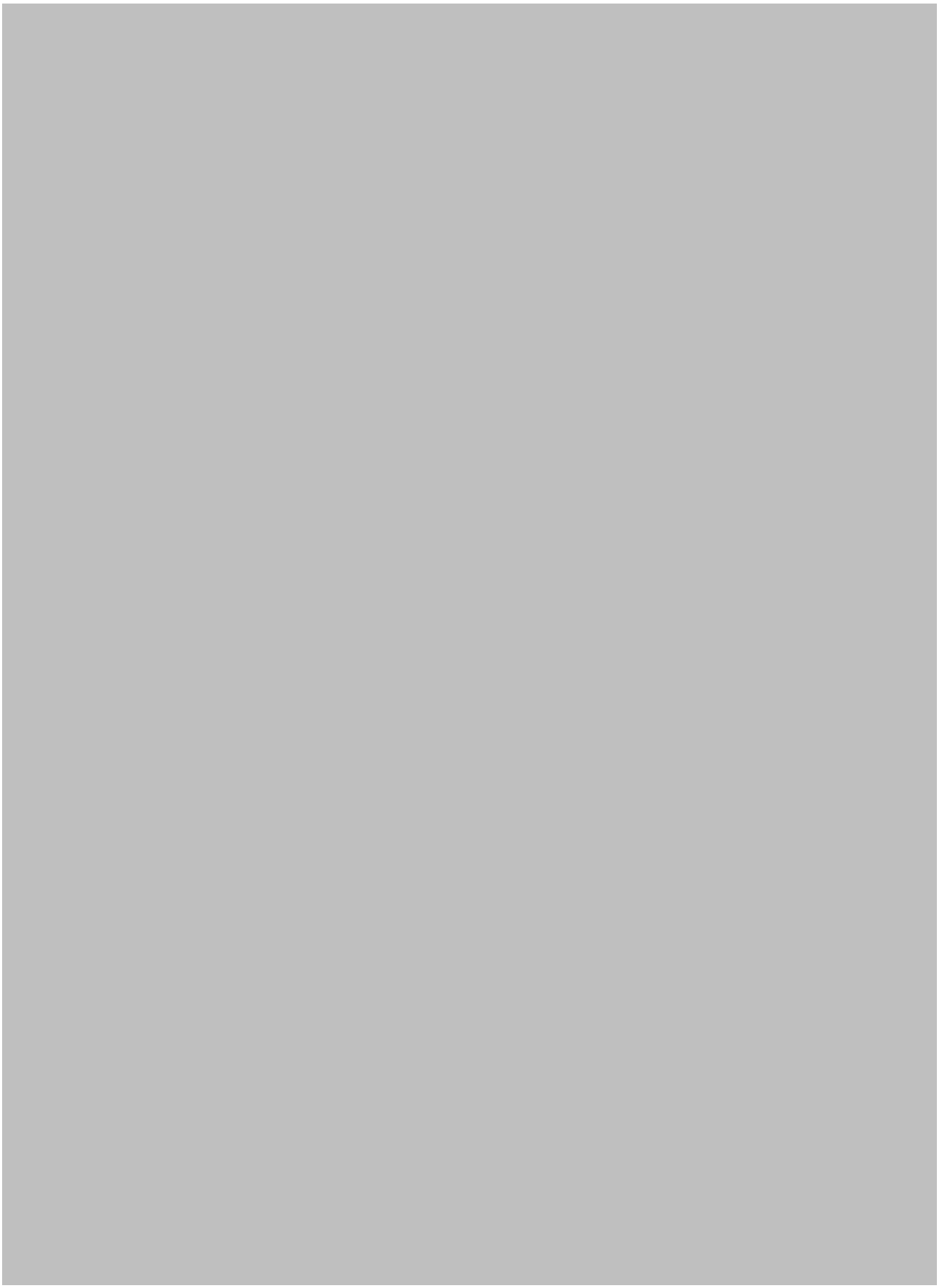
Appendix 1: Ethical Approval



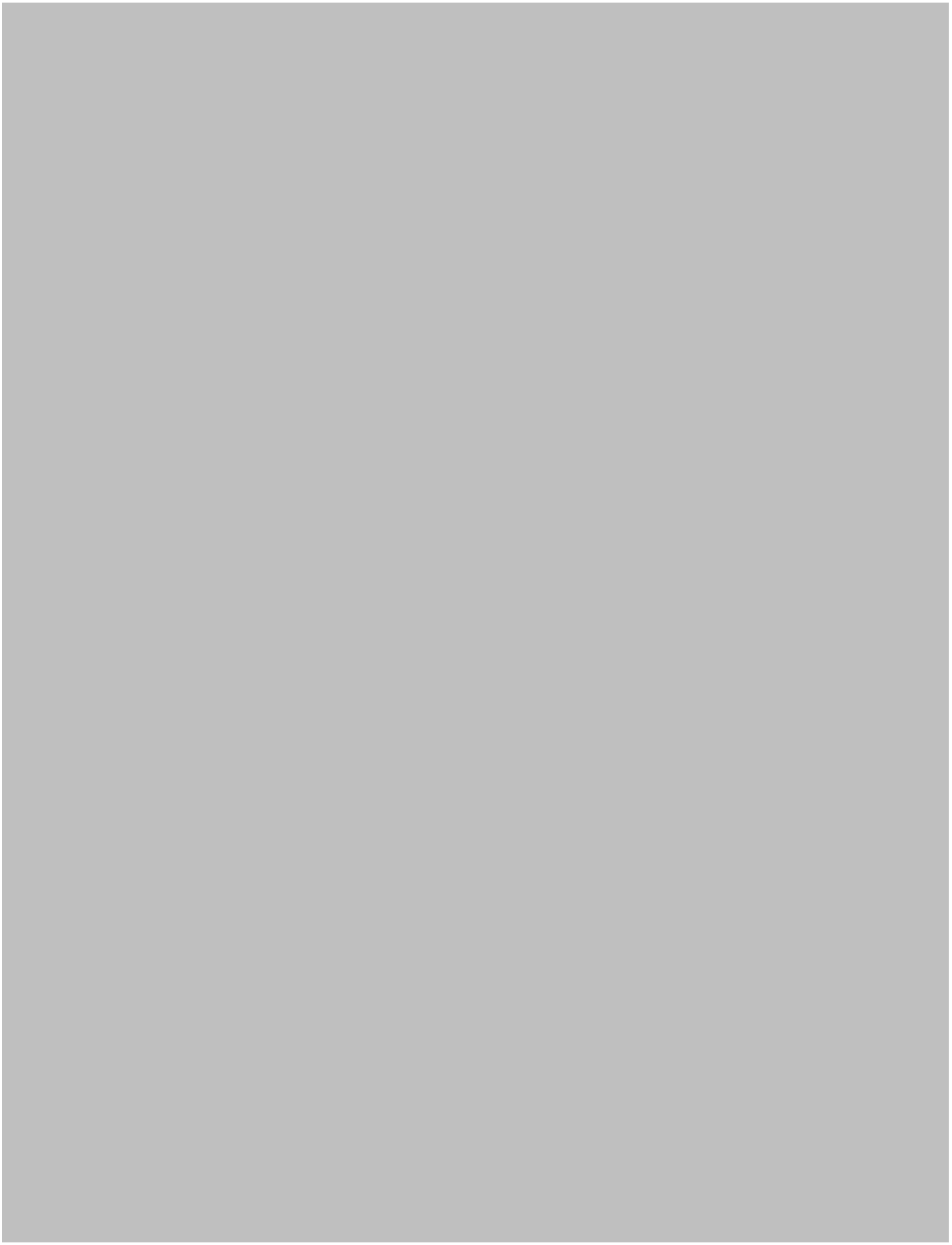






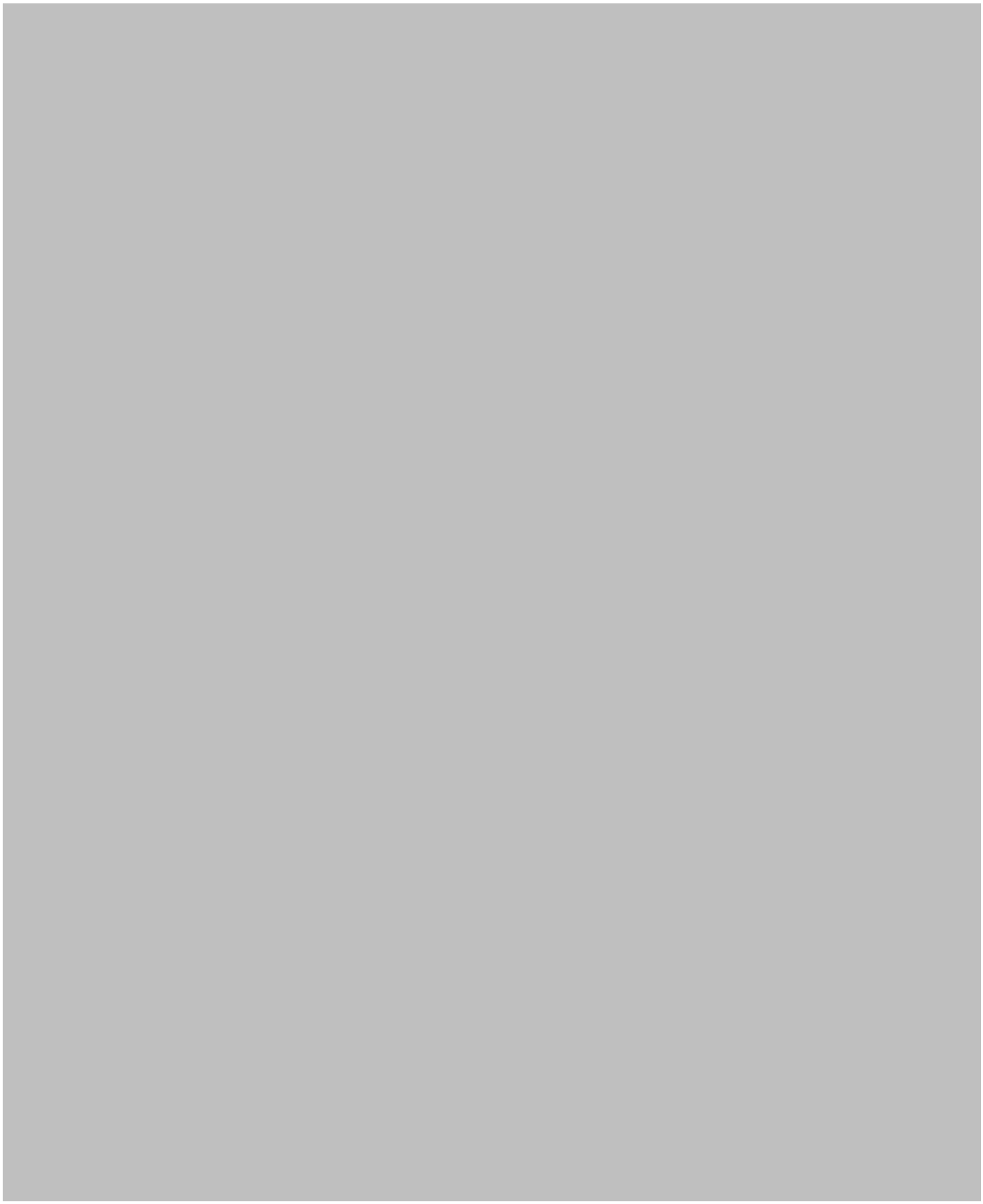
Appendix 2.1 Trauma and Distress Scale

TADS-EPOS



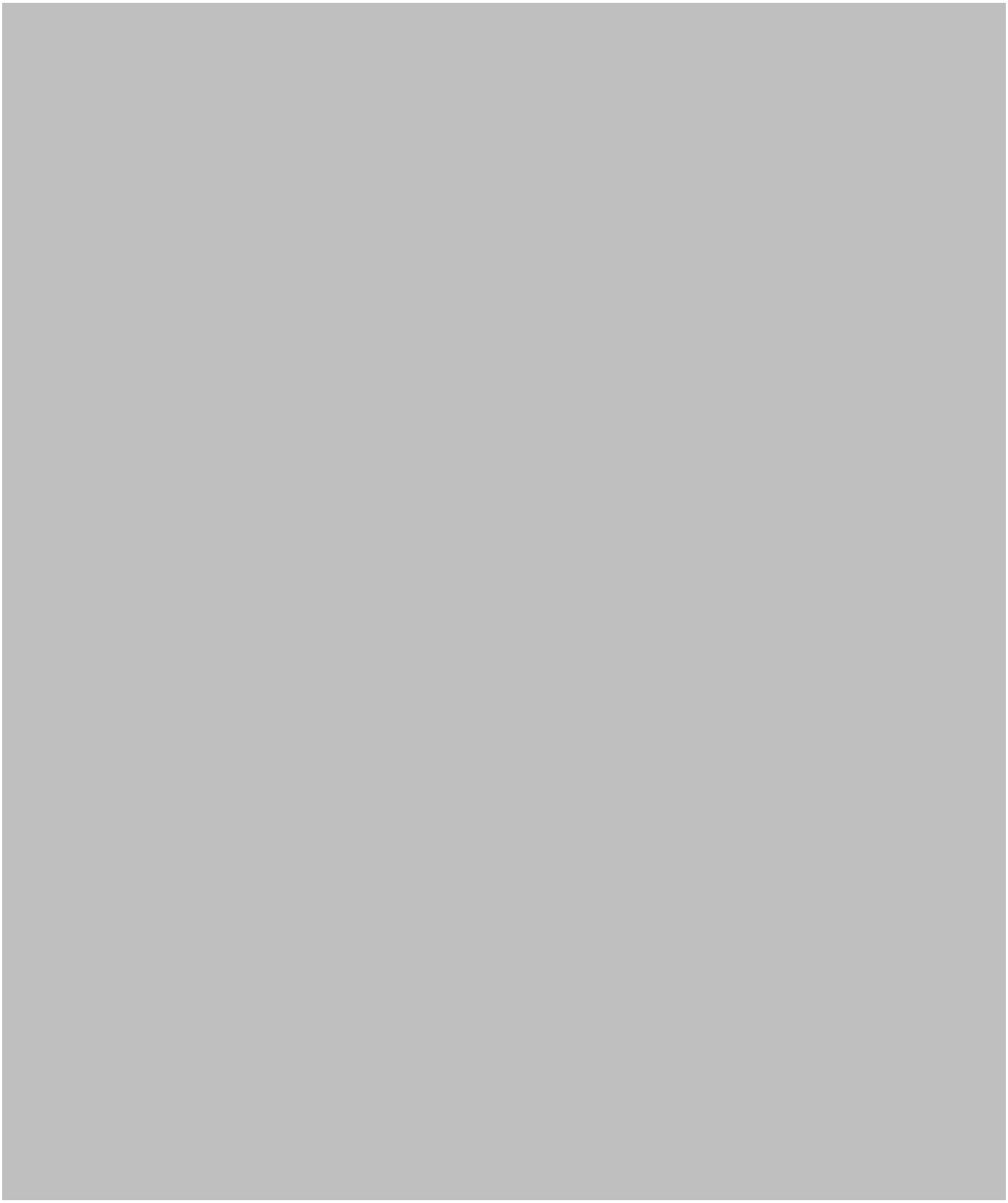
Appendix 2.2 Centrality of Events Scale

CES



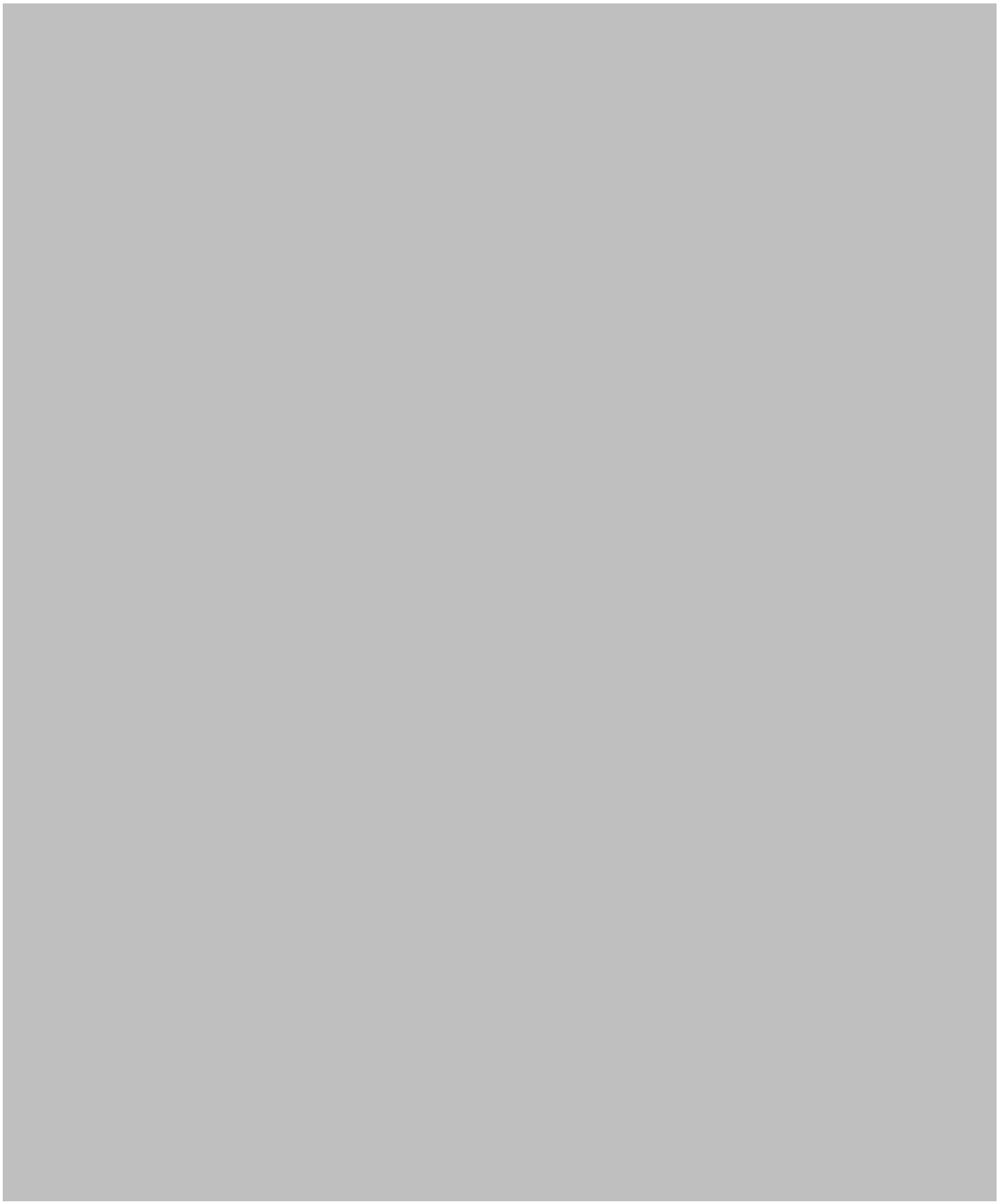
Appendix 2.3 Impact of Events Scale - Revised

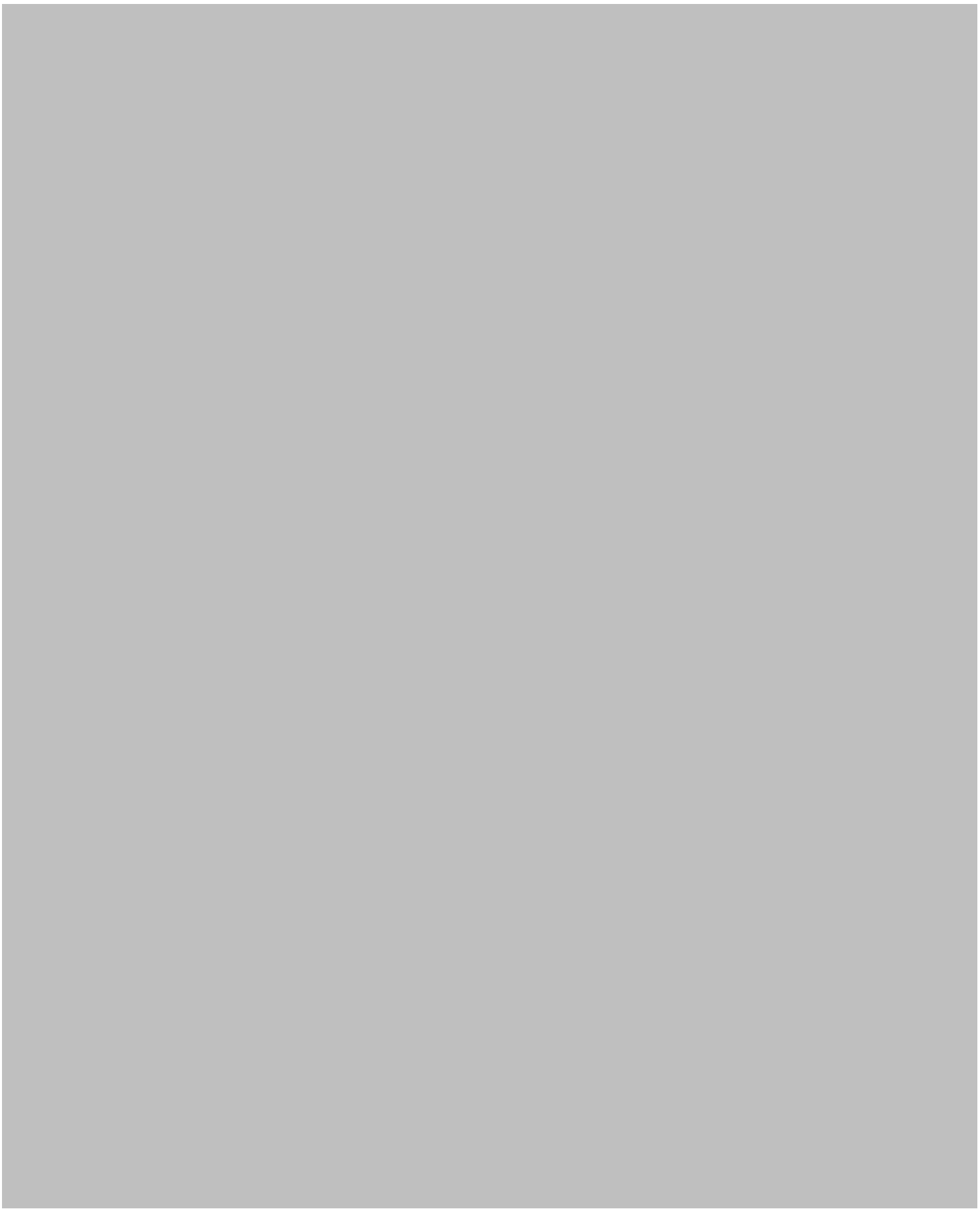
IES-R



Appendix 2.4 Internalised Shame Scale associated with psychosis

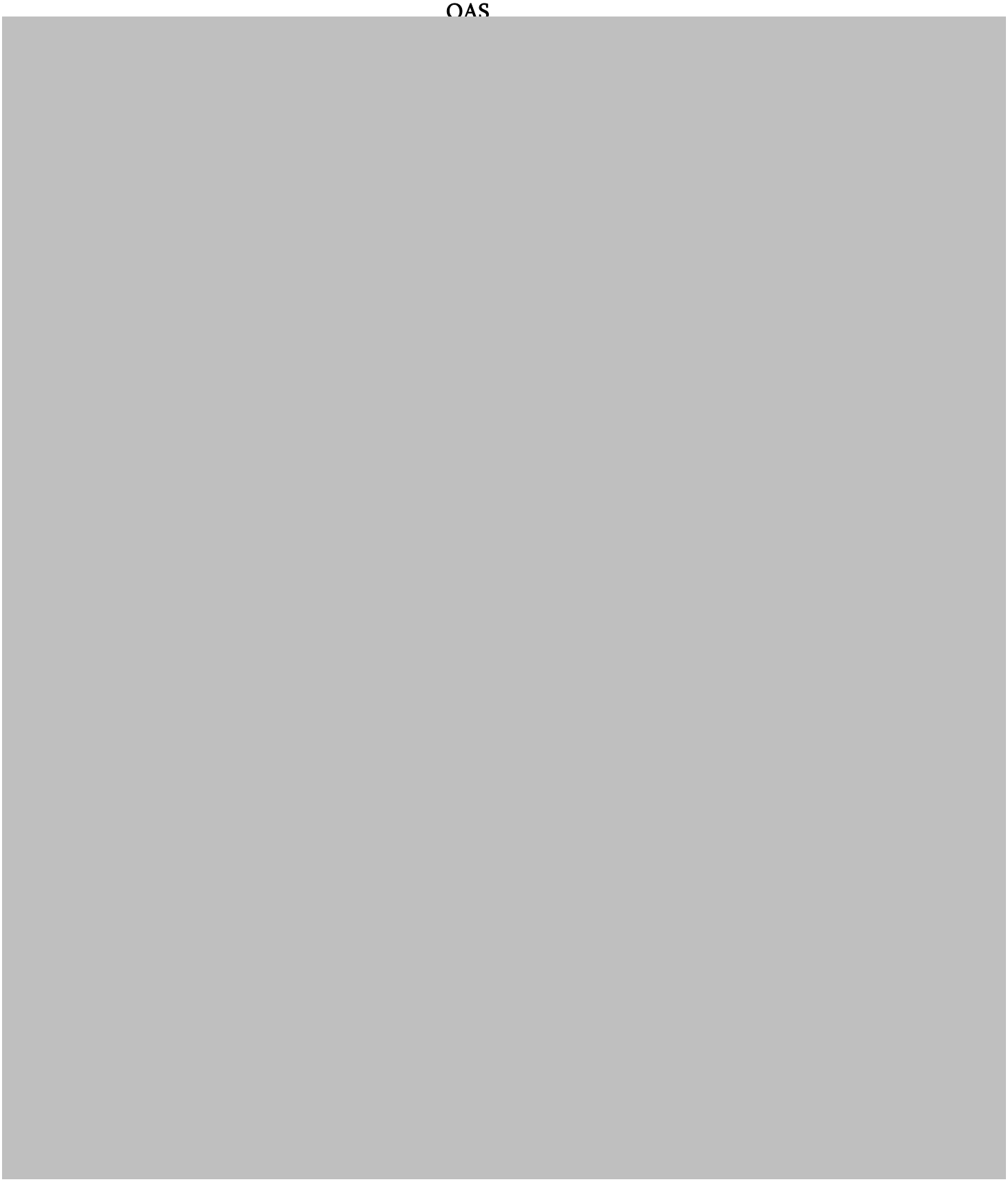
ISS





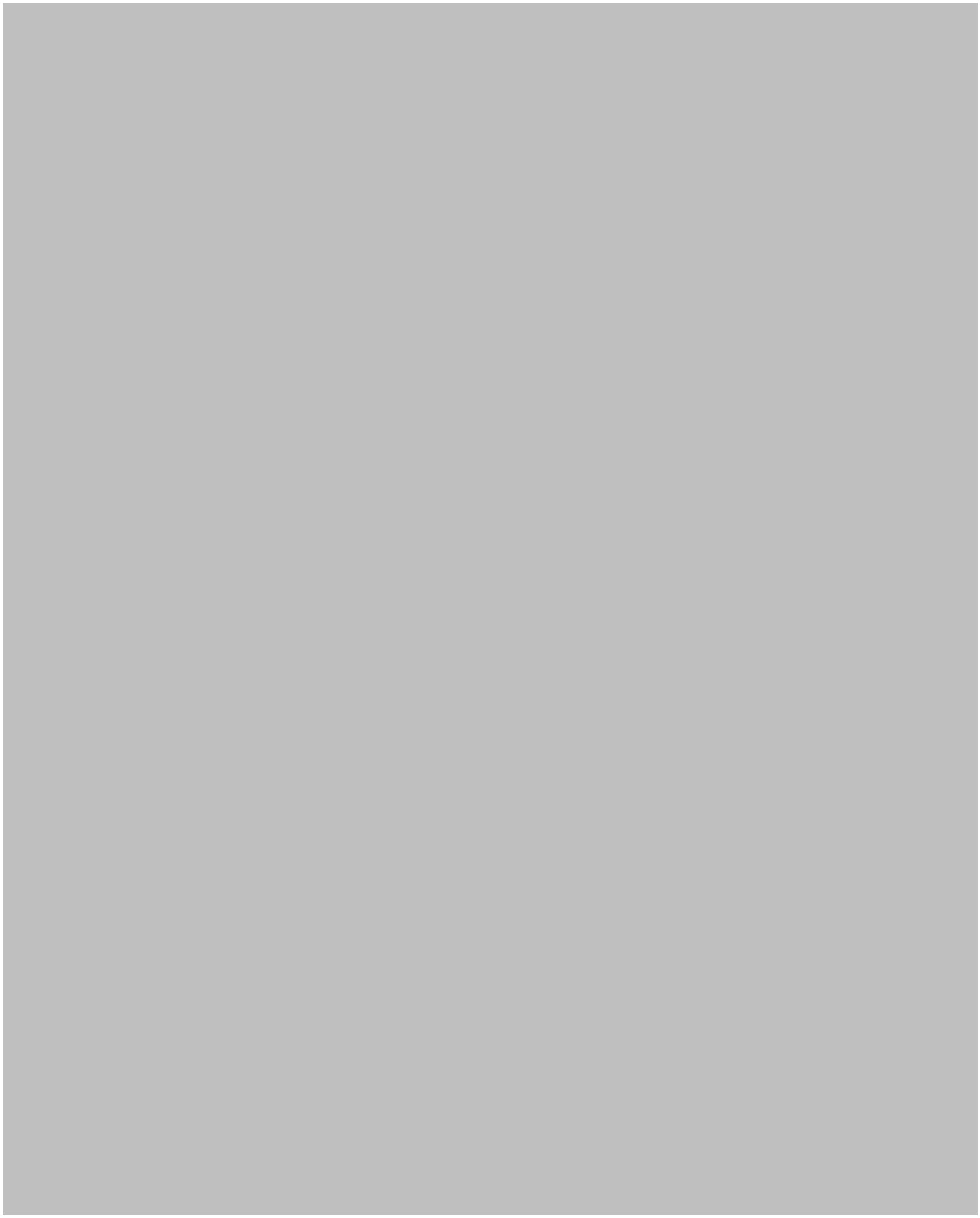
Appendix 2.5 Other as Shamer Scale associated with psychosis

OAS



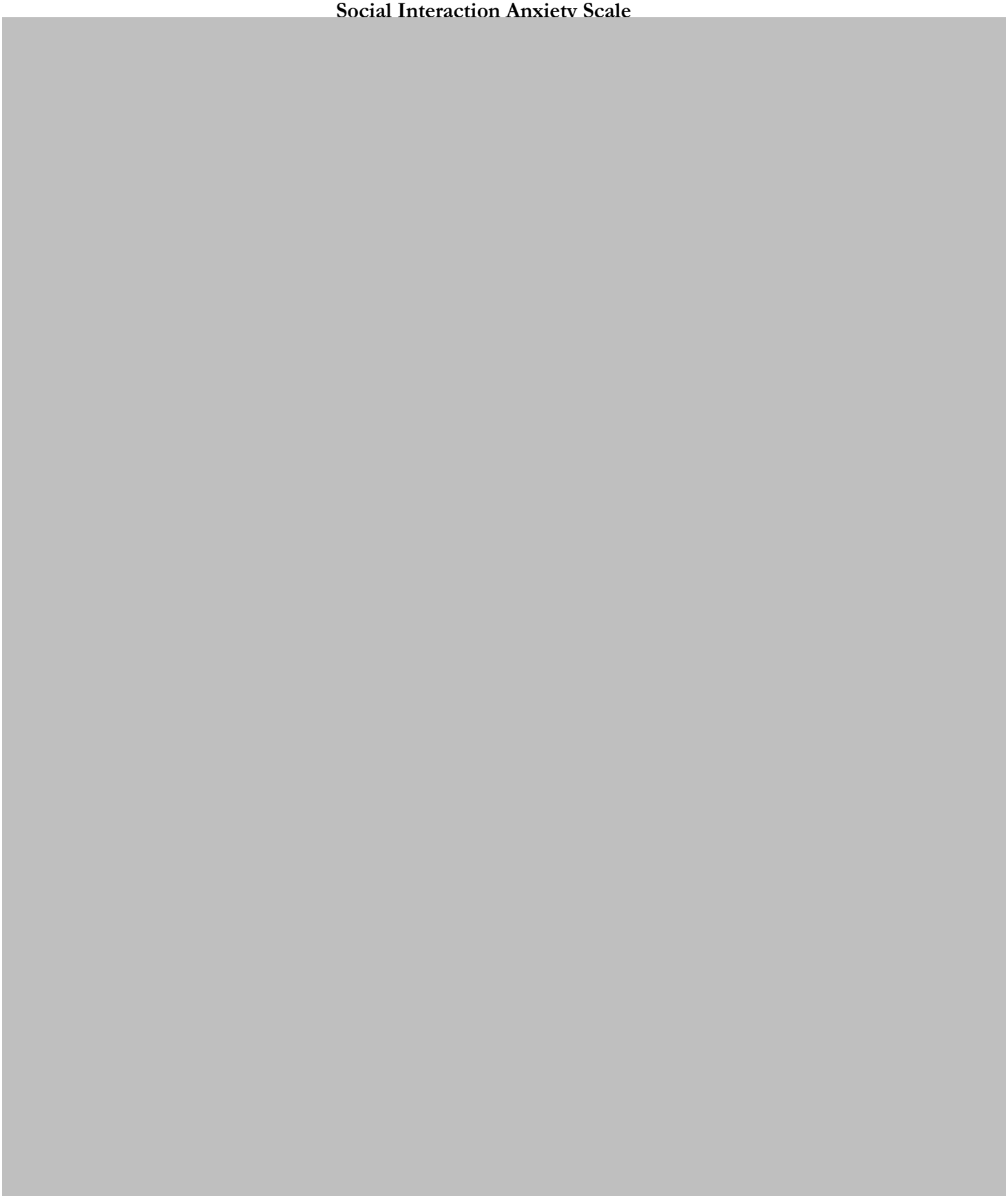
Appendix 2.6 Social Phobia Scale

SPS



Appendix 2.7 Social Interaction Anxiety Scale

Social Interaction Anxiety Scale



Appendix 2.8 Paranoia Checklist

Paranoia Checklist

	How often have you had the thought?				
1. I need to be on my guard against others No Yes (please circle)	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
2. There might be negative comments circulating about me No Yes (please circle)	How often have you had the thought?				
	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
3. People deliberately try to irritate me No Yes (please circle)	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
4. I might be being observed or followed No Yes (please circle)	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5

	How often have you had the thought?				
5. People are trying to make me upset No Yes (please circle)	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
6. People communicate about me in subtle ways No Yes (please circle)	How often have you had the thought?				
	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
7. Strangers and friends look at me critically No Yes (please circle)	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
8. People might be hostile towards me No Yes (please circle)	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5

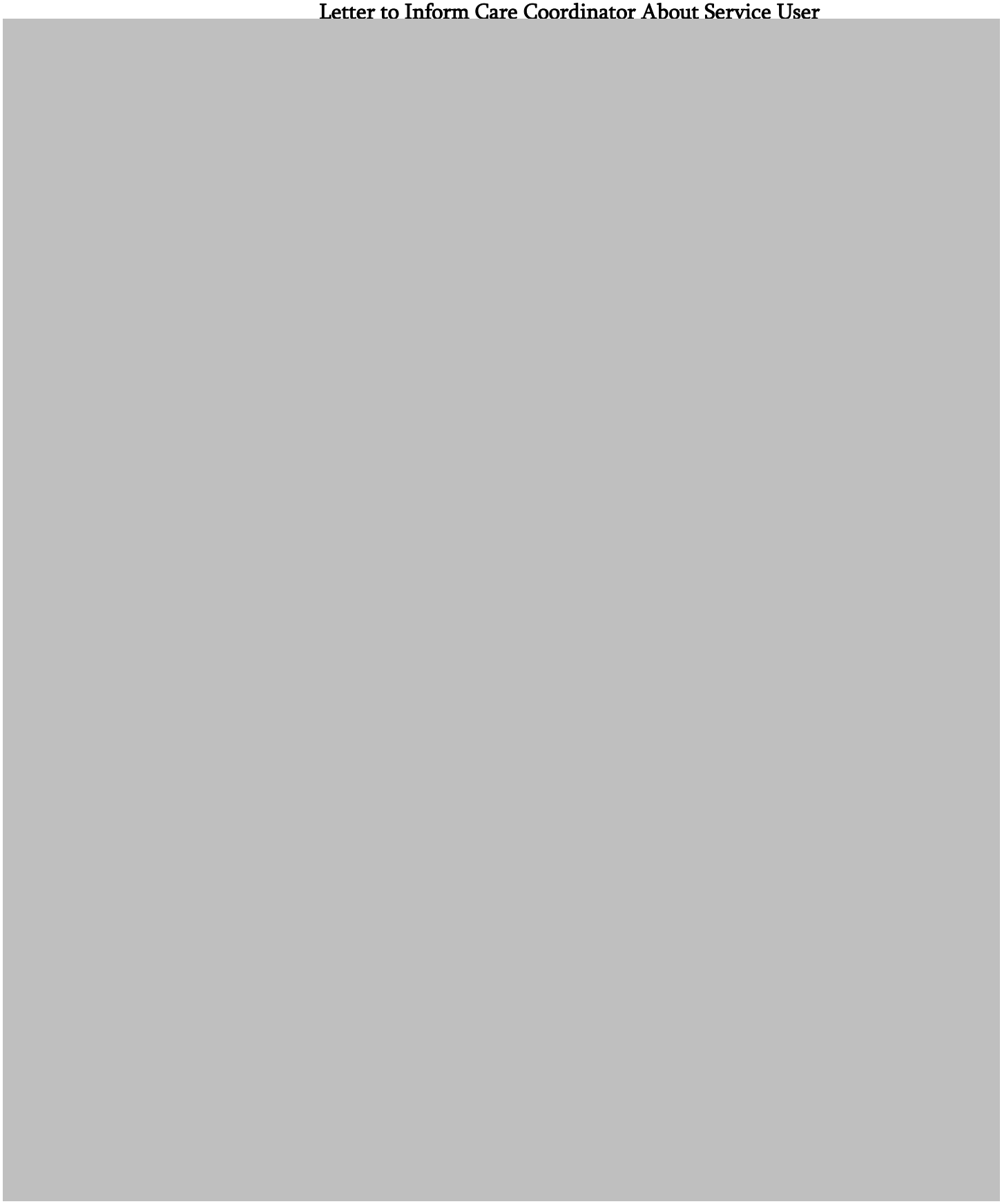
	How often have you had the thought?				
9. **Bad things are being said about me behind my back** **No Yes** **(please circle)**	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
10. **Someone I know has bad intentions towards me** **No Yes** **(please circle)**	How often have you had the thought?				
	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
11. **I have a suspicion that someone has it in for me** **No Yes** **(please circle)**	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
12. **People would harm me if given the opportunity** **No Yes** **(please circle)**	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5

	How often have you had the thought?				
13. Someone I don't know has bad intentions towards me **No Yes** **(please circle)**	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
14. There is a possibility of a conspiracy against me **No Yes** **(please circle)**	How often have you had the thought?				
	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
15. People are laughing at me **No Yes** **(please circle)**	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
16. I am under threat from others **No Yes** **(please circle)**	How often have you had the thought?				
	Rarely	Once a week	Several times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5

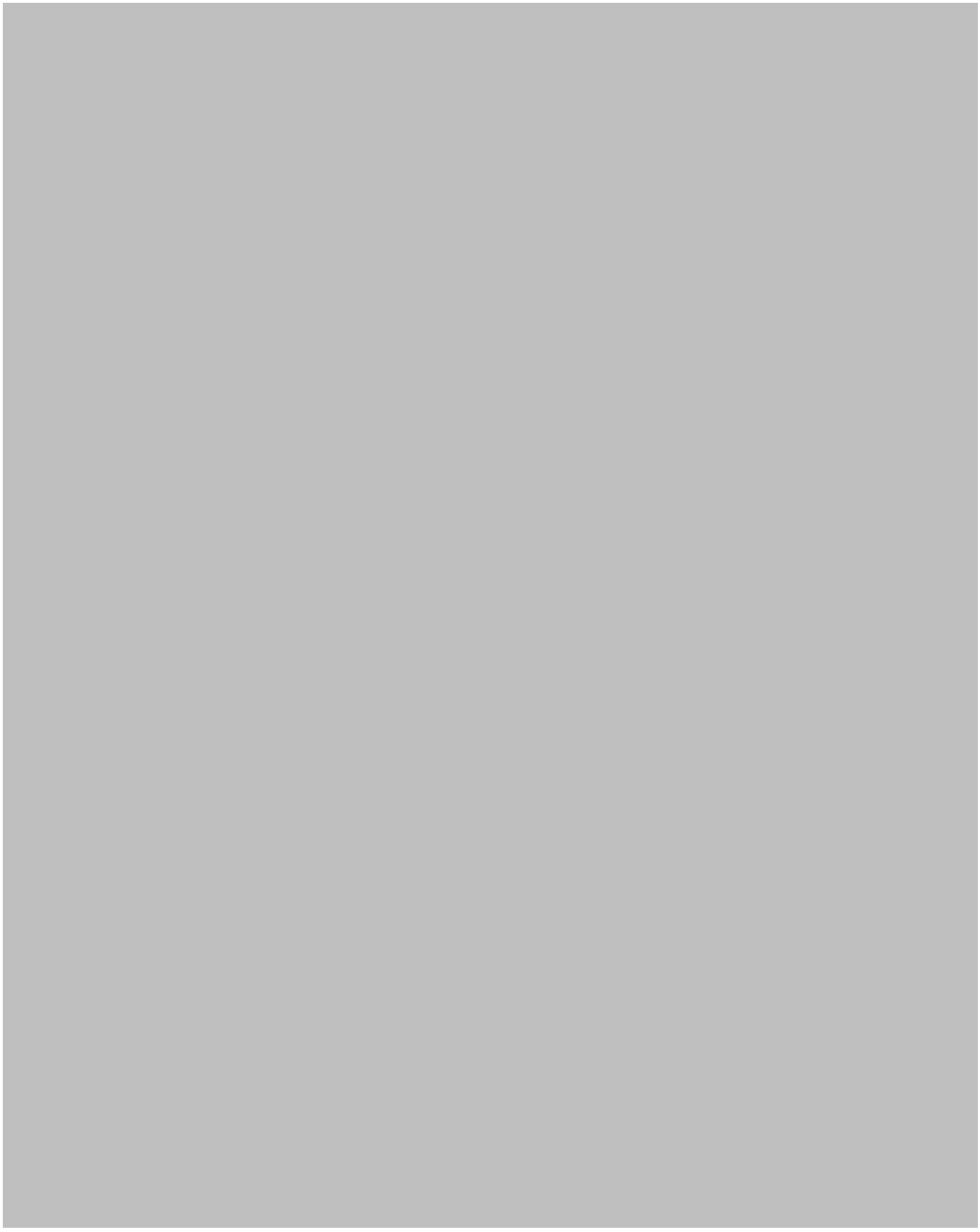
	How often have you had the thought?				
17. I can detect coded messages about me in the TV/Press/Radio **No Yes** **(please circle)**	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5
	How often have you had the thought?				
18. My actions and thoughts might be controlled by others **No Yes** **(please circle)**	Rarely	Once a week	Several Times a week	At least once a day	Weekly
	1	2	3	4	5
	Do not believe it	Believe it a little	Believe it somewhat	Believe it a lot	Absolutely believe it
	1	2	3	4	5
	Not distressing	A little distressing	Somewhat distressing	Moderately distressing	Very distressing
	1	2	3	4	5

Appendix 3.1 Letter to care coordinator

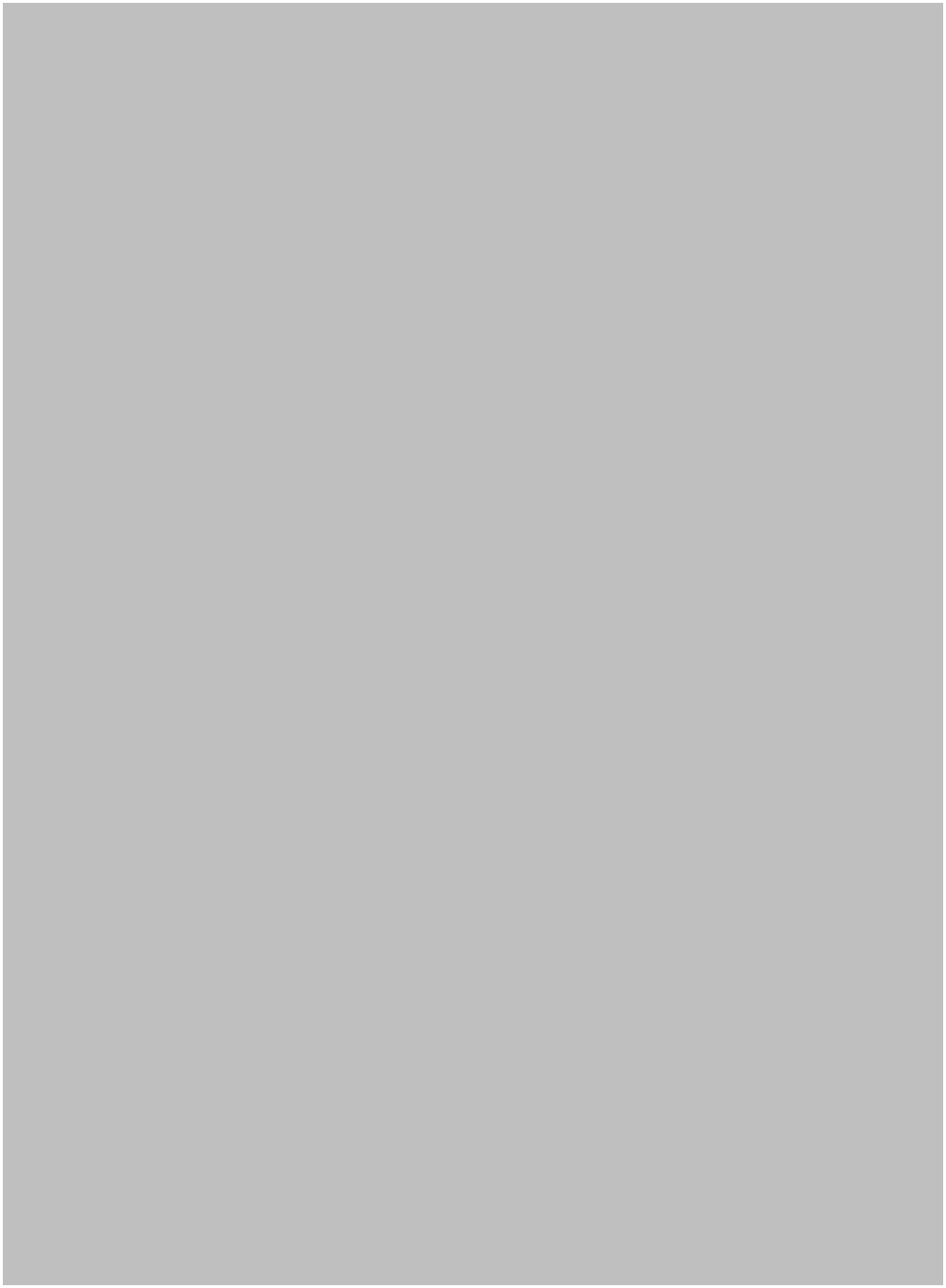
Letter to Inform Care Coordinator About Service User

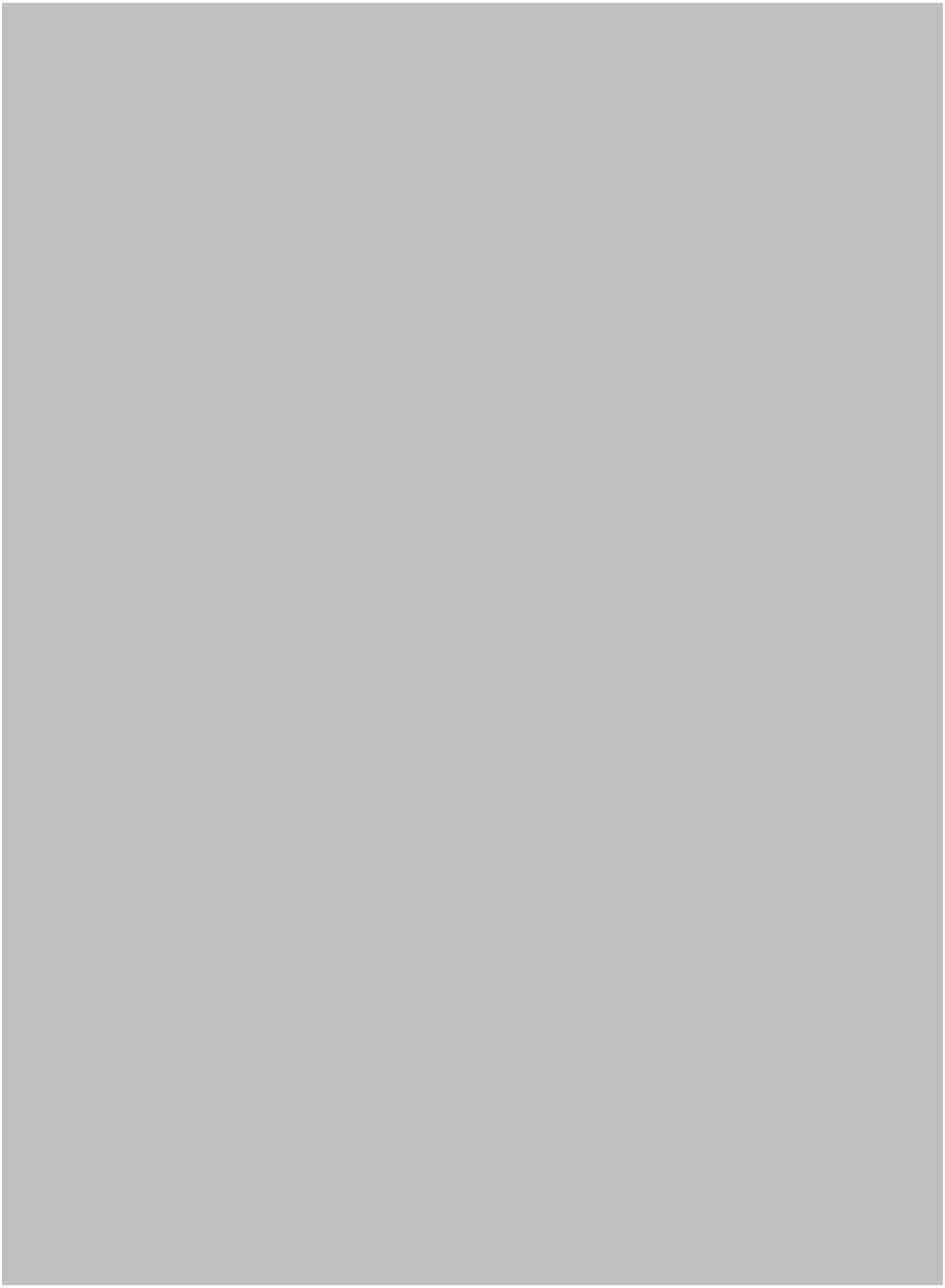


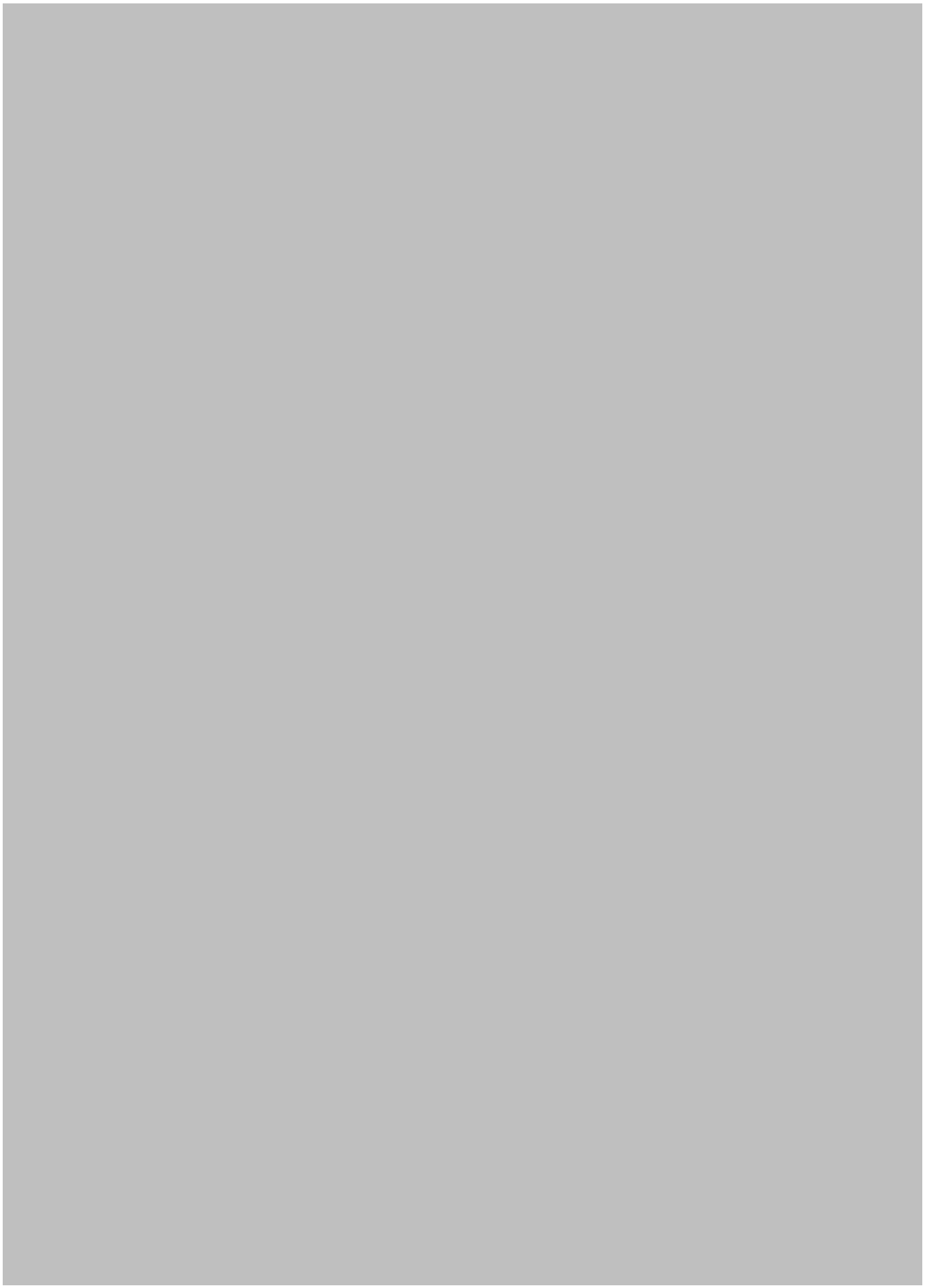
Appendix 3.2 Letter to Service User

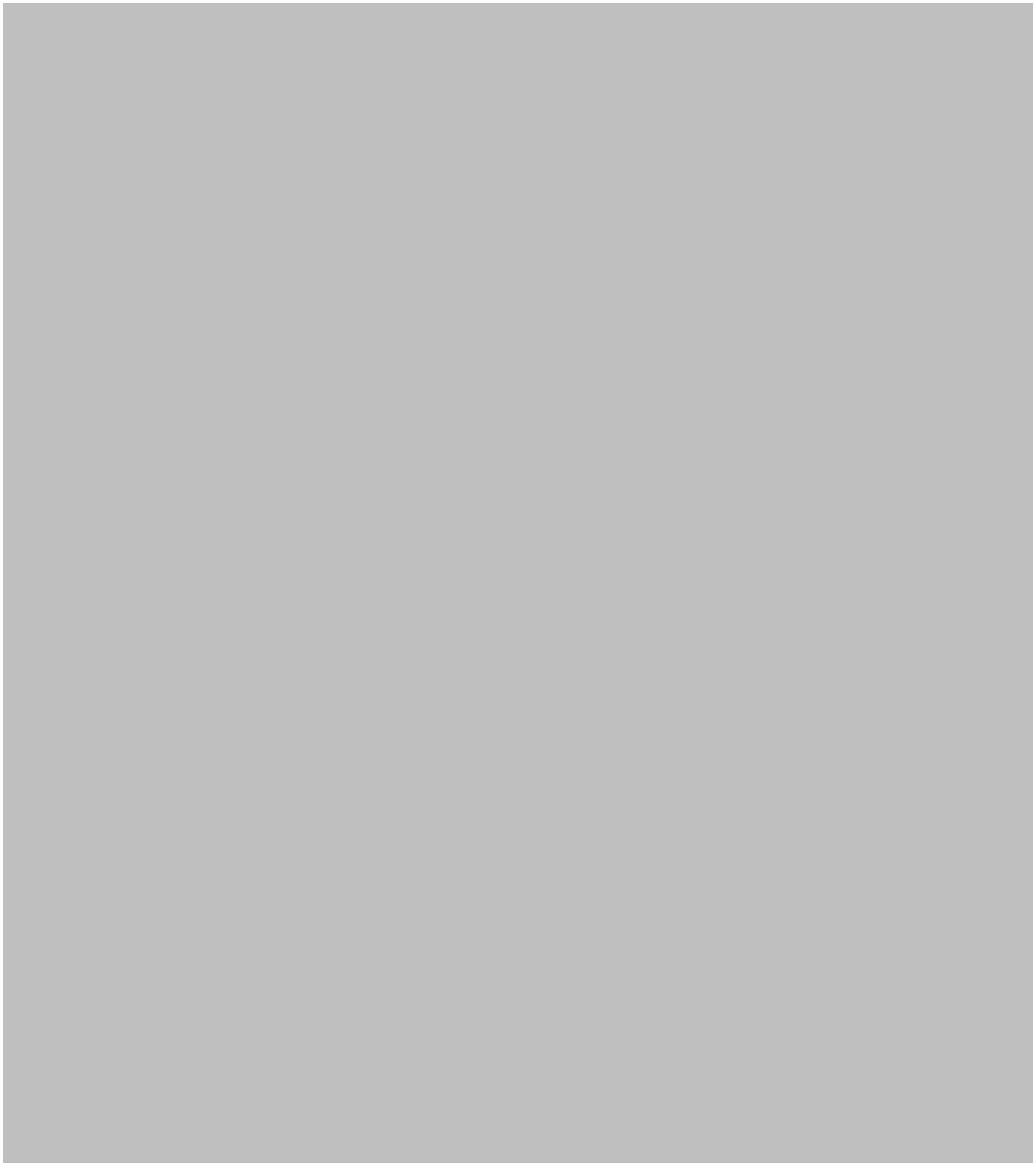


Appendix 3.3 Participant Information Sheet









Appendix 3.4 Consent Form

Research site: Birmingham and Solihull Mental Health Foundation Trust
Study Title: Role of shame in paranoid ideation and social anxiety in psychosis

Participant Identification Number:

Title of Project: Role of shame in paranoid ideation and social anxiety in psychosis
Researcher: Keith Aherne

Please initial box

1. I confirm that I have understood the information sheet dated 30/06/13 (version 1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time during the research interview, without giving any reason, without my own mental health care or legal rights being affected. ☐

3. I understand that the research interview and questionnaires used within the interview will be kept confidential and in a secure place. ☐

4. I understand that the data collected during this study will be looked at by the researcher and relevant others at the University of Birmingham to ensure that the analysis is a fair and reasonable representation of the data. Parts of the data will also be available to the NHS team responsible for me or my family member's care but only if issues of risk to me or another person's safety or health should be disclosed. ☐

5. I understand that my GP and care co-ordinator will be informed about my participation in the research. ☐

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

7. I understand that information from my interview may be published in any write-up of the data, but that my name will not be attributed to any such information and that I will not be identifiable by my information. ☐

8. I agree to take part in the above study. ☐

.....	.....	.....
Name of participant	Date	Signature
.....	.....	.....
Name of researcher	Date	Signature

Appendix 3.5 Debrief sheet

Title of study: Role of shame in paranoid ideation and social anxiety in psychosis
Name of main researcher: Keith Aherne (Trainee Clinical Psychologist)

Firstly, thank you for taking part in our study, your participation is really appreciated. By sharing your experiences with us, you are helping clinical staff to gain a better understanding of the needs and issues that are important for people in your situation.

What will happen now?
The information you shared with us will be inputted into a database, along with that of other people who have taken part in the study. Your name will not be linked with this data at any stage. After this we will analyse the database to see if there is a link between early experiences and how threatened or intimidated someone feels around others, after experiencing a psychotic illness.

What will happen to the results?
When the results of the study are ready, you can have a copy of these sent to you by the main researcher or your care co-ordinator, but let us know if you want a copy. The main researcher will be presenting the overall results to the Early Intervention team, and the results may also be published in a psychology and/or mental health journal. You will never be identifiable in any publication, presentation or report.

What if I have any questions about the study?
If you would like to ask anything about the study, or if you have any concerns about it, then you can contact the researchers Keith Aherne or Dr Mark Bernard on [redacted]

What if I feel distressed from taking part in the study?
We appreciate that some of the things asked about in the interview might bring up difficult memories or feelings. We did not intend to cause any distress by this but if you find that some of these uncomfortable feelings or thoughts don't go away then we would encourage you to contact your care co-ordinator on [redacted] If you do require further support, they will be able to arrange for you to see a clinical psychologist based at the Early Intervention service.

Once again, thank you for your time and effort in taking part in the study.

Appendix 4 : Public Domain Briefing Document

The role of childhood trauma and shame in social anxiety and paranoia within an early intervention in psychosis population

This thesis was submitted as part of the Doctorate in Clinical Psychology at the School of Psychology, University of Birmingham. This document will describe Volume 1 that comprises of two parts; a review of the literature and an empirical study.

Literature review

This paper examined the role of shame in psychosis. Shame is a socially focused, self-conscious emotional process that orientates around punitive self-judgement and wariness around negative evaluation from others. Shame differs from guilt in that it is a far more global self-judgement on the character of an individual and is linked with withdrawal and self-hatred as opposed to repair of relationships. It has been strongly linked with mental illnesses such as depression and anxiety. Shame has traditionally been measured as a global trait, however as its link with mental illness becomes better understood, it has increasingly been conceptualised in relation to specific responses that an individual has to particular contexts. Empirical research into the relationship of shame and psychosis has only recently emerged and has mainly focused on an individual's response to having a psychotic illness. This appears to have been precipitated by an increased awareness of the high rates of emotional dysfunction experienced by individuals with psychosis. It has been found that if an individual is ashamed of having a diagnosis of psychosis then they are far more likely to become depressed, socially anxious and traumatised. It is suggested that the label of psychosis not only compromises a person's identity, but other elements such as weight gain due to medication may also create shame around physical appearance. The literature has begun to investigate how developmental trauma may also be significant risk factor for both shame and emotional dysfunction. Shaming experiences during childhood may lead to a proneness towards social fears and the development of shame. Thus it is suggested that people who are more ashamed of their psychotic illness may have been exposed to high amount of shaming developmental experiences. In addition, it is possible that psychosis and shame actually share similar developmental pathways. This has led to investigations of whether developmental shaming experiences are associated with psychotic symptoms. In particular shaming interpersonal experiences have been shown to influence the relationship that an individual has with their voices, and the content of these hallucinations. Also, shaming adverse childhood memories have been associated with current levels of paranoia. It is postulated that this occurs due to an

individual believing that they exist negatively in the minds of others who may harm them. There appears to be a growing body of evidence for compassionate mind training (CMT) as an appropriate treatment for individuals who are shame prone and have difficulty in generating self-kindness and compassion. However, this appears to be at an early stage in its development and assessing the effectiveness of CMT is identified as an area for prospective research to clarify. The review suggests that future research should aim to better understand what in particular is shaming about having a psychotic illness and also to focus on establishing standardised measures of shame. This will help to empirically validate proposed models of the role of shame in psychosis.

Empirical paper

Background

Previous research has consistently found high levels of social anxiety and paranoia in people with psychosis. These distressing social fears impact negatively on the course of recovery from a psychotic illness. Evolutionary psychology based social rank theory suggests that shame may play a key role in both of these social fears. Specifically, external shame (how we think others see us) has been linked with higher childhood adversity paranoia, and internal shame (how we see ourselves) has been linked with social anxiety but less childhood adversity. There has been some evidence to support these separate shame pathways in a non-clinical sample. However, within a first episode in psychosis sample, the role of different types of shame in amplifying the association between childhood adversity and these social fears appears to be unclear. The current study examines if these distinct shame pathways to social anxiety and paranoia can be found in a first episode in psychosis sample. However other evidenced and theoretical perspectives will be considered in this analysis. Specifically, it will be investigated if shame associated with psychosis and shame proneness act as an amplifier in the relationship between childhood adversity and social anxiety.

Methods

Forty-five people who were recovering from their first psychotic episode were asked to fill in a number of questionnaires that assessed childhood trauma, shame proneness, internal and external shame associated with having a psychotic illness, social anxiety and paranoia.

Results

It was found that childhood adversity was strongly associated with all types of shame measured and both social fears. Also all types of shame were strongly linked with social anxiety and

paranoia. On closer examination, external shame appears to be more strongly linked with both paranoia and social anxiety than internal shame. When investigating the link between childhood adversity and social fears, all of the shame measures together significantly amplified this relationship. However, no single type of shame appears to amplify this relationship more than any other.

Conclusion

The result of this study provides evidence that shame plays a strong and significant role in the social anxiety and paranoia seen in a first episode with psychosis population. External shame may be particularly key in this relationship. Also, shame has been shown to increase the impact of childhood adversity on both social anxiety and paranoia. Despite this, no one type of shame emerged as having a uniquely influential role to play in this association. This highlighted a potential issue around how different types of shame are measured and applied to conceptual definitions. This paper highlights the importance of conducting comprehensive assessments of developmental history, especially when considering the most appropriate psychosocial intervention. It appears that people who are shame prone may benefit from compassionate mind training, an approach that helps to build self-kindness and self-compassion.

Appendix 5. Journal Instructions for Publication

British Journal of Clinical Psychology