

### Abstract

**Objectives:** Shame is increasingly implicated in the development and maintenance of several psychological problems including psychosis. The aim of the current paper is to review the research literature concerning the relationship between shame and the psychosis continuum, examining the nature and direction of this relationship. **Method:** Systematic searches of databases PsycINFO, Medline, Scopus and Web of Science (from the earliest available database date until November 2016) were undertaken to identify papers that examined the relationship between shame and psychosis or psychotic experiences. **Results:** A total of 20 eligible papers were identified. Risk of bias assessment identified methodological shortcomings across the research in relation to small, unrepresentative samples and failure to control for confounding variables. Narrative synthesis suggested positive associations between shame and paranoia ( $n = 10, r = .29-.62$ ), shame and psychosis ( $n = 1, r = .40$ ), shame and affiliation with voices ( $n = 1, \beta = .26$ ), and suggested that shame was greater in those with psychosis compared to controls ( $n = 4, d = 0.76-1.16$ ). **Conclusions:** Overall several studies provide partial support for the theory that shame is an important factor in relation to psychotic experiences in both clinical and non-clinical populations, particularly paranoia. However, the predominance of cross-sectional designs prevents any conclusions being drawn concerning the temporal nature of associations. Additional research is necessary to further delineate the role of shame in relation to specific psychotic experiences such as voice-hearing. Longitudinal research is particularly needed to help establish the directionality and temporal aspects of effects.

**Keywords:** Shame; Psychosis; Systematic Review; Paranoia

**Practitioner Points:**

- Research indicates moderate to strong positive associations between shame and psychotic experiences the existing literature.
- The results provide preliminary evidence that shame may play a role in relation to psychosis and more specifically, paranoia.
- Findings should be interpreted with caution due to many disparities across the studies reviewed and methodological shortcomings (e.g., small sample sizes).
- It is not currently possible to determine causality or direction of effect due to the cross-sectional design of all existing studies.

## Introduction

Whilst benign for many individuals, psychotic experiences can be highly distressing and associated with decline in social (Palmier-Claus, et al., 2016) and occupational functioning (Fornells-Ambrojo, Craig, & Garety, 2014), social deprivation (Kirkbride, Jones, Ullrich, & Coid, 2014), suicide, self-harm (Mork et al., 2013; Nordentoft, Mortensen, & Pedersen, 2011; Taylor, Hutton, & Wood, 2014) and poverty (Read, 2010). Emotional processes have been increasingly recognised as important in understanding the emergence and maintenance of psychosis (e.g., Birchwood, 2003). Shame has been implicated in various psychological problems, including depression (Kim, Thibodeau, & Jorgensen, 2011), Post-Traumatic Stress Disorder (Pugh, Taylor & Berry, 2015), and self-injury (Andrews, 1998; Gilbert, 1998, 2002; Gilbert et al., 2010; Tangney & Dearing, 2002), and may also play a role in the development and maintenance of psychosis (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010). The current paper is the first to review the extant literature for evidence that shame contributes to the onset and maintenance of psychosis.

Psychotic experiences include hearing voices, suspiciousness, holding beliefs that others may consider to be unusual, and speaking in a disorganised way (Cooke, 2014). Attempts to understand the causes of psychosis have highlighted several cognitive processes believed to play a role in the onset or maintenance of psychotic experiences, including source-monitoring deficits (Bentall & Slade, 1985; Johns et al., 2001), theory of mind deficits (Brune, 2005; Frith, 1994; Harrington, Siegert, & McClure, 2005; Healey, Bartholomeusz, & Penn, 2016), jumping to conclusions biases (Dudley, Taylor, Wickham, & Hutton, 2016; Moritz & Woodward, 2005), and attributional processes such as external locus of control (Bentall, Corcoran, Howard, Blackwood, & Kinderman, 2001; Bentall, Kinderman, & Kaney, 1994). These mechanisms concern the way information is attended to, appraised, understood, or processed. However, emotional content also appears important in understanding psychosis

(Birchwood & Trower, 2006; Freeman & Garety, 2003; Guillem, Pampoulova, Stip, Lalonde, & Todorov, 2005; Smith et al., 2006). There is evidence that emotional disturbance often precedes psychotic experiences (Freeman & Garety, 2003; Kramer et al., 2014) and emotion-related processes have been associated with psychotic symptoms such as paranoia (Bentall et al., 2009). Emotional changes may be a precursor to the occurrence of psychotic experiences (e.g., Barrowclough et al., 2003; Krabbendam et al., 2005) but may also be important in the maintenance of difficulties (Morrison, 1998).

Shame is a self-conscious emotion characterised by feelings of inadequacy, defectiveness, and negative evaluation of the self (Feiring, Taska, & Lewis, 2002; Lewis, 1971; Tangney & Dearing, 2002). It has been associated with several psychological problems including depression (mean weighted effect size across  $k = 86$  studies in meta-analysis  $r = .43$ ; Kim et al., 2011), anxiety ( $r = .40-.54$ ; Fergus, Valentiner, McGrath, & Jencius, 2010; Levinson, Byrne, & Rodebaugh, 2016), and eating disorders (Blythin et al., 2018). Shame occurs in the moment, typically linked to a particular trigger (e.g. perceived transgressions or failings). In this way it differs to self-esteem, which is a more trait-like cognitive representation of the self, though people who are more prone to experience shame are more likely to have low-self-esteem (Tangney & Dearing, 2002). Consequently, shame has often been measured as an emotional response to a particular action (Tangney, Dearing, Wagner & Gramzow, 2000) or perceived aspects oneself (e.g. character or appearance; Andrews et al., 2002), though measures of more generalized or global feelings of shame, not linked to a particular cause, have been developed (e.g., Cook, 1996). It has been suggested that shame has evolved as a response to social threat, linked to the need for social belonging and to be accepted by others (Gilbert, 2004, 2006).

Shame has been conceptualised in various ways. It has been examined as a trait, or a dispositional proneness to the emotional experience (Tangney, Wagner, & Gramzow, 1989),

and it has been examined in terms of the level of shame experienced in a given period (Andrews, Qian, & Valentine, 2002). Theorists have also suggested a form of 'external shame', which refers to internal cognitive representations of how one is viewed by those around them (Gilbert, 1997; 1998). Other researchers have focused on 'shame memories'. These are defined as conditioned emotional memories resulting from early shaming traumatic experiences believed to influence self-identity and social engagement (Pinto-Gouveia & Matos, 2011).

Historically, shame and guilt have been referred to interchangeably in the psychological literature (Tomkins, 1962), but more recently a clear distinction between these constructs has been made (Gilbert, 2003a; Kim et al., 2011). With shame, negative evaluation is focused upon the self at the expense of attention towards others (Tangney & Dearing, 2002), whereas with guilt, attention is directed outwards towards others and specific behaviours are the focus of negative evaluation (Lewis, 1971). Shame is associated with the urge to escape and withdraw (Tangney & Dearing, 2002) and with the function of repairing ones' reputation or social rank (Fessler, 2004; Gilbert & McGuire, 1998). Guilt is associated with the caring system and the reparation and resolution of relationships (Gilbert, 2004).

There are several theoretically plausible pathways through which shame may lead to psychotic experiences. Cognitive models of psychosis (e.g., Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001) have suggested that two pathways lead to the development of positive symptoms of psychosis, involving triggering life events, biased appraisal processes, disturbed affect, and the perception of anomalous experiences. This disturbed affect could include shame, due to its inherently aversive nature.

Shame is concerned with how an individual compares to and is perceived by others (Gilbert, 2005; 2009) and therefore maps onto many common themes of psychotic experiences, including beliefs relating to persecution or grandiosity, or hearing a powerful or dominant voice (e.g., Collip, Oorschot, Thewissen, van Os, & Bentall, 2011). It is plausible that the presence

of shame increases the salience of threat to the self, influencing the way individuals attend to and make sense of experiences. Notably, there is evidence that for those who hear voices, the interpersonal qualities of the voice mirror the individuals' wider social relationships (Birchwood et al., 2000), so that individuals who feel more powerless in life experience a similar dynamic with their voices (i.e., voices appear more powerful). Thus, shame, in that it captures feelings of defectiveness and inferiority, might be mirrored in the experience of voices. Consequently shame, more so than other aversive emotions, might fuel psychotic appraisals and cognitions of experiences. Moreover, the behavioural concomitants of shame, avoidance and withdrawal, may hinder opportunities for an individual to receive corrective feedback relating to their experiences, allowing psychotic explanations to develop.

People with psychotic experiences are more likely to have experienced threats to the self across their life course including childhood trauma and victimisation (Johnstone, 2009; Read, Agar, Argyle, & Aderhold, 2003; Read, van Os, Morrison, & Ross, 2005; Varese et al., 2012). A vulnerability to feelings of shame may help in part explain the link between such experiences and the subsequent emergence of psychosis (Sabrina, Elbert, Müller & Schauer, 2015).

Negative emotions, including shame, may also be a consequence of psychosis, associated with pessimistic beliefs about psychotic experiences (e.g., I will never work again because of my psychosis; I am unable to control these experiences; Birchwood, Mason, MacMillan, & Healy, 1993) and perceptions of stigma and marginalization (Gumley & MacBeth, 2006). Emotional disturbance is often associated with experiences of psychosis (Birchwood, Iqbal, Chadwick, & Trower, 2000) and this can impact upon recovery and increase individuals risk of relapse (Gumley, White, & Power, 1999; Gumley, 2007). Those with psychosis can experience loss, entrapment, and humiliation related to the loss of social and occupational roles (Rooke & Birchwood, 1998) and are likely to perceive themselves of low

social rank (e.g., Allison, Harrop, & Ellett, 2013; Birchwood, Meaden, Trower, Gilbert, & Plaistow, 2000; Wood & Irons, 2016). Social rank theory has previously been utilised as a potential model for understanding how psychosis may develop and be maintained (Gilbert, 2000; Price, Sloman, Gardner Jr, Gilbert, & Rohde, 1994). Shame, like social rank, is concerned with ones positioning or status in relation to others. Feelings of inferiority and submissive behaviour in relation to social rank have been associated with shame (Gilbert, 2000).

In summary, shame may be an important emotion in relation to psychosis or psychotic-like experiences, leading to the onset and maintenance of symptoms, but it may also be a consequence. The aim of this review is to examine the existing literature in relation to shame and the psychosis continuum and to determine whether: 1) shame is related to psychosis or psychotic/psychotic-like experiences (e.g., paranoia, hearing voices, delusions); and, 2) if so, what is the nature of this relationship? (i.e., its direction and strength)? Considering research evidence indicating that psychotic experiences exist on a continuum and occur in the general population (Van Os, Hanssen, Bijl, & Ravelli, 2000) the review will examine experiences that are characterised as psychotic symptoms and sub-clinical psychotic experiences in non-clinical populations.

## **Method**

### **Search Strategy**

A systematic review protocol was pre-registered on the PROSPERO database (ref: CRD42016043982). Online databases Medline, PsycINFO, Scopus, and Web of Science (from the earliest available date for each database until November 2016) were searched using the following search terms: (shame\* OR ashamed) AND (Psychosis OR Psychotic OR Schizo\* OR Hallucinat\* OR Delusion\* OR Paranoi\* OR “Auditory hallucination\*” OR “Hearing

voices” OR “Unusual belief\*” OR “Thought disorder\*”). All duplicate articles were removed from the papers identified and an initial screening of titles and abstracts was undertaken by the primary researcher (LC). Papers that did not appear to be eligible based upon title and abstract were omitted. Any papers where eligibility was uncertain were included at this stage. For the remaining articles, full text versions were examined and exclusion and inclusion criteria applied. Any papers that did not meet criteria were excluded. Where posters and conference abstracts were obtained, authors were contacted to request full text versions of studies. Authors were also contacted for additional data when papers were identified that examined shame and psychosis but did not include data on the relationship between the two within the paper. Supplementary steps of the search strategy included a) contacting corresponding authors of eligible articles to determine if they had produced any other published or unpublished research which may be eligible for the review; and b) hand-searching of reference lists from eligible studies.

Parallel screening was undertaken at stage by a second reviewer (NC). A random 10% (obtained with the use of a random number generator) of the initial 700 papers were secondary screened by the reviewer. There was 100% level of agreement between reviewers at the end of the parallel screening process.

### **Inclusion and Exclusion Criteria**

Studies were included if they met the following criteria: a) were written in English language; b) included a quantitative measure of shame; c) included a measure of psychotic/psychotic-like symptoms; d) specifically examined the relationship between shame and psychotic/psychotic-like symptoms or compared the level of shame in a psychosis sample to the level of shame in a control sample.

### **Data Extraction**



Data were extracted by LC using an extraction spreadsheet. A narrative synthesis of the data was then conducted. When presenting results both unstandardised and standardised effects were presented where possible. Standardized effect size metrics like Cohen's *d* appear useful in providing a means of comparing associations across studies, but these metrics have also been criticised because they are influenced by a range of hidden factors (Baguley, 2009). Therefore, for group comparison designs we also calculate the group difference in the Percent of Maximum Possible Score ( $\Delta$ POMP) for the outcome measure (Grissom & Kim, 2012). We suggest a  $\Delta$ POMP of  $\geq 20\%$  be interpreted as a particularly substantial difference.

### **Risk of Bias Assessment**

Risk of bias was assessed using the Agency for Healthcare Research and Quality risk of bias tool (Williams, Plassman, Burke, Holsinger, & Benjamin, 2010). This tool has been used for reviews of observational data in a variety of contexts (Dudley et al., 2016; Taylor et al., 2014) and criteria can be specifically adapted for the context of the review (see Appendix B). The tool covers eleven methodological domains with users required to grade each domain as being fully met, not met, or partially met. Risk of bias assessments were undertaken by the primary researcher (LC) and a second reviewer (MW). The initial level of agreement between the two reviewers was 71.4%, which after discussion was resolved to a 95.5% level of agreement. The outstanding disagreements (4.5%) were discussed and resolved with the inclusion of a third reviewer (PJT).

## **Results**

### **Study Characteristics**

The number of studies identified at each stage are summarised in Figure 1. A total of 20 papers met the inclusion criteria. A summary of study characteristics is presented in Table 1. All of the studies were cross-sectional. Studies included both clinical ( $n = 8$ ), non-clinical ( $n$

= 8), and mixed clinical and non-clinical samples ( $n = 4$ ), and measured general psychotic symptoms ( $n = 8$ ), paranoia ( $n = 11$ ), and voice-hearing ( $n = 1$ ).

**[INSERT FIGURE 1 HERE]**

[INSERT TABLE 1 HERE]

### **Risk of Bias**

The most common methodological problems were unjustified sample sizes, no reporting of power calculations, failure to control for confounding variables and in group comparison studies failure to match on key demographics variables. Several studies ( $k = 5$ ) utilised measures where a single item, a collection of several items or a single scale was taken from larger measures to assess shame, without further assessment of psychometric properties, which may have resulted in poor content validity and reliability. All five of the Portuguese studies (Castilho, Xavier, Pinto-Gouveia, & Costa, 2015; Matos, Pinto-Gouveia, & Duarte, 2012; Matos, Pinto-Gouveia, & Gilbert, 2013; Pinto-Gouveia, Castilho, Matos, & Xavier, 2013; Pinto-Gouveia, Matos, Castilho, & Xavier, 2014) utilised measures of shame or shame memories and psychotic/psychotic-like experiences that had been translated into Portuguese, yet they had been subject to validation in Portuguese samples. Lincoln, Hartmann, Kother, & Moritz (2015) utilised a German version of the ERSQ-ES to measure shame and the authors noted that previous validation of this adapted measure yielded good psychometric properties.

Only three studies (Johnson, Jones, Lin, Wood, Heinze, & Jackson, 2014; Pinto-Gouveia et al., 2014; Wood & Irons, 2016) reported conducting a power analysis or described some other rationale for determining the adequacy of sample sizes. It is therefore unclear if the remaining studies were adequately powered to identify relationships between the variables of interest. Several studies ( $k = 9$ ) had small sample sizes ( $n < 100$ ), where low power may have been an issue. Several studies controlled for the effects of confounding variables within their analyses, but two key confounders, guilt and depression, were often not adjusted for in

analyses. This may be problematic as within the literature shame has been associated with depression and guilt (Kim et al., 2011). Parameter estimates could be biased if confounders are not accounted for within analyses leading to over or under estimations of effect sizes. The representativeness of the sample was a concern in five cases, including studies with predominantly male or female samples, or non-clinical samples from a higher educational or socio-economic status (Johnson et al., 2014; Keen, George, Scragg, & Peters, 2017; Matos et al., 2012; Pinto-Gouveia et al., 2013; Pinto-Gouveia et al., 2014). These potential biases are problematic as they limit the generalisability of findings.

**[INSERT TABLE 2 HERE]**

### **Is Shame Related to Psychosis?**

In studies measuring psychosis using group comparison designs ( $k = 6$ ) two studies identified greater levels of shame in clinical samples with psychosis than in healthy controls ( $d = 0.99-1.16$ ;  $\Delta\text{POMP} = 16\%$ ; Suslow, Roestel, Ohrmann, & Arolt, 2003; Turner, Bernard, Birchwood, Jackson, & Jones, 2013), one identified a trend towards greater shame in those with psychosis when compared to healthy controls (Lincoln et al., 2015) and another found greater external shame in a group diagnosed with schizophrenia than an arthritis control group ( $d = 0.76$ ;  $\Delta\text{POMP} = 19\%$ ; Keen et al., 2017). Two of the group comparison studies did not support these findings, with one identifying no statistically significant difference between levels of shame in individuals with first-episode psychosis (FEP) and a healthy control group ( $d = 0.32$ ;  $\Delta\text{POMP} = 6\%$   $n = 60$ ; Michail & Birchwood, 2013) and another identifying less

shame in a group diagnosed with schizophrenia than a healthy comparison group ( $d = 1.11$ ;  $\Delta\text{POMP} = 12\%$ ;  $n = 15$ ; Guimón, Las Hayas, Guillén, Boyra, & González-Pinto, 2007). However, small clinical sub-samples sizes and low power may have been a factor here. Inconsistent findings emerged regarding comparisons between individuals with psychosis and those with experiences of depression, with one study reporting a trend towards greater shame in the latter group, one study reporting lesser shame, and another reporting a trend towards lesser shame in the depression group ( $d = 1.11$ ;  $\Delta\text{POMP} = 17\%$ ; Guimon et al., 2007;  $d = -0.72$ ;  $\Delta\text{POMP} = 13\%$ ; Keen et al., 2017; Lincoln et al., 2015). Only two of these studies measured the actual level of depressive symptoms in the depression groups, both utilising different measures. Consequently, it is impossible to compare the level of depressive symptoms across the three studies and differing findings may reflect variations in depression group symptom severity. Furthermore, the TOSCA (Tangney et al., 1989) was utilised in both studies where lesser shame was identified in the psychosis group. This may not be a suitable measure as the TOSCA is based upon making hypothetical judgments about states of mind, an ability that may be affected in psychosis (Sprong, Schothorst, Vos, Hox, & van Engeland, 2007).

In studies measuring general psychosis using correlational designs ( $k = 2$ ) one study identified positive correlations between external shame and positive psychotic symptoms in a clinical sample ( $r = .40$ ; Wood & Irons, 2015) and identified a significant indirect effect of external shame on positive psychotic symptoms via depression. However, another found no significant relationship between external shame and either positive or negative symptoms of psychosis ( $r = -.03-.05$ ; Birchwood et al., 2006).

One study measuring internal and external shame specifically due to psychosis (i.e., shame related to the consequences of psychosis) reported significant positive associations between shame and the diagnosis of psychosis (Turner et al., 2013). In this study, the OAS was adapted to measure shame about psychosis and compared to levels of shame in healthy controls

completing an unedited version of this measure (Turner et al., 2013). Those in the psychosis sample had greater shame than healthy controls ( $d = 0.52-1.00$ ), but this comparison is limited as the healthy control sample were completing a different version of the measure.

In summary, there is some evidence that shame is associated with psychosis. However, several null findings were also identified within the papers obtained, thus reducing confidence in the association between these constructs.

### **Is Shame Related to Paranoia and Voice-Hearing?**

Two studies reported positive associations between shame (prone to internal shame) and paranoia in clinical ( $r = .29-.52$ ; Bertoldi, 2001; Johnson et al., 2014) and general community populations ( $r = .42-.54$ ; Sombke, 2001;  $d = 0.95$ ;  $\Delta\text{POMP} = 18\%$ ; Zlotkin, 1994). Three studies identified positive correlations between shame and 'subclinical' paranoia utilising the General Paranoia Scale (GPS;  $r = .46-.62$ ; Fenigstein & Vanable, 1992; Portuguese version by Lopes & Pinto-Gouveia, 2005b; Castilho et al., 2015; Matos et al., 2013; Pinto-Gouveia et al., 2014).

Three studies examined the relationship between shame memories and subclinical paranoia. Subclinical paranoia refers to non-pathological phenomena observed in individuals in their day to day interactions that are associated with exaggerated self-referential biases (Fenigstein & Vanable, 1992), interpersonal sensitivity and mistrust (Bebbington et al., 2013). Results suggested that centrality of shame memory (i.e. the extent to which a memory of a shameful event becomes a reference point for identity;  $r = .39-.45$ ; Matos et al., 2013; Pinto-Gouveia et al., 2013) and distress related to memories was positively correlated with paranoia ( $r = .45$ ; Pinto-Gouveia et al., 2014). One study measured the relationship between clinical paranoia and shame memories in a non-clinical population and reported that centrality of shame memory was positively correlated with paranoia frequency, conviction and distress ( $r = .17-.38$ ; Matos et al., 2012).

Some studies identified indirect effects between shame and paranoia. Pinto-Gouveia and colleagues (2014) identified an indirect effect of shame memories on paranoia via internal and external shame. Johnson and colleagues (2014) reported an indirect effect of stressful life events on paranoia via experiences of shame, suggesting that high levels of shame may be vulnerability factor for paranoia.

Only one study obtained examined the relationship between voice-hearing and shame (Connor & Birchwood, 2013). The authors identified that voice power differential (the difference in perceived power noted between the voice and the voice-hearer;  $\beta = 0.25$ ) and interpersonal or relational content of voices significantly predicted shame ( $\beta = -0.51$ ; Connor & Birchwood, 2013).

In summary, there is evidence that shame tends to be positively associated with levels of paranoia. The size of this association is suggestive of a theoretically important relationship, but the reliance on cross-sectional associations and lack of consideration of confounding factors limits what can be said about the nature of this relationship.

### **Discussion**

The aim of this review was to examine the existing research literature to establish whether shame was related to psychosis or psychotic/psychotic-like symptoms and if so, to examine the nature of this relationship. Overall, several studies ( $k = 10$ ) reported moderate to strong positive associations between shame and psychotic/psychotic-like experiences, specifically paranoia. Strong associations between shame and psychosis and greater levels of shame in individuals experiencing psychosis were indicated in five studies. However, a further two studies failed to demonstrate this difference in shame scores and so the possibility that shame levels are especially elevated in individuals with psychosis compared to other groups requires further confirmation. These results should be viewed with caution, given the heterogeneity in in terms of measurement and populations, small, unjustified samples and the

tendency not to control for conceptually important confounding variables like guilt or depression. A further limitation regarding the studies obtained was that none utilised longitudinal designs and thus, no conclusions regarding the temporal qualities of the reported associations, including directionality, can be made. Only one study examined the relationship between shame and negative symptoms of psychosis, only one looked at the experience of voice hearing in relation to shame, and no study examined the association between shame and other specific symptoms of psychosis such as thought disorder.

The results provide preliminary support to social rank, cognitive, and compassion-focused theories of psychosis (e.g., Freeman & Garety, 2003; Garety et al., 2001; Gilbert, 2000; Gumley et al., 2010) that suggest shame may be an important emotion in understanding psychosis/psychosis-like experiences. However, specific hypotheses that shame triggers or precedes psychosis have not been confirmed. Therefore, the reciprocal effect, where shame results from psychosis and is implicated in the maintenance and relapse of psychotic symptoms may be the case.

Despite variation in the questionnaires utilised to measure shame, all capture the fundamental aspect of shame as a perception of an inadequate self (Lewis, 1971). Furthermore, most questionnaires used in the studies were validated in the relevant samples. Where study findings varied, this did not appear to be related to the use of a specific psychometric or psychiatric interview.

Limitations regarding the studies obtained included small samples. This resulted in many studies seemingly being underpowered. Although associations tended to be moderate-to-large it should be noted that low power can also contribute to exaggerated effect sizes because of factors like publication bias (Button et al., 2013). This raises the possibility that the true effect size is smaller than those observed here. Several studies had unrepresentative samples in terms of gender; many used self-selected participants and some used participants



obtained via institution agreements, where samples may be expected to be unrepresentative in terms of class, education, ethnicity and employment. This limits the ability to generalise findings to more representative samples. Many studies did not control for confounding variables. This is specifically pertinent where other psychological difficulties, for example, depression may have been present, increasing the potential for inflated effect sizes. Notably, a subset of studies did report that relationships between shame and psychotic experiences remained whilst adjusting for depression, suggesting that the association between shame and psychosis is not entirely a result of the confounding influence of depression.

In the current review a meta-analysis could not be undertaken due to the high level of diversity across the studies in terms of the measures used to quantify shame and psychotic/psychotic-like experiences, the populations examined and the psychotic/psychotic-like symptoms that were measured. Another limitation is that 17 studies had to be excluded at the final stage due to data regarding the association between shame and psychosis/psychosis-like experiences being unavailable. This was either in terms of this association not being included in the statistical analysis, not published in the paper or not available after contacting the study authors for the unpublished data. This raises the potential of publication bias since these unreported effects are more likely to be small and not statistically significant. Furthermore, only papers that were written in English language were included.

The findings of this review suggest that further research is needed to determine the impact of shame on the development and maintenance of psychosis/psychosis-like experiences in order to utilise the most appropriate therapeutic treatments when working with individuals who have psychotic experiences. If shame is prominent or causal in psychosis/psychosis-like experiences, then psychological therapies that address experiences of shame may be helpful. Cognitive-behavioural therapy is the most widely studied, well supported psychological therapy in the literature in relation to the treatment of psychosis (e.g., Marshall & Rathbone,

2011; Morrison et al., 2014; Wykes, Steel, Everitt, & Tarrrier, 2008) and is recommended in United Kingdom treatment guidelines (National Institute for Health and Care Excellence, 2014). It may be clinically useful to adapt cognitive-behavioural therapy to address beliefs and feelings of shame (Birchwood & Trower, 2006; Gilbert, 2003b). Third wave cognitive-behavioural therapies such as compassion-focused therapy, acceptance and commitment therapy and mindfulness, may be beneficial. Compassion-focused therapy, which aims to reduce the threat-based emotional system associated with shame, has been successfully utilised with people with psychotic experiences (Braehler et al., 2013; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). Acceptance and commitment therapy and mindfulness are effective in reducing emotional dysfunction following psychosis and are associated with a number of other therapeutic benefits (Aust & Bradshaw, 2017; Gumley et al., 2017; White et al., 2011; White et al., 2015). Though evidence of efficacy is currently lacking, cognitive-analytic therapy appears feasible and acceptable for the treatment of psychosis (Taylor, Perry, Hutton, Seddon, & Tan, 2014; Taylor et al., 2018), and may be beneficial to address problems related to internalised shame due to its focus on interpersonal processes. Furthermore, welfare and community interventions that are targeted at the wider societal level may help to reduce feelings of shame in the individual and may also help to target social stigma and marginalisation by others in society, which may impact upon shame. This may decrease the likelihood that psychotic symptoms will be maintained or remerge.

Further research should be conducted in this area to delineate the role of shame in relationship to specific psychotic/psychotic-like experiences. Specifically, new research should include experimental and longitudinal designs that enable causality and direction of effects to be established. This would enable models and theories in relation to the role of emotions in psychosis to be further refined and for interventions to be targeted more accurately. Future research could investigate the possibility of a differential relationship between shame and specific

delusional or paranoid beliefs (e.g., grandiose, 'bad me', 'poor me'). Research should also examine the role of shame in relation to other psychotic experiences such as voice-hearing as investigation of these experiences has been neglected thus far.

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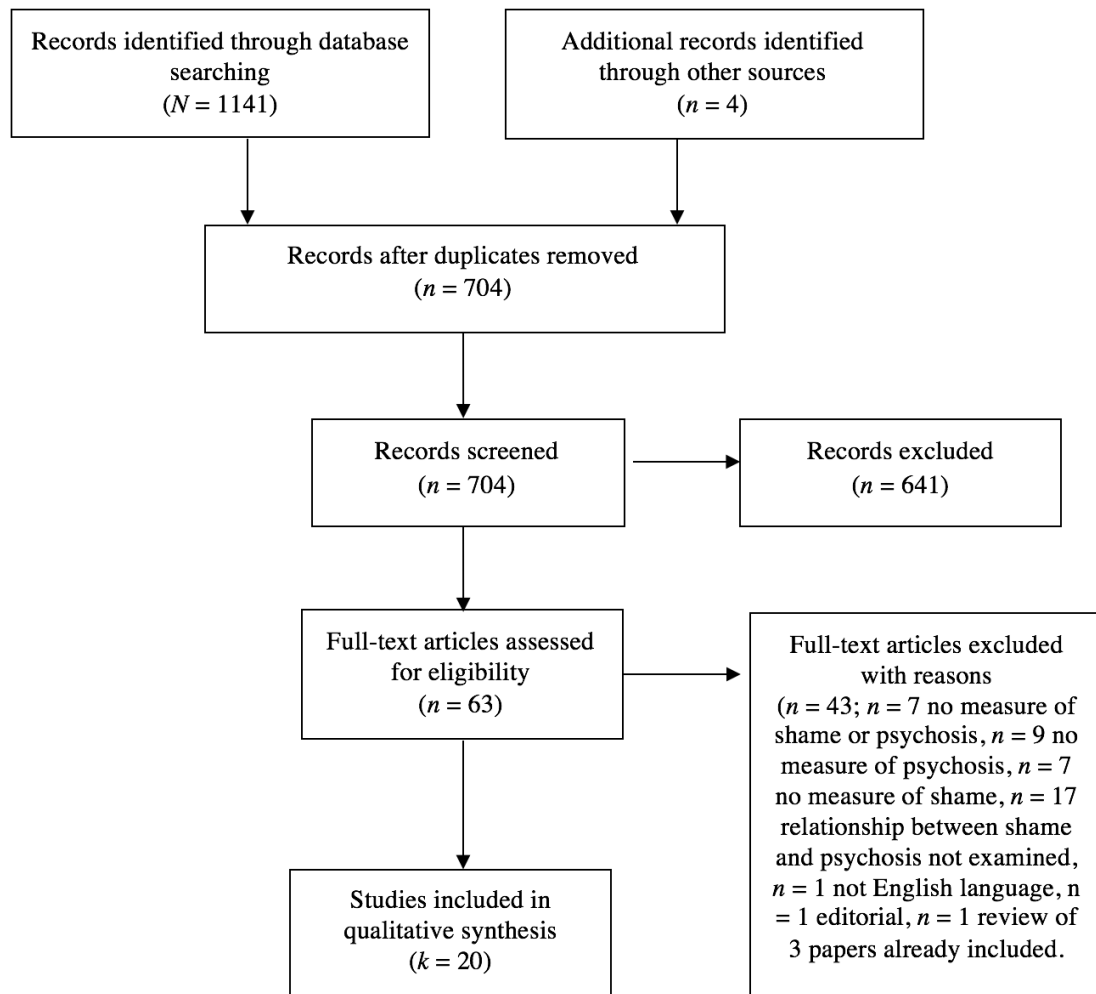


Figure 1. PRISMA flow diagram outlining the article search and screening process.

Table 1

*Study Characteristics*

Study	Sample	Design	Shame measure	Psychotic symptom measure	Findings	Bivariate effects	Multivariate effects
Birchwood et al. (2006) UK	Clinical – first-episode psychosis, aged 16-30 ( $N = 79$ ; $n = 56$ female; $n = 23$ socially anxious, $n = 56$ non-anxious). Relationship between shame and psychosis analysed with $n = 21$	Cross-sectional	OAS	PANSS	External shame or shame about illness not significantly correlated with positive or negative psychotic symptoms	$r = -.22-.05$	
Keen et al. (2017) UK	Clinical ( $N = 60$ ; $n = 20$ schizophrenia group, $n = 20$ depression group, $n = 20$ arthritis group)	Cross-sectional	OAS TOSCA	DSM-IV-TR	External shame greater in schizophrenia group compared to arthritis group; shame-proneness less in schizophrenia group compared to depression group (trend towards significance but non-significant difference)	$d = 0.76$ $\Delta\text{POMP} = 19\%$  $d = -0.72$ $\Delta\text{POMP} = 13\%$ $p = .06$	
Turner et al. (2013) (UK)	Clinical – aged 19-37 ( $N = 50$ ) diagnosed with a psychotic disorder defined by ICD-10 criteria (only included if acute symptoms were in remission)	Cross-sectional	ISS OAS ESS	ICD-10	Internal shame due to psychosis, external shame due to psychosis and general shame were greater in the clinical sample compared a non-clinical sample obtained from another study	$d = 1.0$ $\Delta\text{POMP} = 23\%$  $d = 0.52$ $\Delta\text{POMP} = 11\%$  $d = 0.39$ $\Delta\text{POMP} = 8\%$	
Wood & Irons (2016) UK	Clinical – aged 18-65 years ( $N = 52$ ; $n = 21$ female) diagnosed with schizophrenia-spectrum disorder (ICD-10) or were under an early intervention service	Cross-sectional	OAS	PANSS	External shame positively correlated with positive psychotic symptoms; significant indirect effect for external shame on positive symptoms via depression	$r = .40$	$\beta = .31$
Bertoldi (2001) USA	Clinical – adult outpatients, aged 18-77 ( $N = 100$ ; $n = 60$ female; $n = 25$ psychotic disorder, $n = 60$ affective disorder, $n = 9$ anxiety disorder)	Cross-sectional	ISS TOSCA-2	BSI (PI)	Maladaptive shame-proneness positively correlated with paranoia; shame-proneness positively correlated with paranoia; shame-proneness positively associated with paranoia controlling for guilt, sex, ethnicity and diagnosis	$r = .53$ $r = .29$	$\beta = .69$



Johnson et al. (2014) UK	Clinical – aged 16-25, not diagnosed with psychotic disorder ( $N = 60$ ; $n = 42$ female)	Cross-sectional	ESS	SSPS	Total shame, characterological and behavioural shame positively correlated with paranoia; total shame associated with paranoia adjusting for stressful events; shame moderates the association between stressful events and paranoia	$r = .46$ $r = .45$ $r = .37$	$R^2 = .31$ $\Delta R^2 = .14$
Morris et al. (2011) UK	Clinical – in-patients and out-patients experiencing persecutory delusions ( $N = 36$ adults; $n = 18$ female)	Cross-sectional	ESS	SAPS	The ‘bad me’ paranoia group scored significantly higher than the ‘poor me’ paranoia group	$d = 0.91$ $\Delta POMP = 24\%$	
Connor & Birchwood (2013) UK	Clinical – diagnosis of schizophrenia or related disorder ( $N = 74$ voice-hearers; 59.5% male)	Cross-sectional	OAS	SCI-PANSS VPD	Shame positively associated thematic content of affiliation with voices controlling for depression; shame and FSCS “hated self” positively associated with VPD controlling for depression, self-correction, self-persecution, inadequate self, reassuring self		$\beta = .26$ $\beta = .38$
Castilho et al. (2015) Portugal	Non-clinical – general population, mean age 32.67, $SD = 11.15$ ( $N = 208$ ; $n = 98$ female)	Cross-sectional	OAS - Portuguese	GPS Portuguese	External shame positively correlated with paranoia; external shame a significant predictor of paranoia co-varying age, years of education and depression	$r = .62$	$\beta = .40$
El-Jamil (2003) USA)	Non-clinical – students ( $N = 188$ ; $n = 91$ from two American universities in Lebanon, $n = 97$ from two American universities)	Cross-sectional	TOSCA	BSI	Shame not correlated with paranoia	$r = .09$	
Matos et al. (2012) Study 1 Portugal	Non-clinical – student population from Portuguese university ( $N = 292$ ; $n = 259$ female)	Cross-sectional	OAS Portuguese ISS Portuguese	PC Portuguese	Centrality of shame memory positively correlated with severity of paranoid symptoms; centrality of shame memory associated with PC frequency covarying centrality of fear and sadness memories; centrality of shame memory associated with PC distress covarying centrality of fear and sadness memories	$r = .17-.38$	$\beta = .23$ $\beta = .29$
Matos et al. (2013) Portugal	Non-clinical – Portuguese community population ( $N = 328$ ; $n = 220$ female)	Cross-sectional	OAS Portuguese ESS Portuguese	GPS Portuguese	External shame positively correlated with paranoia; internal shame positively correlated with paranoia; centrality of shame memory positively correlated with paranoia; SEM path analysis - external shame the strongest predictor of paranoia controlling for traumatic impact of shame memory and internal shame	$r = .61$ $r = .46$ $r = .45$	$\beta = .42$
Pinto-Gouveia et al. (2013) Portugal	Non-clinical – Portuguese community population ( $N = 204$ ; $n = 144$ female)	Cross-sectional	CES Portuguese	GPS Portuguese	Centrality of shame memory moderately associated with paranoia	$r = .39$	

Pinto-Gouveia et al. (2014) Portugal	Non-clinical – Portuguese community population ( $N = 255$ ; $n = 174$ female)	Cross-sectional	OAS Portuguese ISS Portuguese	GPS Portuguese	Shame traumatic memory positively correlated with paranoia; external and internal shame positively correlated with paranoia; external shame associated with paranoia controlling for depression, submissive behaviour, early life experiences and trauma symptoms	$r = .45$ $r = .52$ $r = .50$	$\beta = .32$
Sombke (2001) USA	Non-clinical – student population aged 17-44 from two universities ( $N = 301$ ; $n = 133$ from Utah State University, $n = 93$ female; $n = 168$ from Louisiana State University, $n = 104$ female)	Cross-sectional	ASGS PFQ-2	SCL-90-R (PI)	Paranoia positively correlated with shame	$r = .42-.54$	
Zlotkin (1994) USA	Non-clinical ( $N = 126$ ; $n = 64$ females; $n = 40$ low paranoia and $n = 40$ high paranoia)	Cross-sectional	DES	SCL-90-R MMPI-2-R (Paranoia)	Shame greater in the high paranoia group compared to the low paranoia group	$d = 0.95$ $\Delta POMP = 18\%$	
Guimón et al. (2007) Portugal	Mixed clinical & non-clinical ( $N = 172$ ; $n = 79$ psychiatric patients; $n = 15$ psychotic, $n = 20$ depressive, $n = 12$ bipolar; $n = 15$ anxiety, $n = 17$ personality disorder; $n = 93$ students,)	Cross-sectional	TOSCA	DSM-IV	Shame less in schizophrenia group compared to depressive group and healthy controls	$d = 1.11$ $\Delta POMP = 17\%$  $d = 0.94$ $\Delta POMP = 12\%$	
Lincoln et al. (2015) Germany	Mixed clinical & non-clinical – aged 18-65 ( $N = 95$ ; $n = 37$ psychotic disorders, $n = 30$ depressive disorders; $n = 28$ healthy controls)	Cross-sectional	ERSQ-ES	DSM-IV MINI PANSS CAPE	Shame greater in those with psychosis compared to those with depression and healthy controls	-	
Michail & Birchwood (2013) UK	Mixed clinical and non-clinical ( $N = 135$ ; $n = 60$ FEP, $n = 20$ FEP with SAD, $n = 31$ non-psychotic SAD; $n = 24$ age-matched healthy controls)	Cross-sectional	OAS	SCAN ICD-10 PANSS	No statistically significant difference between FEP and controls for shame	$d = 0.32$ $\Delta POMP = 6\%$	
Suslow et al. (2003) (Germany)	Mixed clinical and non-clinical ( $N = 68$ ; $n = 30$ schizophrenia with flat affect, $n = 30$ schizophrenia with anhedonia, $n = 28$ schizophrenia no flat affect/anhedonia ( $n = 30$ healthy controls)	Cross-sectional	DES	DSM-IV (SCID-I) German SANS	Shame greater in anhedonic schizophrenia group compared to healthy controls	$d = 1.16$ $\Delta POMP = 16\%$	

*Note.* Table layout organised into clinical/non-clinical/mixed clinical/non-clinical samples and by measurement of overall psychosis or specific psychotic/psychotic-like experiences. ISS = Internalised Shame Scale;

TOSCA-2 = Test of Self-Conscious Affect: Version 2; BSI = Brief Symptom Inventory; OAS = Other As Shamer scale; PANSS = Positive and Negative Syndrome Scale; OAS Portuguese = Other As Shamer scale:

Portuguese version; GPS Portuguese = General Paranoia Scale: Portuguese version; SCI-PANSS = Structured Clinical Interview for Positive and Negative Syndrome Scale; VPD = Voice Power Differential scale;

TOSCA = Test of Self-Conscious Affect; DSM-IV = Diagnostic and Statistical Manual-Fourth Edition; ESS = Experience of Shame Scale; SSPS = State Social Paranoia Scale; DSM-IV-TR = Diagnostic and Statistical Manual-Training Revision; ERSQ-ES = Emotion Regulation Skills Questionnaire; MINI= Mini-International Neuropsychiatric Interview; CAPE = Community Assessment of Psychic Experiences; ISS Portuguese = Internalised Shame Scale: Portuguese version; PC Portuguese = Paranoia Checklist; Portuguese version; ESS Portuguese = Experience of Shame Scale: Portuguese version; SCAN = Schedules for Clinical Assessment in Neuropsychiatry; ICD-10 = International Statistical Classification of Diseases and Related Health Problems: 10th Revision; SAPS = Scale for Assessment of Positive Symptoms; CES Portuguese = Centrality of Event Scale: Portuguese version; ASGS = Adapted Shame and Guilt Scale; PFQ-2 = Personal Feelings Questionnaire-2; SCL-90-R (PI) = Symptoms Checklist 90-R (Paranoid Ideation); DSM-IV (SCID-I) = Structured Clinical Interview for DSM-IV: German version; SANS = Scale for Assessment of Negative Symptoms; DES = Differential Emotions Scale; MMPI-2 = Minnesota Multiphasic Personality Inventory: Second edition.

Table 2.

*Risk of Bias Assessment*

Study	Unbiased selection of the cohort	Selection minimises baseline differences	Sample size calculated	Adequate description of the cohort	Validated method for ascertaining shame	Validated method for ascertaining psychosis	Outcome Blind to exposure	Missing data	Analysis controls for confounding	Analytic methods appropriate
Bertoldi (2001)	Partially	N/A	No	Yes	Yes	Yes	N/A	Yes	Partially	Yes
Birchwood et al. (2006)	Yes	Partially	No	Partially	Yes	Yes	Yes	Yes	No	Partially
Castilho et al. (2015)	No	N/A	No	Yes	Yes	Yes	N/A	Yes	Partially	Yes
Connor & Birchwood (2013)	Partially	N/A	No	Partially	Yes	Yes	Cannot tell	Yes	Partially	Partially
El-Jamil (2003)	Partially	N/A	No	Yes	Yes	Yes	N/A	Yes	Partially	Yes
Guimón et al. (2007)	Yes	Partially	No	Partially	Yes	Partially	N/A	Yes	No	Partially
Johnson et al. (2014)	Partially	N/A	Yes	Partially	Yes	Yes	N/A	Yes	Partially	Yes
Keen et al. (2017)	Partially	No	No	Partially	Yes	Yes	N/A	Yes	No	Yes

Lincoln et al. (2015)	Yes	Yes	No	Partially	Partially	Yes	Cannot tell	Yes	Partially	No
Matos et al. (2012) Study 1	Partially	N/A	No	Partially	Yes	Yes	N/A	No	Partially	Yes
Matos, Pinto-Gouveia, & Gilbert (2013)	Partially	N/A	No	Partially	Yes	Yes	N/A	Yes	Partially	Yes
Michail & Birchwood (2013)	Yes	Partially	No	Yes	Yes	Yes	Cannot tell	Yes	No	Yes
Morris et al. (2011)	Yes	Yes	No	Partially	Yes	Yes	Cannot tell	Yes	Partially	Cannot tell
Pinto-Gouveia et al. (2013)	Partially	N/A	No	Yes	Yes	Yes	N/A	Yes	Partially	Yes
Pinto-Gouveia et al. (2014)	Partially	N/A	Yes	Yes	Yes	Yes	N/A	Yes	Partially	Yes
Sombke (2001)	No	No	No	Partially	Partially	Partially	N/A	Yes	No	Yes
Suslow et al. (2003)	Partially	Partially	No	Partially	Partially	Yes	N/A	Yes	No	Yes
Turner et al. (2013)	Yes	No	No	Partially	Yes	Yes	N/A	Yes	Partially	Yes
Wood & Irons (2016)	Yes	N/A	Partially	Partially	Yes	Yes	No	Yes	Partially	Partially
Zlotkin (1994)	Partially	No	No	No	Partially	Yes	N/A	Yes	No	Partially

*Note.* Adequate follow-up period criteria not reported here as N/A for all studies

