Shame, Social Deprivation and the Quality of the Voice-Hearing Relationship

Carden, L. C. [1], Saini, P. [2,3], Seddon, C. [4], Evans, E. [5], and Taylor, P. J.[6]

[1] Single Point of Access, Mersey Care NHS Trust, Liverpool, L9 1EP
[2] NIHR CLAHRC NWC, Institute of Psychology, Health & Society, University of Liverpool, Liverpool, L69 3GB
[3] Natural Sciences and Psychology, Liverpool John Moores University, Liverpool, L3 3AF
[4] Liverpool Early Intervention Service, Mersey Care NHS Trust, Liverpool, L7 9NJ
[5] Bootle Community Mental Health Team, Mersey Care NHS Trust, Liverpool, L22 3XR
[6] Division of Psychology & Mental Health, University of Manchester, M13 9PL

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*Requests for reprints should be addressed to Dr Louise Carden, Single Point of Access, Clock View Hospital, 2a Oakhouse Park, Liverpool L9 1EP (e-mail: louise.carden@merseycare.nhs

Abstract

Objectives: Many individuals hold different beliefs about the voices that they hear and have distinct relationships with them, the nature of which may determine the distress experienced. Understanding what factors contribute to these beliefs and relationships and consequently the resulting distress is important. The current research examined whether shame and social deprivation, in a sample of adult voice-hearers, were related to the relationships that individuals had with their voices or the beliefs that they held about them. **Design:** The study utilised a cross-sectional, internet-based design. **Methods:** Eighty-seven adult voice-hearers from England were recruited to the online survey. Participants completed measures regarding shame, beliefs about voices and relationships with voices and provided demographic information and postcodes that were used to refer to Index of Multiple Deprivation data (IMD). **Results:** Social deprivation and shame were not associated. Shame was positively associated with variables describing negative voice-hearing beliefs/relationships but not positive voice-hearing beliefs/relationships. Principal component analysis (PCA) on the eight voice-hearing variables yielded two components related to positive and negative voice-hearing qualities. A multiple regression conducted on the two components identified that shame was only associated with negative voice-hearing qualities. **Conclusions:** The results suggest that therapies that target shame may be helpful when working with negative voice-hearing beliefs and relationships. Future research should utilise experimental or longitudinal designs to examine the direction of the relationship.

Keywords: Shame; Hearing Voices; Social Deprivation; Relationship

Practitioner Points:

- The results contribute to the limited research evidence available regarding the relationship between shame and voice-hearing.
- The results suggest the utility of psychological therapies which focus on shame such as compassion focused therapy and that conceptualise voices interpersonally such as cognitive analytic therapy.
- No conclusions can be made regarding causation. The sample size was relatively small and results cannot be generalised to other areas of the UK.
- Future research should utilise experimental and longitudinal designs to examine the impact of shame on voice-hearing experiences and to examine other factors that may predict shame.

Introduction

Hearing voices that others cannot hear is a common experience (Beavan, Read, & Cartwright, 2011) that is often associated with distress (Chadwick, Lees, & Birchwood, 2000). Understanding what contributes to positive and negative aspects of the voice-hearing experience is important, as such variables may determine the distress experienced. Research has identified parallels between voice-hearers' interpretations of their voices and the way they perceive themselves and others (Birchwood, Meaden, Trower, Gilbert, & Plaistow, 2000). Individuals who feel more powerless, inferior or of low social rank tend to attribute similar characteristics to their relationship with their voices (ibid.). Shame and social deprivation are two factors that are related to social rank (Gilbert & McGuire, 1998; Wilkinson & Pickett, 2009), one internal and subjective, and the other external and objective. This study examines the relationship between these factors and positive and negative aspects of the voice-hearing experience.

The term "hearing voices" has been adopted by user-led groups such as the Hearing Voices Network (Corstens, Longden, McCarthy-Jones, Waddingham, & Thomas, 2014) to describe auditory verbal hallucinations, "any percept like experience which a) occurs in the absence of an appropriate stimulus, (b) has the full force or impact of the corresponding actual (real) perception, and (c) is not amenable to direct and voluntary control by the experiencer" (Slade & Bentall, 1988, p. 23). Hearing voices is a common experience, with a systematic review of the literature identifying that an average of 13.2% of the general population hear voices at some point during their life course (Beavan et al., 2011). Despite some voice-hearers' reporting intimacy and companionship within their voice-hearing relationships (e.g., Nayani & David, 1996; Romme & Escher, 2000) many individuals state that their voices cause them distress (Birchwood et al., 2000; Birchwood et al., 2004; Chadwick & Birchwood, 1994). Understanding what contributes to this distress is important.

Cognitive approaches suggest that individuals' beliefs about the identity and meaning of their voices (e.g., voice as omnipotent and powerful, voice as malevolent and harmful; Chadwick & Birchwood, 1994) has a resulting impact on levels of distress (Peters, Williams, Cooke, & Kuipers, 2012). Distress arising from voice-hearing may be understood according to the individuals' relationship with their voice, specifically where relating was characterised by subordination to a dominant other (Birchwood & Chadwick, 1997). Birchwood and colleagues (2000) examined the voice/voice-hearer relationship drawing on social rank theory (Gilbert & Allan, 1998) and noted that differences in power and rank identified in the voice/voice-hearer relationship were mirrored in the differences observed between voice-hearers and significant others in their social world. This suggests that if a person feels inferior to others in their external world, this dynamic is likely to emerge in terms of how they relate to their voices (i.e., voices as superior or judging, the individual as inferior). Individuals often attribute their voice to others and personify their voices with certain individualities (Chadwick, Birchwood, & Trower, 1996; Leudar, Thomas, McNally, & Glinski, 1997). This has led to the incorporation of interpersonal schemata in theories of voice-hearing (Birchwood et al., 2000; Birchwood et al., 2004).

Relational conceptualisations of the voice-hearing experience have developed beyond dimensions of power and rank, to consider the notion that individuals can form an interpersonal relationship with their voice (Benjamin, 1989), in the same way they form relationships with people in their external world. Birtchnell's theory of relating (1996; 2002) proposes that relating and interrelating occur on orthogonal intersecting axes of proximity (close and distant) and power (upperness and lowerness) and asserts that individuals can relate positively or negatively with regards to any four positions. This framework has been used within studies to examine the voice-hearing relationship. Findings have suggested that relating to voices is associated with external social relationships (Hayward, 2003) and levels of distress, with

greater levels of distress reported in those who attempt to distance themselves from voices that are perceived to be more dominant and intrusive (Sorrell, Hayward, & Meddings, 2010; Vaughan & Fowler; 2004). The Voice and You scale (VAY; Hayward, Denney, Vaughan, & Fowler, 2008) was developed based on relating theory as a measure to assess interrelating between the voice-hearer and their predominant voice.

Shame is an interpersonal emotional state that is characterised by feelings of inferiority, defectiveness and negative evaluation of the self (Feiring, Taska, & Lewis, 2002; Lewis, 1971; Tangney & Dearing, 2003), which has been defined as an emotional manifestation of low social rank – one's sense of status in relation to others (Birchwood et al., 2004; Gilbert et al., 2010). As such, shame could be expected to impact on how voices are perceived, with a mirroring between the emotion of shame and individuals' relationships with their voices. Hence those who feel more shame may also see their voices as more hostile or dominating. Voices are often perceived to be dominant and shaming and or to have access to shaming information about the individuals (Birchwood et al., 2004; Byrne, Trower, Birchwood, Meaden, & Nelson, 2003; Chadwick & Birchwood, 1994; Nayani & David, 1996). Relationships have been identified between the power of the voice and behavioural tendencies associated with shame, notably the desire to escape and hide (Gilbert et al., 2001). Despite growing interest regarding the psychological, evolutionary, and phenomenological aspects of shame and voice-hearing (McCarthy-Jones, 2017; Woods, 2017), little research has investigated shame in relation to specific psychotic symptoms, and none has explored how shame effects the relationship individuals hold with their voices. If relationships with voices mirror external interpersonal patterns then we would predict that shame, which is characterised by perceived inferiority, would be mirrored in a voice-hearing relationship also characterised by inferiority relative to the voice.

Social deprivation can be described as lacking the material and social resources that are

customary in the societies to which individuals belong (Townsend, 1993). It can be conceptualised as an external marker of social rank, much in the way that shame may be an internal marker of positioning or status. Within the literature relationships between social deprivation and shame have been described (Peacock, Bissell, & Owen, 2014; Wilkinson & Pickett, 2009). Psychosis is associated with greater levels of social deprivation (Kirkbride, Jones, Ullrich, & Coid, 2014), though the direction of this relationship remains unclear, and could be bi-directional. Social deprivation may be a product of downward social drift (Goldberg & Morrison, 1963) whereby psychosis may lead to greater social deprivation, but deprivation also increases risk of psychosis (Harrison, Gunnell, Glazebrook, Page, & Kwiecinski, 2001; Read, Bentall, & Fosse, 2009; Wicks, Hjern, Gunnell, Lewis, & Dalman, 2005). Once again we might predict that being in a low status and deprived position in the outside world would again be mirrored by a more negative relationship with voices. It is possible that external deprivation affects the voice-hearing relationship through its impact on emotional states like shame.

For many individuals, the experience of hearing voices can be a major source of distress, notably in terms of the content, meaning ascribed, and the relationship between the hearer and the voice. The current research aims to explore the possible psychosocial determinants of this relationship, focusing on shame and social deprivation as putative correlates of voice relationship. This study may provide an understanding of why voice-hearers feel a certain way in relation to their voices and inform social policy and intervention.

Hypotheses:

1. Shame will be positively associated with negative voice-hearing qualities (malevolence, omnipotence, dominance, intrusiveness, and hearer distance).
2. Shame will be negatively associated with positive voice-hearing qualities (benevolence and positive relating).

3. Social deprivation will be positively associated with shame.
4. Shame will mediate the association between social deprivation and negative voice-hearing qualities.

Method

Participants

One-hundred and seventy-one participants were recruited to the online study. Eighty-eight participants completed part of the questionnaire and 73 the whole questionnaire (see Figure 1). Recruitment was through multiple sources to maximise the identification of individuals who hear voices. Posters were placed in Community Mental Health Teams and Early Intervention services in three NHS Trusts (Mersey Care, Cheshire and Wirral and North West Boroughs) and the researcher attended trust locations to disseminate information to professionals. The study was advertised on relevant websites (e.g., Hearing Voices Network, ISPS), social media (Twitter, Facebook) and the researcher attended NHS and Hearing Voices Network hearing voices groups to advertise the research.

Participants must have heard at least one voice, irrespective of any mental health diagnosis. Individuals hearing a single voice or multiple different voices were both eligible for the study. The voice(s) must have occurred for at least one month and must have been a current experience at the time of participation. The voice(s) could produce a word or words, but also other utterances that could be attributed to a being (e.g., laughing, crying). Other auditory hallucinations that could not be related to an individual (e.g., machine noises) were not classed as a voice. The voice(s) may have been perceived as human or non-human (e.g., god) or viewed as a product of psychosis or illness. Only participants aged 18 and above, who lived in England and who could understand or speak English were eligible for recruitment into the study. Adherence to inclusion criteria was determined by participant self-report.

[INSERT FIGURE 1 HERE]

Measures

Social deprivation data.

Participants provided their full current post code. This information was entered in to GeoConvert (Office for National Statistics, 2015) to refer to the English Indices of Multiple Deprivation data 2015 (IMD; Department for Communities and Local Government, 2015). GeoConvert cross-references the participant postcode with an existing database of deprivation data and the corresponding IMD score, rank and decile is obtained. A total of 38 indicators over seven domains (income, education, health, employment, living environment, access to services and crime) are used to obtain the IMD score, which was used in this case. The greater the IMD score, the more deprived that area is. Participants also answered three scaling questions designed to measure subjective perceptions of social deprivation (in comparison to others in the UK, others in their community, and how deprived others may perceive them to be). Participants were asked to answer the questions according to a sliding scale (0 = lowest standing, to 100 = highest standing). These questions were included as the researchers were interested not only in the level of deprivation in each area but also the perceptions of the participants taking part. Whilst these items have not previously been validated they have face validity, and are similar to other measures of subjective social status (Cundiff, Smith, Uchino, & Berg, 2013).

The Experience of Shame Scale (ESS; Andrews, Qian, & Valentine, 2002).

The ESS is a 25-item self-report questionnaire that measures experiences of shame

(over the past year) in relation to three aspects of shame: characterological shame, behavioural shame, and bodily shame. In the current study, characterological shame was utilised as the overall measure of shame. This type of shame was considered to be most relevant in relation to the focus of the current research. Participants are required to answer items in relation to how they have felt in the past year. Each response is rated on a 4-point scale (1 = not at all, to 4 = very much). The 3-factor structure is supported in the literature in addition to the construct validity and discriminant validity of the ESS total scale and its component subscales (Andrews et al., 2002). In the current study the ESS characterological subscale demonstrated good internal reliability (Cronbach's α = .95; McDonald's ω = .95).

Beliefs About Voices Questionnaire-Revised (BAVQ-R; Chadwick, Lees, & Birchwood, 2000).

This measure contains 35-items relating to an individual's beliefs about their voices, and the behavioural and emotional responses that they have to them. There are five subscales; three subscales relating to beliefs: omnipotence, malevolence and benevolence; and two subscales relating to an individual's behavioural and emotional responses: resistance or engaging. Only the omnipotence, malevolence and benevolence subscales were used in the current study. Responses are indicated according to a 4-point Likert scale (0 = disagree to 3 = strongly agree). The authors report construct validity with strong negative correlations identified between most subscales. In the current study Cronbach's α range = .81-.89 and McDonald's ω range = ..83-.89.

Voice and You scale (VAY; Hayward, Denney, Vaughan, & Fowler, 2008).

The VAY is a 29-item measure of the relationship between a voice-hearer and their predominant voice that was developed from the theoretical underpinnings of Birtchnell's (1996, 2002) relating theory. There are four subscales within the VAY, two which contain items regarding the hearers' relationship with their voice (distance and dependence), and two which contain

items relating to the hearer's perception of the voice's relationship with them (dominance and intrusiveness). Responses are indicated according to a 4-point scale (0 = nearly always true, to 3 = rarely true). The authors report good internal reliability (Cronbach's α range = .92-.77), test-retest reliability (*r* = .91-.72), and concurrent validity with other measures of voice-hearing (*r* = .87-.48). In the current study the VAY demonstrated good internal reliability (Cronbach's α range = .84-.94; McDonald's ω range = .83-.94).

Positively-framed relational items to accompany the Voice and You scale.

Eight items to capture positive relating to voices (e.g., voices as comforting/entertaining) were developed to be included in the study. With reference to service user advice and to the relevant literature this was noted to be important, yet underrepresented in the measures used. The items were developed with the assistance of two individuals (females aged 25 and 60) with lived experience of hearing voices and upon consultation of existing literature. Responses were indicated according to a 4-point Likert scale (0 = disagree, to 3 = strongly agree). In the present study, the scale demonstrated good internal reliability (Cronbach's α =.92; McDonald's ω = .93).

Procedure

Ethical approval was obtained from the NHS Research Ethics Committee. An online survey was created utilising the Qualtrics survey platform (Qualtrics, 2017). Research suggests that online recruitment methods are superior to offline methods in terms of efficiency and cost (Christensen et al. 2017) and result in larger voice-hearing sample sizes (Berry, Band, Corcoran, Barrowclough, & Wearden, 2007a; Lawrence, Jones, & Cooper, 2010). Those choosing to take part in the survey were asked to read the study information and provide informed consent prior. Participants were then asked to provide demographic information (including the postal code of their current address) before completing the battery of measures. At the end of the study participants were given the option of entering a prize draw and receiving

a summary of the results.

Power Calculation and Data Analysis

According to Fritz & Mackinnon (2007) the sample size required to detect a medium indirect (mediated) effect with 80% power using the bias-corrected bootstrap method was n = 71. A power calculation was conducted using G* Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) to compute the achieved power for a sample size of 71 participants for a linear multiple regression with four predictors being tested with a medium effect size based on associations between shame and psychosis identified in the literature. The analysis suggested that power obtained for this sample size would be .99.

Data analysis was conducted using SPSS v24 (IBM, 2016). Study data was prepared by coding the data for the analysis, generating total subscale scores for each measure and conducting mean imputation on data that had less than 20% of data missing from each scale. Non-parametric Spearman's correlational analyses were performed to explore relationships between the variables, as variables were non-normally distributed. To adjust for multiple testing Bonferroni correction was applied. A principal component analysis (PCA) was performed to test the validity of summing the voice-hearing variables and creating total summary scores to capture the shared contribution of the voice-hearing variables. Oblique rotation (promax) was used as components were expected to be correlated. A multiple linear regression was conducted to test the relationship between shame and voice hearing variables. Confidence intervals were generated via bias-corrected bootstrapping with 5000 resamples as tests of assumptions identified non-normally distributed residuals. Cronbach's alpha was supplemented with McDonald's Omega as a measure of internal reliability, due to the problems with the rarely met assumptions of the former index (e.g., equivalent factor loadings; Cho & Kim, 2015). Omega was calculated in Mplus 7.4 (Muthén & Muthén, 1998-2011).

Results

Participant Characteristics

Eighty-seven adult participants were recruited to the study, four participants were excluded due to questionable responses (three failed catch questions designed to identify false responding, and one was from Canada, not the UK). Nine participants left prior to completing the study, four of whom did not complete any of the questionnaires and five participants that did not continue past the first questionnaire. This left a sample of 74 participants, whose age ranged from 18 to 65 years old (N = 73; M = 37.8; SD = 12.4), there were 50 females, 21 males, and 3 individuals that characterised themselves as 'other'. Table 1 provides demographic information. In the remaining sample there was up to 21.6% missing data per variable, with the largest amount of missing data for the subjective social deprivation items (missing for n = 9 - 16), and up to 9.5% missing data for the remaining items. The IMD score in the sample ranged from 1 (in the least deprived 10%) to 77 (in the most deprived 10%). Table 1 provides the distribution of deprivation across the sample grouped into 20% brackets. As can be seen there was a broad range within the sample from those living in the most to the least deprived areas.

[INSERT TABLE 1 HERE]

Principal Components Analysis

When examining the relationships between social deprivation, shame and the voice-hearing variables, a high degree of intercorrelation was identified amongst the voice-hearing variables. Therefore, it was useful to ascertain if these numerous lower-order subscales could be combined into a smaller number of higher-order variables, capturing key dimensions in voice-hearing quality. To do this a principle component analysis (PCA) with oblique rotation (promax) was conducted on the eight variables from the VAY, the BAVQ-R, and the positively-framed relational items to accompany the Voice and You scale. The Kaiser–Meyer-

Olkin statistic verified the adequacy of the sample for analysis, KMO = .79 ('good' according to Field, 2009). Bartlett's test of sphericity $x^2(28) = 473.62$, $p < .01$, indicated that correlations between variables were large enough for PCA. Two components had eigenvalues over 1 and in combination explained 82.3% of the variance. The scree plot also demonstrated inflexions that would justify retaining two components. Table 2 demonstrates the pattern matrix factor loadings after rotation (converging 3 iterations). All standardised component loadings were high (> .4; Costello & Osborne, 2005).

The variables that clustered on to Component 1 were voice-hearing beliefs and relationship variables that could be described as representing negative voice-hearing qualities; voice dominance, voice intrusiveness, hearer distance, malevolence, and omnipotence. The variables that clustered on to Component 2 were voice-hearing beliefs and relationship variables that represented positive voice-hearing qualities; benevolence and positive-relating items. The subscales within each of the components were then summed to obtain two new variables, one providing a total score for positive voice-hearing qualities (Cronbach's α = .86; McDonald's ω = .88) and the other providing a total score for negative voice-hearing qualities (Cronbach's α = .88; McDonald's ω = .90). Hearer dependence was excluded from the summing of the two new scales due to problematic cross-loading across both Components 1 and 2.

[INSERT TABLE 2 HERE]

Correlational Analyses

Spearman's correlations were conducted on the eight voice-hearing variables, positive voice-hearing qualities, negative voice-hearing qualities, social deprivation, and shame (Table 3). Consistent with hypothesis one, significant positive associations were identified between shame and several negative voice-hearing variables (dominance, intrusiveness, hearer distance, omnipotence, and malevolence). Results did not support hypothesis two; there was no

association between shame and positive voice-hearing variables (benevolence and positive items). Shame was not associated with social deprivation (Hypothesis 3) and therefore, the hypothesized indirect effect of social deprivation on the quality of the voice-hearing relationship via shame was not supported (Hypothesis 4). However, significant associations were identified between shame and all subjective deprivation items.

[INSERT TABLE 3 HERE]

Regression Analysis

Multiple regression analyses were conducted with either positive or negative voice-hearing qualities as the outcome, and number of voices (ordinal variable rated from 1 = "1 voice" to 4 = "10 or more"), length of time hearing voices (rated from 1 = "1-6 months" to 9 = "41 years and above"), and characterological shame entered as predictors (Table 4). This analysis allowed us to examine the independent association that positive voice-hearing qualities and negative voice-hearing qualities had with shame, accounting for their overlapping variance and adjusting for other potential confounders. Assumptions were tested utilising histograms, P-P plots, and scatterplots. No outliers were identified according to a Cook's distance value of < 1, a standardized DFβ < 1. Residuals were not normally distributed and therefore, bias-corrected and accelerated confidence intervals were generated via bootstrapping with 5000 resamples, to allow inferential testing. The regression model explained 19% of the variance in negative voice-hearing qualities (R^2= .19, F(3, 67) = 5.21, p < .01) and 18% of the variance in positive voice-hearing qualities R^2= .18, F(3, 67) = 0.74, p = .53). Shame was only associated with negative voice-hearing qualities, predicting 18% of the variance. This analysis was repeated adjusting for age and sex (female = 1; other = 0), see Table 4, but produced equivalent findings.

[INSERT TABLE 4 HERE]

Discussion

The primary aim of this study was to examine whether shame and social deprivation were associated with the quality of the voice-hearing relationship and if so, whether a mediational model could explain this association. Correlational hypotheses were partially supported. No relationship was identified between shame and social deprivation, yet associations were identified between shame, subjective ratings of deprivation and several of the voice-hearing variables. Additional analyses identified two higher order variables relating to positive and negative voice-hearing qualities. Shame was only associated with negative voice-hearing qualities.

In the current study, objective social deprivation was not identified as an important factor in relation to the beliefs that individuals had regarding their voices or the relationships that they had with them. This is consistent with previous research using IMD data that has identified significant associations between deprivation and paranoia but not auditory hallucinations (Wickham, Taylor, Shevlin, & Bentall, 2014). Objective social deprivation was not related to shame, yet subjective deprivation was significantly associated with both shame and negative voice hearing qualities. Subjective deprivation also had no relationship with objective social deprivation. The relationship between subjective and objective social status is complex and appears to vary with the population studied (Shaked, Williams, Evans & Zonderman, 2016). In the current study, subjective perceptions of social deprivation were moderately associated with shame. This suggests that personal evaluations of material and social resources are more relevant in relation to shame and voice-hearing than the material and social resources available in the area that individuals live within. It may also be that the same cognitive-evaluative process that underlies feelings of shame influenced judgements of subjective deprivation, since both shame and subjective social status relate to common judgements about ones status or positions in the world. Importantly, the subjective social

deprivation scales have not been previously validated, and further evidence of their psychometric quality is needed.

Consistent with hypotheses, several of the negative voice-hearing variables were positively associated with shame. However, there was a high degree of inter-correlation between the belief and relational variables suggesting that they contained a large proportion of shared variance. Other research has also identified large inter-correlations between belief and relational voice-hearing subscales (Sorrell, Hayward, & Meddings, 2010), suggesting that these variables may load onto a set of common dimensions or constructs. To address this question, future studies could use factor analysis, in larger samples, to examine the structure of these constructs.

The current findings support the notion of a mirroring between voice-hearers' experiences of shame and the quality of the voice-hearing relationship. Specifically, that where voice-hearers experience feelings of inferiority and defectiveness in relation to the self, this is mirrored in the voice being experienced as powerful, dominant, harming, and intrusive. This is consistent with research that describes an emotional mirroring of the relationship between the voice-hearer/voice and significant others in their external world (Birchwood et al., 2004). As expected, relationships between shame and voice-hearing were only identified in the context of negative voice-hearing qualities, suggesting that positive voice-hearing qualities are not impacted by shame and can thrive despite the presence of this negative emotion. This supports the notion that those who experience shame and negative voice-hearing qualities may also experience positive voice-hearing qualities. This fits with qualitative accounts of voice-hearers who describe coexisting positive and negative voice-hearing experiences; for example, voices that are perceived to provide companionship, despite being distressing (Mawson, Berry, Murray & Hayward, 2011; Romme & Escher, 2000).

The direction of the relationship between shame and negative voice-hearing qualities remains unclear. It could be that experiences of shame across the life course inform the quality of the voice-hearing relationship. This is consistent with previous research that identifies associations between traumatic and shaming life adversities and voice-hearing (Bentall, Wickham, Shevlin, & Varese, 2012; Longden, Madill, & Waterman, 2012a). However, it could be that the quality of the voice-hearing relationship contributes to and reinforces voice-hearers' experiences of shame and inferiority, in keeping with qualitative accounts (Mawson et al., 2011). In the current study shame was treated as the predictor variable within regression analyses. However, as the study was cross-sectional the direction of effect cannot be inferred and future longitudinal work is needed.

The present study contributes to existing literature that identifies the importance of shame in relation to voice-hearing. The findings suggest that interventions that target shame such as compassion-focused therapy (Gilbert, 2009) or that address negative voice-hearing beliefs such as cognitive behavioural therapy for psychosis (CBTp) may be helpful. Interventions such as acceptance and commitment therapy that help individuals to non-judgmentally acknowledge distressing experiences whilst pursuing valued goals, and mindfulness, which focuses upon changing the nature of the relationship that individuals have with their voices, may also play a role in relation to reducing the emotional dysfunctional associated with psychosis (Aust & Bradshaw, 2017; Gumley et al., 2017; White et al., 2011; White et al., 2015). Results suggest the use of therapies that address the interpersonal relationship between the voice-hearer and the voice such as relating therapy (Hayward, Overton, Dorey, & Denney, 2009) or cognitive analytic therapy (CAT; Ryle, 1995), which has several features that suggest its suitability for working with experiences of psychosis (Taylor, Perry, Hutton, Seddon, & Tan, 2014). The findings imply that HVN support groups that facilitate voice-hearers to develop a sense of meaning regarding their experiences in a safe and

supportive environment, where positive and trusting external social relationships can be developed may also be effective (Dillion & Hornstein, 2013; Oakland & Berry, 2015; Payne, Allen, & Lavender, 2017). Indeed, recent research has begun to examine how CBTp and HVN approaches may complement one another (Kay, Kendall, & Dark, 2017). Furthermore, results suggest the importance of clinicians providing a therapeutic space for individuals to discover what their voice/s represent using frameworks such as the Maastricht Interview (Romme & Escher, 2000) and that they support individuals to identify and change the nature of the relationship that they have with their voice/s.

Some limitations were identified in relation to the current study. As previously mentioned, the study design was cross-sectional thus making inference about direction of effect impossible. Despite achieving the minimum sample size recommended by the power analysis, a relatively small sample size was utilised. This prevented more advanced statistical techniques such as structural equation modelling (SEM) that may have allowed for the creation of latent variables and simultaneous consideration of multiple outcomes. The study was conducted online limiting the sample to those who have internet access. This may have resulted in selection bias; however, it is worthy to note that advertisements were placed in some locations with online facilities for those without personal access.

The positively-framed relational voice-hearing questions developed for the purposes of the study were not previously piloted and the psychometric properties were unknown. There were a larger proportion of females in the sample, which may again affect generalisability. Furthermore, there were differences in the time period that the questionnaires utilised examined. However, this is a cross-sectional study and the ESS, VAY and BAVQ-R all ask participants to consider how they felt at the time of the study, with the ESS asking participants to consider the past year in addition to this. The IMD data was published at the time of the study in 2015 with census data from 2012. To examine whether the IMD data would be accurate

for use participants were asked to indicate how long they had been living at their address. Only a small number of participants had lived at their address for less than the time period that had elapsed.

Future research should further delineate the role of shame in relation to hearing voices using experimental or longitudinal research designs. Specifically, this should involve larger sample sizes, should address specific negative relational and belief qualities, and should utilise more advanced statistical techniques that are able to better model the shared variance between specific voice-hearing variables. Furthermore, research should aim to identify other proximal relational and environmental factors that are related to current experiences of shame, and contribute to ongoing negative voice-hearing experiences.

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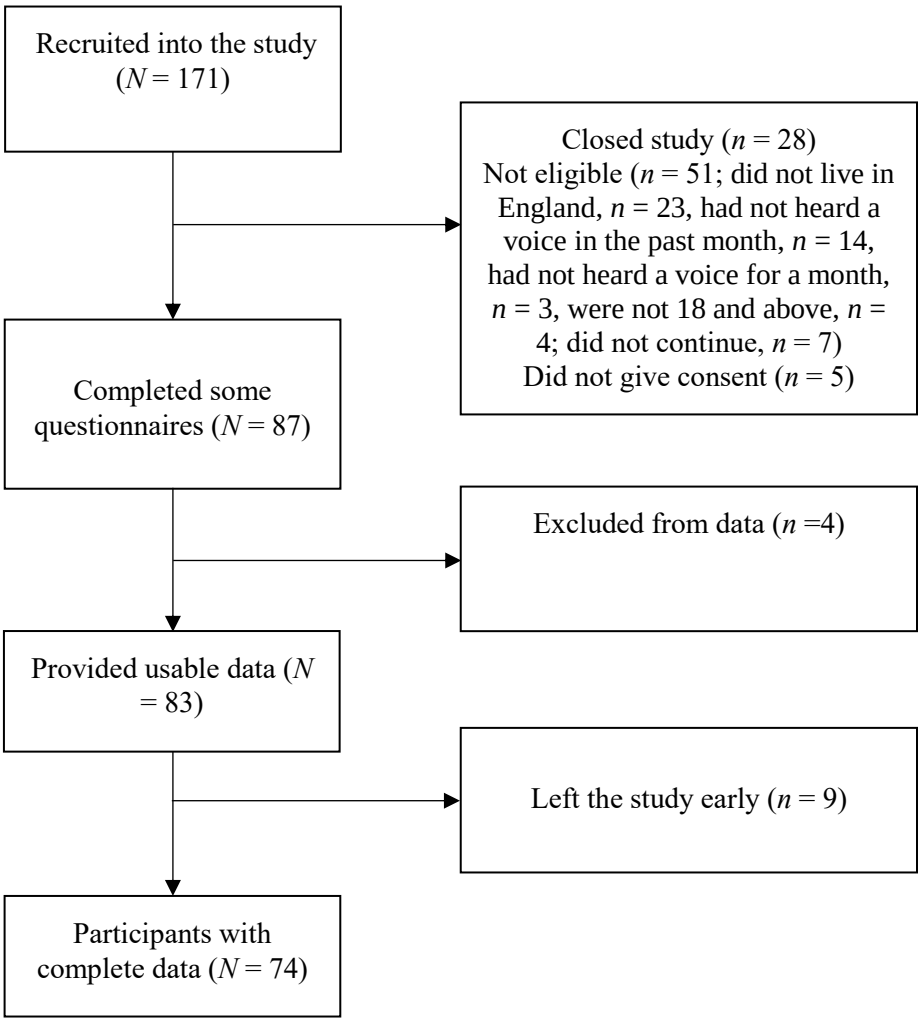

Figure 1. Flow chart of participation.

Table 1

Participant Characteristics

Variable	*n*	%
Gender (female)	50	67.6
Employed	33	44.6
Student	11	14.9
Given mental health diagnosis	55	74.3
Taking mental health medication	50	67.6
Deprivation (IMD decile)[a b]		
Bottom 20%	18	24.3
20-40%	17	23.0
60-80%	12	16.0
Top 20%	10	13.5

Note. [a] Deciles of relative social deprivation derived from the Indices of Multiple Deprivation, where bottom 20% represents the most deprived. [b] Participant numbers for deprivation data do not equal 74 as a result of missing data.

Table 2

Factor Loadings for Principal Component Analysis with Promax Rotation of the Eight Voice-Hearing Variables (Pattern Matrix)

Variable	Component	
	1	2
Omnipotence	**.94**	.19
Voice intrusiveness	**.85**	.14
Malevolence	**.84**	–.26
Voice dominance	**.80**	–.26
Hearer distance	**.44**	–.70
Positive items	–.05	**.93**
Benevolence	–.10	**.88**

Note. Factor loadings > .40 are in boldface and indicate loadings on to each component.

Table 3

Spearman's Non-Parametric Correlations for the Eight Voice-Hearing Variables, Social deprivation and Shame

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Voice dominance	1														
2. Voice intrusiveness	.56** [a]	1													
3. Hearer dependence	.07	.38** [a]	1												
4. Hearer distance	.65** [a]	.45** [a]	–.33**	1											
5. Malevolence	.80** [a]	.60** [a]	.07	.59** [a]	1										
6. Benevolence	–.47** [a]	–.19	.49** [a]	–.67** [a]	–.49** [a]	1									
7. Omnipotence	.65** [a]	.66** [a]	.47** [a]	.39** [a]	.75** [a]	–.20*	1								
8. Positive items	–.43** [a]	–.05	.63** [a]	–.63** [a]	–.43** [a]	.76** [a]	–.04	1							
9. Characterological shame	.51** [a]	.31**	.33**	.24*	.43** [a]	-.08	.44** [a]	-.02	1						
10. IMD score	-.07	–.08	–.10	.10	.01	–.12	.07	–.07	–.04	1					
11. Sub dep (UK)	–.18	–.39** [a]	–.29*	-.10	–.19	.07	–.28*	.03	–.40** [a]	–.20	1				
12. Sub dep (Community)	–.19	–.50** [a]	–.44** [a]	–.10	–.16	.02	–.43** [a]	-.04	–.35*	–.02	.70** [a]	1			
13. Sub dep (Others)	–.25	–.43** [a]	–.36**	–.06	–.26*	.04	–.44** [a]	.03	–.42** [a]	–.09	.70** [a]	.84** [a]	1		
14. Positive voice qualities	–.47** [a]	–.11	.62** [a]	–.70** [a]	–.48** [a]	.89** [a]	–.09	.96** [a]	–.01	–.07	.04	–.03	.03	1	
15. Negative voice qualities	.91** [a]	.75** [a]	.12	.74** [a]	.92** [a]	–.51** [a]	.81** [a]	–.42** [a]	.47** [a]	.03	–.26*	–.31*	–.34**	–.48** [a]	1

Note. * $p < .05$, two-tailed. ** $p < .01$, two-tailed; [a] $p < .003$ (alpha adjusted by Bonferroni correction); sub dep = subjective deprivation

Table 4

Multiple Linear Regressions with Characterological Shame as a Predictor of Voice-Hearing Variables

	Positive voice-hearing qualities			Negative voice-hearing qualities		
Predictor variable	B	CI (95%)	β	B	CI (95%)	β
Model 1						
Shame**	-0.04	-0.33, 0.25	-.03	0.98	0.44, 1.60	.42
Number of voices	2.61	-0.99, 6.13	.18	-0.98	-8.35, 7.55	-.03
Length of time hearing voices	-0.11	-1.29, 1.01	-.02	1.10	-1.00, 3.07	.10
Model 2						
Age	-0.25	-0.52, 0.01	-.27	0.04	-0.63, 0.63	.02
Sex (female)	-1.47	-7.80, 4.44	-.06	-2.34	-12.70, 8.24	-.04

Shame**	-0.11	-0.41, .20	-.10	1.10	.35, 1.72	.43
Number of voices	1.93	-1.63, 5.38	.14	-0.75	-8.74, 8.49	-.03
Length of time hearing voices	0.70	-0.87, 2.31	.13	1.04	-1.67, 3.68	.09

Note. ** $p < .01$, two-tailed; CI = Bias-Corrected and accelerated Confidence Intervals estimated via bootstrapping with 5000 resamples