Negative cognitions about the self in patients with persecutory delusions: An empirical study of self-compassion, self-stigma, schematic beliefs, self-esteem, fear of madness, and suicidal ideation

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A B S T R A C T

There has been growing awareness of the high prevalence of negative cognitions about the self in patients with persecutory delusions, and it has been proposed that paranoid fears build upon these perceived vulnerabilities. This study aimed to investigate for the first time a wide range of different conceptualisations of the negative self, and to examine associations with suicidal ideation, in patients with persecutory delusions. Twenty-one patients with persecutory delusions and twenty-one non-clinical individuals completed measures relating to negative self cognitions. The delusions group also completed a measure of suicidal ideation. It was found that the patients with persecutory delusions had low self-compassion, low self-esteem, increased fears of being mad, beliefs of inferiority to others, negative self-schemas, and low positive self-schemas when compared to the non-clinical control group. The effect sizes (Cohen’s d) were large, and the different conceptualisations of negative self cognitions were highly associated with one another. Self-stigma did not differ between the two groups. Furthermore, suicidal ideation was highly associated with low self-compassion, low self-esteem, fears of madness, and negative self-schema but not self-stigma. This study shows marked negative self cognitions in patients with persecutory delusions. These are likely to prove targets of clinical interventions, with patient preference most likely determining the best conceptualisation of negative self cognitions for clinicians to use.

1. Introduction

Three recent literature reviews have all confirmed a connection of paranoia to negative cognitions about the self (Garety and Freeman, 2013; Kesting and Lincoln, 2013; Tiernan et al., 2014). It has been hypothesised that paranoia builds upon the sense of vulnerability that low self-worth triggers (Freeman et al., 2005). Consistent with this, a longitudinal study with 301 patients with psychosis indicated that negative self beliefs predict the later severity of persecutory delusions (Fowler et al., 2012). Furthermore, two experimental studies by our group show that in individuals with paranoid ideation the induction of negative self cognitions leads to an increase in paranoia (Freeman et al., 2014a; Atherton et al., 2016). This has led to a clinical test of targeting negative self beliefs in patients with persecutory delusions (Freeman et al., 2014b). Although there are multiple ways that negative self cognitions can be conceptualised, studies have mainly focussed upon negative self beliefs and low self-esteem. In this paper we examine five concepts together in patients with persecutory delusions: 1). self-compassion, 2). schema, 3). self-stigma, 4). fears of madness and 5). self-esteem. Further, we examine their links to the clinically important problem of suicidal ideation in patients with psychosis.

1.1. Five conceptualisations of negative self cognitions

Self-compassion has been defined by Neff (2003a) as comprising three components: self-kindness versus self-judgement in our responses to pain or failure, common humanity versus isolation when understanding one’s own suffering, and being mindful versus over-identification when paying attention to our own suffering (Neff, 2003a). Self-compassion involves an open, non-judgemental stance to our own pain and suffering, which is viewed as part of the human condition and promotes self-kindness (Neff, 2003b). Two recent meta-analyses have found that self-compassion is an important explanatory variable in understanding psychopathology and wellbeing (MacBeth and Gumley, 2012; Zessin et al., 2015).

Eicher et al. (2013) found in a study of 88 participants with either schizophrenia or schizoaffective disorder that higher scores

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on the self-compassion scale were negatively associated with positive symptoms of psychosis. Qualitative accounts from patients with psychosis highlight the potential role of self-compassion in facilitating recovery in psychosis (Waite et al., 2015). Current research studies have found positive outcomes for compassion-focused therapy for psychosis (Mayhew and Gilbert, 2008; Braehler et al., 2013). However, these studies have not focused on reducing symptoms of psychosis, and they do not focus specifically on persecutory delusions. Mills et al. (2007) found in a study of 131 students that paranoia was significantly negatively correlated with scores on the self-compassion scale (Neff, 2003a), indicating in particular the presence of self-judgement, isolation, and over-identification in those with higher paranoia scores. Hutton et al. (2013) found that a group of 15 patients with persecutory delusions were significantly less likely to self-reassure compared to non-clinical controls. These authors propose that a decreased capacity to self-reassure may activate perceptions of threat. Lincoln et al. (2013) found in an experimental study that a brief compassion focused manipulation decreased paranoid thoughts in a non-clinical population. However, no studies have yet specifically explored levels of self-compassion in a clinical group of people with persecutory delusions, although specific elements have been examined in one study (Hutton et al., 2013).

Negative self-schema, defined as stable negative self-evaluations which influence the individual’s interpretation of situations (Beck et al., 1979), is a concept well-established in depression research (Beck, 1967). In contrast to self-compassion, their potential role in paranoia has been tested in cross-sectional (e.g. Gracie et al., 2007; Smith et al., 2006), longitudinal (e.g. Fowler et al., 2011; Oliver et al., 2012; Freeman et al., 2013b) and experimental studies (e.g. Freeman et al., 2008), using the Brief Core Schema Scale (Fowler et al., 2006). In a recent pilot randomised controlled trial with patients with persecutory delusions, there was evidence that targeting negative self cognitions may lead to reductions in paranoia (Freeman et al., 2014b). To date negative self beliefs have been most strongly connected to paranoia, compared to, for example, self-esteem (Fowler et al., 2006).

The experience of mental health problems often leads to further difficulties for how people view themselves. Self stigma is the internalisation of harmful stereotypes, which results in a reduction in self-esteem (Link and Phelan, 2001; Corrigan and Watson, 2002; Corrigan et al., 2011). Corrigan et al. (2011) propose that internalising stereotypes about mental illness, for example concerning dangerousness and poor recovery rates, decreases self-esteem in individuals with serious mental health difficulties. In a study of 49 people with schizophrenia, self-stigma was associated with low self-esteem (Rodrigues et al., 2013). No studies to date have explored self-stigma and persecutory delusions specifically.

A specific type of self-stigma in relation to mental health problems is the fear that one is ‘mad’, and in a cross-sectional study higher levels of fears of madness have been associated with greater distress associated with persecutory delusions (Bassett et al., 2009). Typical fears of madness are concerns that one is unable to tell the difference between reality and imagination, worrying that the mind is falling apart, and a fear of being locked up forever. Fear of recurrence of psychosis is a predictor of the development of psychosis-related post-traumatic stress disorder (White and Gumley, 2009). Gumley et al. (2015) found that fear of recurrence of psychosis was associated with increased risk of relapse and increased emotional distress, suggesting that individual’s idiosyncratic appraisals may influence relapse.

Finally, self-esteem has been considered as a central factor in the occurrence of persecutory delusions, with differing views on whether paranoia reflects a defence against low self-esteem (Bentall et al., 2001) or is a direct reflection of low self-esteem (Freeman et al., 2002). Multiple studies, but not all, demonstrate that low self-esteem is present in patients with persecutory delusions (e.g. Combs et al., 2009; Freeman et al., 1998). For instance, in a study of 154 participants who ranged across the continuum of paranoia, paranoia was found to be associated with lower self-esteeem, and fluctuations in self-esteem were predictive of paranoia (Thewissen et al., 2008). Findings from studies on self-esteem interventions for people with psychosis have demonstrated improvements in positive symptoms (Lecomte et al., 1999; Hall and Tarrier, 2003) which may also lend support for a connection between self-esteem and positive symptoms of psychosis.

1.2. Persecutory delusions and suicide

It is estimated that approximately 5% of patients with psychosis commit suicide (Hor and Taylor, 2010). Paranoid ideation in the general population too is associated with suicidal ideation (Freeman et al., 2011). To our knowledge there are no psychological studies of specific psychological constructs that are associated with suicide specifically in patients with persecutory delusions. But an association has been established between suicidal ideation and hopelessness as predictors for attempted and completed suicide in psychosis (Klonsky et al., 2012; King et al., 2001). Turner et al. (2012) found an association between internal and external shame associated with psychosis, and symptoms of trauma in fifty patients with psychosis, who were not acutely psychotic at the time. Internal shame was also associated with depression (Turner et al., 2012), suggesting that shame may be a key emotion in depression in psychosis. Fialko et al. (2006) found that suicidal ideation in people with psychosis was associated with depressed mood, low self-esteem, and negative beliefs about the self and others, pointing towards negative self-cognitions as an important link to suicidal ideation. Overall, these findings highlight the importance of considering suicidal ideation in relation to negative self-cognitions in individuals with persecutory delusions.

The current study set-out to examine these five different conceptualisations of negative self cognitions specifically in patients with persecutory delusions. It was hypothesised that patients with persecutory delusions, compared to non-clinical controls, would demonstrate negative self-schema, self-stigma, fears of madness, low self-compassion and low self-esteem. Of these constructs,
associations with self-esteem were expected to be the smallest, since it has been argued that some studies have not shown associations between clinical paranoia and low self-esteem (Bentall et al., 2001). We did expect the different constructs to be highly correlated. Finally, we hypothesised that negative self cognitions in participants with persecutory delusions will be associated with suicidal ideation.

2. Method

A cross-sectional, between-groups comparison was conducted.

2.1. Participants

Twenty-one control participants were recruited from a participant pool. The participant pool was developed from respondents to a previous advert for participation in studies (Freeman et al., 2013b). The non-clinical control participants had no self-reported history of a mental health problem. They completed measures online using Qualtrics (Smith et al., 2011).

2.2. Measures

2.2.1. Measures of psychotic experiences

2.2.1.1. Psychotic Symptom Rating Scale – Delusions (PSYRATS) (Haddock et al., 1999). The PSYRATS is a 6 item assessment of preoccupation, conviction, distress and disruption associated with the delusion over the previous fortnight. Higher scores indicate greater delusional severity. The PSYRATS has good reliability and validity for the assessment of delusions in participants with psychosis (e.g. Drake et al., 2007).

2.2.1.2. The Positive and Negative Syndrome Scales (PANSS) (Kay et al., 1987). The PANSS is a 30 item interviewer-rated tool to assess psychiatric symptom severity present in the previous 72 h. Ratings are delivered using a 7 point scale (1-7). Higher scores are indicative of increased symptom severity. Kay (1991) found good reliability and validity for the PANSS in a cohort of 101 participants with schizophrenia.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean rank</th>
<th>Mean scores (standard deviation)</th>
<th>U score</th>
<th>p Value</th>
<th>Effect size (d)</th>
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<tbody>
<tr>
<td>Brief Core Schema Scale Negative self (BCSS-N)</td>
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<td>Self-Stigma of Mental Illness Scale (SSMIS)</td>
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<td>Mental Health Worries Questionnaire (MHWQ)</td>
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Table 2

Means, standard deviations, t values, confidence intervals, p values, and effect sizes for measures of negative self-cognition.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Clinical</th>
<th>Non-Clinical</th>
<th>t Value (df)</th>
<th>Confidence interval (95%)</th>
<th>p Value</th>
<th>Effect size (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Compassion Scale (SCS)</td>
<td>2.40 (0.53)</td>
<td>3.64 (0.92)</td>
<td>-5.34 (40)</td>
<td>-1.72 to -0.77</td>
<td>&lt;0.001</td>
<td>1.51 (large)</td>
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<tr>
<td>Brief Core Schema Scale Positive self (BCSS-P)</td>
<td>6.60 (4.71)</td>
<td>14.95 (4.73)</td>
<td>-5.65 (39)</td>
<td>-11.34 to -5.37</td>
<td>&lt;0.001</td>
<td>1.76 (large)</td>
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<tr>
<td>Social Comparison Scales (SCS)</td>
<td>11.95 (5.63)</td>
<td>21.10 (4.49)</td>
<td>-5.81 (40)</td>
<td>-12.32 to -5.96</td>
<td>&lt;0.001</td>
<td>1.79 (large)</td>
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<td>Rosenberg Self Esteem Scale (RSES)</td>
<td>3.48 (0.43)</td>
<td>5.46 (0.43)</td>
<td>-3.74 (38)</td>
<td>-6.81 to -0.77</td>
<td>0.001</td>
<td>1.03 (large)</td>
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<tr>
<td>Beck Suicide Scale (BSS)</td>
<td>2.58 (0.58)</td>
<td>4.65 (0.58)</td>
<td>-3.74 (38)</td>
<td>-6.81 to -0.77</td>
<td>0.001</td>
<td>1.03 (large)</td>
</tr>
<tr>
<td>Beck Depression Inventory (BDI)</td>
<td>1.54 (0.38)</td>
<td>2.73 (0.38)</td>
<td>-3.74 (38)</td>
<td>-6.81 to -0.77</td>
<td>0.001</td>
<td>1.03 (large)</td>
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Table 3

Mean ranks, mean scores, U scores, p values, and effect sizes for measures of negative self.

<table>
<thead>
<tr>
<th>Measure</th>
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<th>Non-clinical</th>
<th>Measure</th>
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Table 4

Correlations of suicide with negative self-constructs and depression.

|---------------------------|------------------------|----------------------|-------------------------------|-----------------------------------|--------------------------------|-----------------------------------|---------------------------------|
2.2.13. **Persecution and Deservedness Scale** (PaDS) (Melo et al., 2009). This is a 10 item self-report measure of the severity of paranoid thinking and the level of perceived deservedness for the persecution. Only the section on persecution was employed in this study. Higher scores represent greater levels of persecutory ideation. The PaDS demonstrates high validity and reliability and is validated for use in clinical samples (Melo et al., 2009). The scoring for this measure uses a percentage as described by Melo and Bentall (2010).

2.2.2. **Measures of negative self cognitions**

2.2.2.1. **The Self-Compassion Scale** (SCS) (Neff, 2003a). The SCS is a 26 item self-report scale comprising statements (e.g. “I try to be loving towards myself when I am feeling emotional pain”) for which responses can range from 1 (Almost Never) to 5 (Almost Always). An overall self-compassion score is provided, as well as scores for sub-scales including self-judgment, isolation, over-identification, self-kindness, common humanity, and mindfulness. Scores for total self compassion were calculated by reverse scoring negative subscale items (self-judgement, isolation and over-identification) before calculating subscale means for all six subscales. An overall mean of all six subscale means was then computed, as suggested by Neff (2003a). Higher total self-compassion scores indicate greater self-compassion in times of distress. The SCS demonstrates good construct validity.

2.2.2.2. **The Brief Core Schema Scale** (BCSS) (Fowler et al., 2006). The BCSS is a 24 item self-report measure which assesses beliefs about self and others. Items are rated using a 0–4 scale, and comprises four factors (negative self, positive self, negative others and positive others) with a score given for each factor. Only the items related to self were included in this study. For the six items on negative self (e.g. “I am worthless”), the greater the total on this subscale, the greater the negative beliefs about the self. For the positive subscale (e.g. “I am respected”), the larger the total, the more positive beliefs a person holds. Addington and Tran (2009) concluded that the psychometric properties of the BCSS make it appropriate for use in this population.

2.2.2.3. **Self-Stigma of Mental Illness Scale** (SSMIS) (Corrigan et al., 2006). This 40 item measure comprises four subscales. Only the agreement subscale, which denotes the level to which people agree with stereotypes of mental illness, was employed in this study (e.g. “I think most persons with mental illness are to blame for their problems”). This was to investigate stigma about mental illness amongst people with and without persecutory delusions. Good internal consistency and concurrent validity for the measure has been established (Corrigan et al., 2006). Responses are given on a 9 point scale (9 = strongly agree). Higher total scores indicate greater endorsement of self-stigma (Corrigan et al., 2011).

2.2.2.4. **Mental Health Worries Questionnaire** (MHWC) (Bassett et al., 2009). This is a 20 item self-report measure of fears of madness and associated distress in the previous week (e.g. “I worry my mind is falling apart”). Responses relate to levels of distress associated with fears ranging from 0 (not at all) to 5 (extremely distressing) for each statement item. Initial findings have shown good reliability and validity for the scale (Bassett et al., 2009). Higher total scores represent greater levels of distressing fears about madness.

2.2.2.5. **Rosenberg Self-esteem Scale** (RSES) (Rosenberg, 1965). The RSES is the most used self-esteem measure and comprises ten items (e.g. “I feel that I’m a person of worth, at least on an equal plane with others.”). The higher the RSES score the lower self-esteem. A four point Likert scale of agreement (4: “strongly disagree”) is used for scoring. Items are totalled into an overall scale which has been shown to have good internal consistency in individuals with serious mental health problems (Corrigan et al., 2011; Corrigan et al., 2006).

2.2.2.6. **Social Comparison Scale** (SCS) (Allan and Gilbert, 1995). Participants’ beliefs about how they compare to others were measured using an adapted version of the Social Comparison Scale. This 19 item self-report scale asks participants to rate how they have felt in relation to others during the previous week, on items including inferior/superior and incompetent/competent. Eleven items were from the original scale (e.g. inferior versus superior) and eight items (e.g. failure versus success) were newly added.

2.2.3. **Measures of depression and suicidal ideation**

2.2.3.1. **Beck Depression Inventory** (BDI) (Beck, 1967). The BDI is a 21-item self-report measure of symptoms of depression over the past fortnight. Each item involves selecting one of four statements, with scores for each varying between 0 and 3. Higher total scores indicate higher levels of depression. Items tap cognitive distortions, hopelessness, suicidal ideation and physiological symptoms including fatigue. The BDI demonstrates good construct validity and reliability (Beck et al., 1991).

2.2.3.2. **Beck Scale for Suicidal Ideation** (BSS) (Beck and Steer, 1991). This is a 21-item self-report measure of thoughts, attitudes, and intentions about suicide. Items are rated on a three point scale (0 to 2), with a total possible score of 38. Higher total scores indicate higher levels of suicidal thinking. The measure has good internal reliability (0.96) and one study showed that the BSI had a test re-test reliability of 0.88 (p < 0.001) (Pinninti et al., 2002). In addition, Pinninti et al. (2002) found that the BSI was positively correlated with past suicide attempts (r = 0.46, p < 0.001) and recommended it for use with participants with psychosis.

2.3. **Analysis**

Data were analysed using the Statistics Package for Social Sciences (SPSS version 20) (IBM, 2011). For the first hypothesis, t-tests and Mann Whitney U tests were employed to test group differences on the self-concept measures, depending on whether assumptions for the use of parametric tests were met. A Cohen’s d calculation was used to determine effect sizes, in order to establish which negative self-concepts showed the largest group differences. For the second main hypothesis, associations with suicidal ideation for the self-concept measures within the clinical group were tested using Pearson’s r. Correlation coefficients were similarly used to examine associations between the individual self-concept measures. Power calculations to establish the required sample size were based on the Mental Health Worries Questionnaire (MHWQ) data from Bassett et al. (2009), which was the most similar study. It showed effect sizes (d) of 0.80. 80% power to detect such an effect size at the conventional significance level of 0.05 requires a sample size of 26 (G Power; Faul et al., 2007). All hypothesis testing was two-tailed.

3. **Results**

3.1. **Participant characteristics**

For the clinical group (n = 21) the mean age was 45.6 years (SD = 12.1; range: 21–66), compared to a mean age of 41.9 years (SD = 12.2; range: 22–61) in the control group (n = 21). The gender balance was the same in both groups (males n = 10; 48% and
females n=11; 52%). More participants in the clinical group were unemployed (n=18; 86%), compared with the control group (n=5; 24%). No significant difference was found between participants with persecutory delusions and control participants for age (t=10.88, df=30.06, p=0.10) or gender (χ²=0.00, df=1, p=0.74). However, there was a significant difference between the groups for employment status, with significantly fewer employed participants in the delusion group (χ²=14.40, df=1, p<0.001).

Table 1 summarises the clinical characteristics of the persecutory delusions group. For the PSYRATS, the clinical group scored comparably to other studies with patients selected for current persecutory delusions (e.g. Freeman et al., 2014b, 2014c). The scores on the PaDS for levels of persecutory ideation in this group were similar to those in a recent study by Melo and Bentall (2013), which found that the mean persecution score in a similar group was 70.23% (SD=17.37). The Beck Depression Inventory (BDI) was completed by both the group with persecutory delusions (mean=22.81; SD=11.43) and the control group (mean=6.43; SD=6.96) and a significant group difference was clearly apparent, U=47.00, p<0.001.

3.2. The self-concept in patients with persecutory delusions

Tables 2 and 3 summarise the group scores on the measures of self-concept. It can be seen that there were significant and clear group differences for all measures, apart from self-stigma. The persecutory delusion group had many more negative self-cognitions and fewer positive self-cognitions. The effect size differences were all large.

3.3. Suicidal ideation and negative self

Correlational analyses were conducted in order to investigate potential associations between suicidal ideation and the measures of self-cognitions (see Table 4). Suicidal ideation was highly associated with low self-compassion, low self-esteem, negative self-schema, and negative self-comparisons to others. Fears of madness and depression were also significantly related to suicidal ideation. Self-stigma was not related to current levels of suicidal ideation. It can also be seen in Table 4 that all the self-concept assessments, apart from self-stigma, were highly correlated with each other.

4. Discussion

The current study investigated a number of different conceptualisations of the negative self in patients with persecutory delusions, and also examined associations with the clinically important problem of suicidal ideation in this population. Findings suggested that negative self-cognitions in those with persecutory delusions are marked and globally low, however they are conceptualised. The findings in the delusions group are in line with previous studies (e.g. Fowler et al., 2012; Hutton et al., 2013). Patients with persecutory delusions experience severe feelings of being inferior to others, worry that they are mad, and have lower self-compassion. They have increased negative beliefs about themselves, decreased positive beliefs about themselves, low self-esteem, and low mood. The only construct which did not significantly differ between the two groups was self-stigma, which was an unexpected finding, although the relatively small sample size limited the power of the study to the detection of large effect size differences only. We conclude that negative self-concept in patients with persecutory delusions are a clear treatment target, and may well lead to consequent improvement in the paranoia.

The levels of suicidal ideation in the group with persecutory delusions were high, even compared to other studies of people with psychosis (e.g. Beck and Steer, 1991). Suicidal ideation was highly associated with low self-esteem, negative self-schema, fears of madness, and lower levels of self-compassion. The evidence of links between suicidal ideation and a range of negative self views is entirely plausible, and consistent with previous research that has utilised fewer self-concept assessments (e.g. Fialko et al., 2006).

Several important limitations must be considered in this study. The cross-sectional design means that it is not possible to determine cause and effect, and it may be argued by some that the findings related to negative self-cognitions in this study are simply a result of the high levels of depression and/or paranoia in the persecutory delusions group (i.e. the cognitions themselves are secondary to affect). One consideration was whether to conduct an analysis controlling for level of depression, but it has been argued that this would be highly likely to remove genuine variance of interest (see Miller and Chapman, 2001). The sample size also was insufficient to detect anything other than large differences between the measures. Further, although the groups were well matched for age and gender, the groups were clearly biased in terms of employment status, which would affect the scores. Future research would benefit from longitudinal studies in larger sample sizes. Although we believe that the pressing issue now is how best to treat negative self-cognitions in patients with psychosis (Freeman et al., 2014b, 2014c). A number of small studies have investigated treatment of negative self-cognitions, including self-compassion (Mayhew and Gilbert, 2008; Braehler et al., 2013) and self-esteem (Hall and Tarrier, 2003). However, these studies have not tested improvements in persecutory delusions specifically. The current findings suggest that there are several different ways in which negative self-cognitions associated with persecutory delusions may be framed. No single construct was identified as the key treatment direction, however, negative self-schema, self-compassion, self-esteem and negative self-comparisons to others were found to be most important. All constructs were highly inter-correlated, with the exception of self-stigma, which did not correlate with negative self-comparisons to others. Therefore, a flexible, individually tailored approach to improving self confidence in this patient group may be possible. We suspect that at this stage of knowledge, the language and concepts that best resonate with an individual patient may prove best to use in treatment.

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