Core Schemas across the Continuum of Psychosis: A Comparison of Clinical and Non-Clinical Groups

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Background: Research suggests that core schemas are important in both the development and maintenance of psychosis. **Aims:** The aim of the study was to investigate and compare core schemas in four groups along the continuum of psychosis and examine the relationships between schemas and positive psychotic symptomatology. **Method:** A measure of core schemas was distributed to 20 individuals experiencing first-episode psychosis (FEP), 113 individuals with "at risk mental states" (ARMS), 28 participants forming a help-seeking clinical group (HSC), and 30 non-help-seeking individuals who endorse some psychotic-like experiences (NH). **Results:** The clinical groups scored significantly higher than the NH group for negative beliefs about self and about others. No significant effects of group on positive beliefs about others were found. For positive beliefs about the self, the NH group scored significantly higher than the clinical groups. Furthermore, negative beliefs about self and others were related to positive psychotic symptomatology and to distress related to those experiences. **Conclusions:** Negative evaluations of the self and others appear to be characteristic of the appraisals of people seeking help for psychosis and psychosis-like experiences. The results support the literature that suggests that self-esteem should be a target for intervention. Future research would benefit from including comparison groups of people experiencing chronic psychosis and people who do not have any psychotic-like experiences.

Keywords: Continuum, psychosis, at risk mental state, prodrome, core schemas.

Introduction

A cognitive psychological model of psychosis suggests that responses to unusual psychotic-like experiences are cognitively mediated by maladaptive self-schemas and appraisals and also by self-beliefs (Garety, Kuipers, Fowler, Freeman and Bebbington, 2001). Research suggests that core schemas are important in (1) the development and the maintenance of psychosis and (2) the distress associated with it (Beck and Rector, 2003; Garety et al., 2001; Morrison, 2001). Krabbendam et al. (2002) argue that low self-esteem is a risk factor for psychosis, and other researchers implicate it in the development of persecutory delusions (Bentall and Kaney, 1996; Bentall, Kinderman and Kaney, 1994). Several other studies have also found strong relationships between poor self-esteem and serious mental health problems (Freeman et al., 1998; Silverstone and Salsali, 2003; Warner, Taylor, Powers and Hyman, 1989) and suggest that low self-esteem is related to poorer outcome in people experiencing a first episode of psychosis (FEP; Vracotas, Iyer and Malla, 2008). In examining self-esteem in psychosis, researchers have used measures like Rosenberg's (1965), which was developed for the general population (e.g. Fowler et al., 2006; Krabbendam et al., 2002; Silverstone and Salsali, 2003), and Robson's (1988, 1989), which was created with psychiatric populations in mind (e.g. Freeman et al., 1998; Hall and Tarrier, 2003; Jackson et al., 2009). However, these measures do not offer a direct assessment of "the negative self-evaluation construct consistent with contemporary schema constructs as applied to psychosis" (Fowler et al., 2006, pp. 750). In other words, many contemporary models of psychosis symptoms describe a role for the accumulation of ongoing, moment-to-moment negative self-evaluations into negative self-schemas that further impact upon a person's interpretation

of events and interactions in social situations; and it is these important negative self-schemas that are not measured by typical self-esteem scales. In addition, it has been argued that some of Rosenberg's self-esteem schedule is outdated and is psychometrically inadequate (Fowler et al., 2006; Keith and Bracken, 1996).

To address the fact that existing self-esteem questionnaires are unable to measure core schemas, Fowler et al. (2006) developed the Brief Core Schema Scales (BCSS). The items on the BCSS operationalize core schemas by specifically addressing a person's positive and negative beliefs about self and others. The researchers found that people who experience chronic psychosis report high levels of negative beliefs about the self and others. However, levels of positive beliefs about the self and others in the psychosis sample were similar to that in a student population (Fowler et al., 2006). A number of subsequent studies have used this measure with both clinical and non-clinical groups (Addington and Tran, 2009; Oliver, O'Connor, Jose, McLachlan and Peters, 2011; Stowkowy and Addington, 2012). Specifically, Addington and Tran (2009) found that the BCSS is appropriate for individuals experiencing an at-risk mental state (ARMS) and that such individuals appear to have high levels of negative schemas (see also Stowkowy and Addington, 2012). As yet, no published studies have compared core schemas in an ARMS group and a psychosis group. In non-clinical populations, negative schemas have been found to predict higher rates of delusional thinking (Oliver et al., 2011).

There is a strong emphasis in the current literature in understanding both the development and the maintenance of psychosis, and some researchers suggest that a cognitive style characterized by low self-esteem, neuroticism, worry or depression may increase the risk for developing psychosis (Krabbendam, Myin-Germeys, Bak and van

Os, 2005). Similarly, recent research offers some support to the theory that maladaptive schemas play a role in the onset of psychosis (Stowkowy and Addington, 2012). Therefore, it is important for us to understand what cognitive mechanisms may be shared by or distinguish the ARMS and the psychosis populations in order to improve our understanding of the development of psychosis and to discover targets for psychological interventions.

Aims

The aim of the current study is to investigate and compare core schemas in individuals experiencing FEP, individuals with ARMS, and a help-seeking clinical group who do not have ARMS (HSC), with a non-help-seeking (NH) group who endorse some psychotic-like experiences. We will also examine relationships among psychotic symptoms and core schemas.

We predicted that participants in all three clinical groups would score significantly higher on the negative-other (NO) and negative-self (NS) subscales of the BCSS compared to the NH group. Furthermore, participants in the NH group would score significantly higher than the clinical groups on the positive-other (PO) subscale and the positive-self (PS) subscales of the BCSS. We made no a priori predictions about differences amongst the clinical groups, but these were investigated in exploratory post hoc analyses. Furthermore, we predicted that, in general, the NO and NS subscales would be positively related to psychotic symptoms and the PS and PO subscales would be negatively related to psychotic symptoms.

Method

Participants

FEP group. Participants consisted of 20 help-seeking individuals who were referred to the Early Detection and Intervention Evaluation for people at high-risk of psychosis-2 trial, a multi-site randomized controlled trial of cognitive therapy for the prevention of psychosis (EDIE-2; Morrison et al., 2011, 2012) and were assessed as being above threshold for ARMS on the Comprehensive Assessment of the At-Risk Mental State (CAARMS; Yung et al., 2005). They had no prior history of psychosis.

ARMS group. This group consisted of 113 help-seeking individuals with no history of psychosis who were referred to EDIE-2 and met the criteria for ARMS on the CAARMS. Of these, 98 participants met the criteria for attenuated psychotic symptoms group, 8 met criteria for the family history group, and 7 met criteria for both attenuated symptoms and family history. No participants met criteria for the brief limited intermittent psychotic symptoms group.

HSC group. Participants consisted of 28 help-seeking individuals with no history of psychosis who were referred to EDIE-2 but were assessed as being below the threshold for ARMS on the CAARMS.

NH group. Thirty student participants who had endorsed schizotypy experiences as operationalized as a score of two on any item of the Community Assessment of Psychic Experiences (CAPE; Stefanis et al., 2002) as part of another postgraduate study were asked to participate in the present research. All NH participants were interviewed on the CAARMS, the results of which showed that, theoretically, 22 NH participants were subthreshold for ARMS while 8 met ARMS criteria (for attenuated symptoms). This

sample represents a population who have psychotic-like experiences (PLEs) but who do not seek help for those experiences, in contrast to our other participant groups. As this group is similar to the HSC and, to some extent, the ARMS group in terms of their CAARMS data, differences that exist between this group and the others on the measures studied here should hopefully help to explain why some individuals who experience PLEs seek help and others do not.

The groups vary greatly in participant numbers as the ARMS group was recruited through participation in EDIE-2. Participants for the FEP and HSC groups were recruited by convenience sampling individuals who were referred to but did not meet assessment criteria for EDIE-2; also recruitment of these participants began much later. For this reason, as well as resource constraints, the sizes of the FEP, HSC and NH groups are much smaller than the ARMS group.

Measures

The Comprehensive Assessment for At Risk Mental States (CAARMS; Yung et al., 2005). The CAARMS is a standardized clinical interview that has been developed (1) to determine if an individual meets criteria for having ARMS and (2) to assess psychopathology thought to indicate imminent development of psychosis. The CAARMS has seven categories, each of which consists of multiple sub-scales. For the purpose of this study and of determining if someone meets the ARMS criteria, only the first category, Positive Symptoms, and its four subscales (Unusual Thought Content (e.g. delusional mood), Non-Bizarre Ideas (e.g. specific delusional ideas), Perceptual Abnormalities, and Disorganized Speech) were used (see also Morrison et al., 2011,

2012). For each subscale, scores for severity of experiences, frequency of experiences, influence of substances on experiences, and distress at symptoms are given. In the current study, scores for severity and distress were used when examining relationships between the CAARMS and the BCSS subscales. Testing of the instrument to date has shown good to excellent validity and reliability and, specifically, good interrater reliability (ICC of overall CAARMS score = .85; Yung et al., 2005).

Brief Core Schema Scales (BCSS; Fowler et al., 2006). The BCSS is a 24-item self-report assessment that aims to measure beliefs about the self and others in psychosis. Items are rated on a 5-point rating scale (0–4). Four scores, each with six items, are obtained: negative-self (NS), positive-self (PS), negative-other (NO) and positive-other (PO). The BCSS has been described as having good internal consistency (Cronbach's alpha = 0.78-0.88; Fowler et al., 2006).

Procedure

All participants were interviewed on the CAARMS by a trained research assistant working for the EDIE-2 trial. Data from the trial used here were collected over a 2.5 year period across five sites in the UK by 17 different research assistants (including HT). Interrater reliability for the CAARMS was assessed at eight time points during the trial, and the intraclass correlation coefficient (0.90, $SD = 0.03$) showed good reliability (see Morrison et al., 2011, 2012). Information on age, gender, years of full-time education, and ethnicity was collected. Participants then completed the BCSS.

Analysis

All analyses were performed in SPSS 19.0 (IBM Corporation, 2010). Non-parametric tests were used where they were appropriate. To test for differences in the distribution of gender and ethnicity, chi-square tests were used. For differences in age and education, the Kruskal-Wallis test was used. For the main hypotheses, a one-way ANOVA was employed for the positive-other scale, while the Kruskal-Wallis test was used for negative-self, positive-self, and negative other. We adjusted for multiple hypothesis testing by applying a Bonferroni correction for the four tests of the BCSS subscales ($\alpha = .0125$). We followed the Kruskal-Wallis test with pairwise comparisons and used the adjusted significance values. Effect sizes can be interpreted as follows: $\eta^2 = 0.01$ represents a small effect, $\eta^2 = 0.06$ represents a medium effect, and $\eta^2 = 0.14$ represents a large effect. Also, for both Cramér's V and *r*, an effect size of .1 is small, an effect size of .3 is medium, and an effect size of .5 is large.

For analysing the relationships among psychotic symptoms and core schemas, we correlated the severity and distress scores of each of the four CAARMS subscales with each of the four BCSS subscales. As this was 32 correlations, we present results both at $\alpha = .05$ and a Bonferroni corrected value of $\alpha = .0016$. With each CAARMS subscale, we used only those participants whose score was higher than zero on the severity scale, as the distress score is only completed when the severity score is higher than zero.

The participants in the current research participated simultaneously in research presented in Taylor et al. (in press, 2012). In the former they were compared on severity and distress for the subscales of the CAARMS as well as the Beck Depression Inventory for Primary Care (Winter, Steer, Jones-Hicks and Beck, 1999) and the Social Interaction

Anxiety Scale (Mattick and Clarke, 1998) and in the latter they were compared on the Metacognitions Questionnaire-Revised (Cartwright-Hatton and Wells, 2004), Interpretations of Voices Inventory (Morrison, Nothard, Bowe and Wells, 2004), and the Beliefs about Paranoia Scale (Gumley, Gillan, Morrison and Schwannauer, 2011). We attempted to control for family-wise error within this study but did not factor in the error that may result from multiple comparisons reported in the studies mentioned above. Readers should take note of the other comparisons when evaluating our results.

Results

Comparisons on demographic variables

Descriptive statistics for the demographic variables can be found in Table 1. Pearson's chi-square showed that there was a difference in the distribution of gender among the groups ($\chi^2 = 20.854$, $df = 3$, $p < .001$; Cramér's V = .331). The three clinical groups all had more males than females, while the NH group had more females than males. Because of the very small numbers of some minority ethnic groups, we compared the distribution of White versus Minority Ethnic individuals and found no difference among our participant groups using Fisher's Exact Test ($p = .238$; Cramér's V = .142). The Kruskal-Wallis test showed a significant difference for age ($\chi^2 = 11.867$, $df = 3$, $p < .01$; $\eta^2 = 0.063$). Pairwise comparisons revealed that the NH group was significantly older than the ARMS group ($p < .01$; $r = .267$). For education, the Kruskal-Wallis test showed a significant difference ($\chi^2 = 34.380$, $df = 3$, $p < .001$; $\eta^2 = 0.203$). The NH group had more years of education than the FEP ($p < .001$; $r = .583$), the ARMS ($p < .001$; $r = .475$), and the HSC groups ($p < .015$; $r = .411$).

[Insert Tables 1 and 2 about here]

Hypothesis testing

Descriptive statistics and a summary of the pairwise comparison results for the BCSS can be found in Table 2. For negative-self, the Kruskal-Wallis test was significant at our corrected level ($\chi^2 = 24.951$, $df = 3$, $p < .001$; $\eta^2 = 0.152$). The NH group scored significantly lower than the FEP ($p = .005$; $r = .495$), ARMS ($p < .001$; $r = .438$), and HSC ($p < .05$; $r = .380$) groups. There were no significant differences between the FEP and ARMS ($p = 1.000$; $r = .005$), the FEP and HSC ($p = 1.000$; $r = .134$), and the ARMS and HSC ($p = 1.000$; $r = .105$) groups.

There were also differences for positive-self ($\chi^2 = 26.677$, $df = 3$, $p < .001$; $\eta^2 = 0.164$) in which the NH scored significantly higher than the ARMS ($p < .001$; $r = .456$) and HSC ($p < .005$; $r = .474$) groups. There were no significant differences between the FEP and ARMS ($p = .719$; $r = .148$), the FEP and HSC ($p = 1.000$; $r = .152$), the FEP and NH ($p = .226$; $r = .306$), and the ARMS and HSC ($p = 1.000$; $r = .045$) groups.

For negative-other, the Kruskal-Wallis test was significant ($\chi^2 = 28.168$, $df = 3$, $p < .001$; $\eta^2 = 0.176$), and pairwise comparisons showed that the NH group scored significantly lower than the FEP ($p < .001$; $r = .650$), ARMS ($p < .001$; $r = .433$), and HSC ($p < .05$; $r = .375$) groups. There were non-significant differences between the FEP and ARMS ($p = 1.000$; $r = .018$), the FEP and HSC ($p = .373$; $r = .010$), and between the ARMS and HSC ($p = 1.000$; $r = .027$) groups. The ANOVA for positive-other was non-significant ($F(3, 158) = .202$, $p = .895$; $\eta_p^2 = 0.004$).

[Insert Tables 3 and 4 about here]

Descriptive statistics for each of the groups on the CAARMS severity and frequency can be found in Table 3, and results of the correlations between the CAARMS and the BCSS subscales can be found in Table 4. At $p < .05$, the following relationships were significant: UTC severity with NS ($r_s = .276$), NO ($r_s = .318$); NBI severity with NS ($r_s = .196$), NO ($r = .264$); NBI distress with NO ($r_s = .213$); PA severity with NO ($r_s = .209$); and DS severity with NS ($r_s = .196$) and NO ($r_s = .283$). Two correlations were significant at our Bonferroni corrected level: NBI distress with NS ($r_s = .299$) and PA distress with NO ($r_s = .320$). There were no relationships between UTC distress and core schemas or between DS distress and core schemas. There were also no relationships between psychotic symptoms and PS or between psychotic symptoms and PO.

Discussion

It has been suggested that the psychosis prodrome is characterized by low levels of self-esteem and that a cognitive style that includes low self-esteem, worry, depression or neuroticism may increase the risk of developing psychosis (Krabbendam, et al., 2002, 2005a, 2005b). The fact that our clinical groups all scored higher than the NH group on negative-self and that the ARMS and HSC groups (but not the FEP group) scored lower than the NH group on positive-self supports this idea. Further support comes from our previous findings that the clinical groups used in this study were significantly more depressed than the NH group (Taylor et al., in press). Therefore, the current study

supports the hypothesis that low self-esteem, negative beliefs about the self (and possibly fewer positive beliefs about the self), and depression are characteristic of prodromal and first-episode psychosis.

Interestingly, the scores for positive-self for the FEP group did not significantly differ from either the other two clinical groups or the NH group. The results of our correlational analysis were consistent; also, there were no relationships between positive-self and the CAARMS subscales. This sort of "middling" score is difficult to interpret but it does seem to be in contrast to their dysfunctional negative views of the self and depression (Taylor et al., in press). Our results suggest there was a small effect for the difference between the FEP and ARMS groups for this variable, with the FEP group experiencing higher positive-self scores Thus, it is possible that some of the FEP sample may have been experiencing some grandiosity, which may be reflected in the higher positive-self scores for that group. This is speculative, but the effect sizes suggest that future studies with greater power may find some interesting differences for positive-self.

Furthermore, our results demonstrate that higher levels of negative beliefs about others can distinguish clinical from non-clinical groups, which supports the idea that negative evaluations and mistrust of others can feed into the development of paranoia or suspiciousness on their own or in combination with negative evaluations of the self (Fowler, 2000; Trower and Chadwick, 1995). Future research could examine the specific relationships between paranoia and negative beliefs about others in both psychotic and ARMS populations, as Fowler et al. (2006) found strong links between negative-other schemas and paranoia in a NH population.

No significant differences were found between the groups for positive beliefs about others, which is in stark contrast to the differences found on the other three subscales. It may be that the other types of schemas measured by the BCSS are better discriminators between groups along the continuum of psychosis as positive-other seems to be weakly related to psychotic phenomena (Addington and Tran, 2009; Fowler et al., 2006). This idea is supported by the lack of significant relationships between positive-other and the CAARMS subscales.

The group differences we found for negative-self and negative-other were reinforced by the discovery of several significant relationships among the CAARMS subscales and the negative-self and negative-other subscales (though only the relationships between distress on non-bizarre ideas (i.e. specific delusional ideas) and negative-self, and between distress on perceptual abnormalities and negative-other remained significant after correcting for multiple testing). It seems that negative schemas, in particular, are associated with a range of positive psychotic symptoms and especially so with distress associated with non-bizarre ideas and perceptual abnormalities. Again, these findings support the idea that prodromal psychosis is characterized by low self-esteem and negative schemas (Krabbendam et al., 2002).

When interpreting the results, it is important to remember that there were also differences among the groups in terms of demographics: the clinical groups had proportionately more males than the NH group, the NH group had more years of education than the clinical groups, and the NH group was older than the ARMS group. However, a tendency towards maleness and towards fewer years of education (Kampman et al., 2004) is typical of individuals who suffer from or who are at risk of psychosis.

Such naturally occurring group differences are often found in clinical research where participants cannot be randomized (Miller and Chapman, 2001).

Our study attempted to contextualize the experiences of help-seeking clinical groups by comparing them to a non-help-seeking group experiencing PLEs. However, it is possible that recruiting the NH group from a student population meant that our sample was not representative of the population of individuals who experience PLEs but who do not seek help, particularly as we did not inquire about current or past mental health difficulties (including psychosis). Nonetheless, including NH samples like ours is beneficial to the evidence base for the continuum theory of psychosis and to improving our understanding and treatment of psychosis (van 't Wout, Aleman, Kessels, Larøi and Kahn, 2004).

Furthermore, although a fairly large sample was recruited for the ARMS group, the other groups were much smaller due to practical resource constraints, which meant that we were underpowered to detect small effects. Future research should endeavour to recruit more similar sample sizes as this is likely to result in more powerful analyses. In the future, studies of this kind may like to include other groups along the continuum of psychosis, such as a chronic psychosis sample and a non-clinical, non-help seeking group that endorses no PLEs, as well as examine the differences in schemas between ARMS individuals who transition to psychosis and those who do not.

This study has some clinical implications. The identification of elevated core schemas in the FEP and ARMS groups suggests that this may be an important target for CT in the ARMS and FEP populations, particularly given the high levels of negative beliefs about the self in both the ARMS and FEP groups; and previous research on self-

esteem in psychosis supports this idea (Hall and Tarrier, 2003, 2004; Laithwaite et al., 2007; Vracotas et al., 2008). Clinicians could easily integrate this approach into the CBT treatment package for the ARMS population as it is based upon the same cognitive model often used to treat people with psychosis (Morrison, 2001). Additionally, clinicians should be aware that some mental health procedures, like involuntary treatment, as well as the stigma attached to mental health difficulties, may damage self-esteem and may prevent people from seeking help (Link, Struening, Neese-Todd, Asmussen and Phelan, 2001; Sartorius, 2007; Swartz and Monahan, 2001). This may be particularly important for people experiencing prodromal or early psychosis who are likely to present with dysfunctional core schemas from the outset.

Our results also give insight into why some people seek help for mental health difficulties and others do not. Our HSC and NH groups were similar in terms of their CAARMS data (100% of the HSC group and 73.3% of the NH group were subthreshold for ARMS). However, the HSC participants sought help for their mental health difficulties and also were significantly different from the NH group in having more negative beliefs about the self and others and fewer positive beliefs about the self. Core schemas may an important factor in discriminating individuals who seek help for mental health difficulties versus those who do not, and they should be evaluated by clinicians.

To summarize, these results give us insight into core schemas across the psychosis continuum. The findings suggest that elevated levels of negative beliefs about the self and others are prominent in the FEP and ARMS populations and are associated with a range of positive psychotic experiences and the distress that results from those experiences. As psychological interventions are seen as more ethical over medication for

the ARMS population (Bentall and Morrison, 2002), core schemas are likely to be an important target for such interventions.

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Table 1. Demographic information for the four participant groups

	FEP	ARMS	HSC	NH
Number of participants	20	113	28	30
Age [*M* (*SD*)]	22.4 (5.4)	20.4 (4.3)	21.3 (3.4)	22.8 (3.7)
Age (Median)	20.0	19.0	21.0	22.0
Female (%)	26.3	40.7	17.9	73.3
Education in years [*M* (*SD*)]	12.9 (2.8)	13.0 (2.3)	14.1 (2.8)	16.8 (2.7)
Education (Median)	12.5	13.0	14.0	17.0
Ethnicity (%)				
White	78.9	89.2	85.7	76.7
Black	5.3	4.5	3.6	0
South Asian	10.6	3.6	0	0
Chinese	0	0	3.6	10.0
Other	5.3	2.7	7.1	13.3

Table 2. Means, standard deviations and medians for the BCSS subscales and pairwise comparison results

	FEP	ARMS	HSC	NH
Negative-self				
Mean (*SD*)	7.44 (5.16)	7.79 (6.22)	6.25 (5.97)	2.27 (2.69)
Median	6.00	7.00*	4.00*	1.50*
Summary of result of pairwise comparisons: FEP, ARMS, HSC > NH				
Positive-self				
Mean (*SD*)	10.75 (7.92)	7.69 (5.62)	8.38 (5.96)	14.20 (4.94)
Median	11.00	6.00*	6.50	14.50
Summary of result of pairwise comparisons: NH > ARMS, HSC				
Negative-other				
Mean (*SD*)	10.94 (4.37)	9.41 (6.78)	7.65 (6.28)	3.20 (3.77)
Median	11.00	8.50	6.00	2.00*
Summary of result of pairwise comparisons: FEP, ARMS, HSC > NH				
Positive-other				
Mean (*SD*)	10.56 (4.95)	9.49 (5.73)	9.38 (5.57)	9.83 (5.09)
Median	11.50	9.00	9.50	10.50

An asterisk (*) by the median indicates that the variable was non-normally distributed for that group.

Table 3. Means, standard deviations and medians for the participant groups on CAARMS severity and distress

	FEP	ARMS	HSC	NH
Unusual thought content (UTC)				
Severity mean (*SD*)	3.65 (2.30)	2.14 (1.99)	0.54 (0.84)	0.97 (1.67)
Severity median	4.50	2.00	0.00	0.00
Distress mean (*SD*)	69.13 (31.44)	47.32 (32.17)	51.67 (40.54)	20.00 (26.83)
Distress median	80.00	50.00	65.00	10.00
Non-bizarre ideas (NBI)				
Severity mean (*SD*)	4.50 (1.40)	3.36 (1.41)	1.50 (1.00)	1.43 (1.36)
Severity median	5.00	3.00	2.00	1.50
Distress mean (*SD*)	81.26 (26.52)	63.68 (29.23)	55.81 (33.45)	35.79 (29.36)
Distress median	90.00	70.00	70.00	40.00
Perceptual abnormalities (PA)				
Severity mean (*SD*)	4.65 (1.23)	2.50 (1.81)	1.79 (1.85)	1.50 (1.61)
Severity median	5.00	3.00	1.00	1.00
Distress mean (*SD*)	75.56 (34.00)	52.09 (33.13)	40.00 (29.94)	7.33 (11.78)
Distress median	90.00	53.50	40.00	0.00
Disorganized speech (DS)				
Severity mean (*SD*)	2.05 (1.43)	1.63 (1.44)	0.96 (1.04)	1.27 (0.94)
Severity median	2.00	2.00	0.50	2.00
Distress mean (*SD*)	32.91 (34.76)	32.35 (30.66)	28.36 (32.31)	17.00 (21.69)
Distress median	30.00	30.00	20.00	5.00

Table 4. Results of correlations among CAARMS and BCSS subscales

	NS	PS	NO	PO
UTC severity	.276*	-.029	.318*	-.012
UTC distress	.202	.059	.168	.086
NBI severity	.196*	-.126	.264*	-.105
NBI distress	.299**	-.108	.213*	-.092
PA severity	.076	-.011	.209*	.012
PA distress	.032	.015	.320**	.094
DS severity	.196*	-.023	.283*	-.108
DS distress	.184	-.119	.015	-.086

* = significant at $p < .05$; ** = significant at $p < .0016$