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Schizotypy, Alexithymia, and Socioemotional Outcomes

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Abstract

Studies have found higher levels of alexithymia in schizophrenic subjects relative to controls, with an overall higher level of emotional arousal and social withdrawal. The present study is an extension of this research to the assessment of schizotypy in a nonclinical sample. Seventy-two undergraduate students (40 female; 21.6 ± 6.38 years) were recruited to participate in this study. Consistent with earlier research, our results show that both schizotypy and alexithymia are associated with relatively poor socioemotional functioning across the variables of depression, anxiety, social functioning, and overall quality of life. Further, our results show that the significant associations found between alexithymia and these 4 outcome variables was predicated on shared variance with schizotypy. When both alexithymia and schizotypy were regressed onto these variables as independent predictors, the contribution of alexithymia was consistently nonsignificant. The implications of these findings are discussed in terms of hypothesized substrates of alexithymia.

Keywords

Schizotypy; alexithymia; schizophrenia; emotion; social functioning

Impaired processing of emotional information is one of the major areas of dysfunction in schizophrenia (Kohler and Martin, 2006; McKenna, 1994). Emotional processing impairments can be organized along the dimensions of affective expression, perception, and experience (Kohler and Martin, 2006; Van 't Wout et al., 2004). Deficits in emotional expression are inferred from difficulties in the ability to identify one's own emotional experience (Jaeger et al., 1990), coupled with impairment in both facial and tonal expression of emotions, which has been found to occur even when subjective emotional experience is intact or heightened (Kring et al., 1993; Myin-Germeys et al., 2000). In terms of emotion perception, schizophrenia is associated with deficits in affect recognition (e.g., Addington and Addington, 1998; Edwards et al., 2002) and with broader, related deficits in social cognition (Green and Leitman, 2008). In terms of emotional experience, schizophrenia has been associated with diminished ability to experience pleasure (Sass and Parnas, 2003), combined with heightened levels of negative affect (e.g., Kohler et al., 1998, 2000; Myin-Germeys et al., 2000).

Many of the emotional disturbances observed in schizophrenia overlap with the range of symptoms that have been conceptualized as part of the alexithymia construct. The term alexithymia (literally, “no words for feelings”) was coined by Sifneos (1973), who reported that patients manifesting psychosomatic symptomatology exhibit psychological characteristics quite different from those of neurotic patients, while sharing important similarities (such as heightened negative affect) with them. A pattern of symptoms was identified marked by deficits in the ability to identify and describe emotions, coupled with a tendency towards externally oriented and concrete thinking. Over the last 30 years, alexithymia has come to be conceptualized as a deficit in affect regulation based on deficits in (verbal) emotional expression and in emotion processing (Taylor et al., 1997; Van 't Wout et al., 2004). Alexithymia is common in patients suffering from a variety of disorders, including anorexia nervosa, obesity, substance abuse, depression, panic disorder, and post-traumatic stress disorder. Based on research using nonclinical samples, some scholars argue that alexithymia may best be considered a personality dimension, rather than a discrete categorical variable (Lindholm et al., 1990; Salminen et al., 1995).

Alexithymia has been reported to be associated with schizophrenia across a number of studies (Cedro et al., 2001; Maggini et al., 2002; Van 't Wout et al., 2007), and has been separately correlated with both the positive (Maggini and Raballo, 2004) and negative symptom dimensions (Nkam et al., 1997). In fact, schizophrenia and alexithymia possess many overlapping features, suggesting the possibility of shared pathophysiological underpinnings. As with schizophrenia, alexithymia is associated with negative affect, and is inversely associated with life satisfaction even when depression and other confounding factors are controlled for (Mattila et al., 2007). Analogous to the externalization of affect into physical symptoms that is a hallmark of alexithymia, individuals with schizophrenia are externally oriented, although on a more profound level. In particular, the content of both delusions and hallucinations has been shown to reflect core thoughts and feelings (Close and Garety, 1998). Disturbances in self-other differentiation (de Bonis et al., 1995) and dissociative symptoms (Ross, 2007) are well-established features of the schizophrenia phenotype, and both are associated with alexithymia (Blaustein and Tuber, 1998; Clayton, 2004). As in schizophrenia, moreover, alexithymic individuals are not only impaired in affect recognition and social cognition, but tend to exhibit relatively poor social functioning in general (Spitzer et al., 2005).

According to Taylor et al. (1997), the impairments in emotion-processing and emotion-regulating capacities associated with alexithymia may be a risk factor for a variety of medical and psychiatric disorders, including schizophrenia. Preliminary evidence for the hypothesis that alexithymia is a risk factor for schizophrenia is provided by Van 't Wout et al. (2007), who report that alexithymic emotional abnormalities observed in schizophrenia extend to unaffected first-degree relatives of patients. On this basis, they suggest that alexithymic deficits may contribute to greater vulnerability for schizophrenia.

Notably, psychosis-proneness, or schizotypy, is associated with many of the same emotional and social impairments that have been found for both schizophrenia and alexithymia, including increased levels of anxiety and depression, poor quality of life (QOL), and poor social functioning (Phillips and Seidman, 2008). There is also evidence that both the positive

and negative dimensions of schizotypy are associated with alexithymic impairment (Laroi et al., 2008; Van 't Wout et al., 2004). The Van 't Wout et al. (2007) study, in particular, suggests the possibility that, for a subset of individuals, alexithymic emotional deficits may be a direct expression of schizotypy. The relevant findings are preliminary, however, and the nature of the relationship between alexithymia, schizotypy, and various psychological outcomes is not yet well established.

The present study is an attempt to extend research on schizotypy and alexithymia using a nonclinical undergraduate sample. Do some individuals exhibit alexithymic traits as a function of schizotypy, as this construct has been operationalized in the literature, such that associations with shared outcome variables such as negative affect and poor social functioning are largely driven by the latter? Or do alexithymia and schizotypy exhibit independent effects? Following the work of Van 't Wout et al. (2007), this study will address the possibility that alexithymia is a risk factor for psychosis (i.e., contributes to psychosis-proneness), and is associated with schizotypy on that basis. We posit that some individuals who are vulnerable to developing schizophrenia-spectrum disorders manifest alexithymic personality traits as a function of this vulnerability. Stated differently, we posit that alexithymia has a substrate that is specifically associated with schizotypy, and that alexithymia is associated with poorer socioemotional outcomes on the basis of this substrate. In the present study, therefore, it is expected that alexithymia and schizotypy will be significantly related to one another, and that each will exhibit robust univariate associations with the outcome variables of anxiety, depression, interpersonal functioning, and QOL. Assuming that at least some of these associations are statistically significant, the relationship between alexithymia and schizotypy will be further explored by incorporating them as simultaneous predictors in a series of regression models for each of the 4 outcome variables. We expect that alexithymia will fail to make a significant statistical contribution when shared variance with schizotypy is controlled for by including both variables as independent predictors.

Methods

Participants

Seventy-two undergraduate students (32 male and 40 female) from Kent State University were recruited from the university mass testing protocol to participate in the study (Table 1). The average age of participants was 22 years. The majority of participants were college freshman (72.6%), and Caucasian (80.8%). Seven participants (9.6% of the sample) reported having a psychiatric diagnosis at the time of the study, which they variously represented as depression, depression and anxiety, and attention-deficit disorder (these participants were included in all analyses).

Measures

Alexithymia—Alexithymia was measured using the 20-item version of the Toronto Alexithymia Scale (TAS-20). The TAS-20 is the most widely used and validated alexithymia self-report measure (Bagby et al., 1994; Taylor, 2000). Factor analyses have suggested that the TAS-20 has 3 subfactors indicating different facets of alexithymia:

difficulty identifying feelings, difficulty describing feelings, and externally orientated thinking.

Schizotypy—Schizotypy was measured using the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE; Mason et al., 1995), a measure designed for tapping schizotypal characteristics in healthy individuals. The O-LIFE is a self-report measure consisting of 104 items with a dichotomous response format measuring the 4 dimensions of schizotypy identified by Claridge (Bentall et al., 1989; Claridge et al., 1996): unusual experiences, cognitive disorganization, introverted anhedonia, and impulsive nonconformity. Total O-LIFE scores were used as an overall indication of schizotypal personality functioning. The O-LIFE possesses good psychometric properties (Loughland and Williams, 1997).

Depression—Depression was measured using the Beck Depression Inventory-II (Beck et al., 1996), a 21-item self-report measure designed to assess the severity of the affective, cognitive, motivational psychomotor, and vegetative components of depression, with higher scores indicating more severe depression. The Beck Depression Inventory-II is a well-validated and frequently used measure of depression in clinical research (for a review, see Beck and Steer, 1993).

Anxiety—Anxiety was measured using the Beck Anxiety Inventory (Beck et al., 1988), a 21-item self-report instrument designed to assess the severity of the somatic, affective and cognitive components of anxiety in psychiatric populations, with higher scores representing greater severity in anxiety. The Beck Anxiety Inventory is a well-validated and frequently used measure of anxiety (for a review, see Beck and Steer, 1993).

Social Functioning—Social functioning was measured using the Social Adjustment Scale-Self Rated (Weissman and Bothwell, 1976). The Social Adjustment Scale-Self Rated has been used with participants with a variety of psychiatric disorders (including schizotypy; e.g., Jahshan and Sergi, 2007), as well as with nonclinical samples (e.g., Hudson et al., 2002), and has been shown to significantly correlate and be comparable to interviewer-rated assessments (Weissman and Bothwell, 1976). The 3 subscales of family, peer, and academic adjustment were assessed in the current study, from which a total score was derived, where higher scores are indicative of worse social functioning.

Quality of Life—QOL was measured using the QOL Inventory (QOLI; Frisch et al., 1992). The QOLI measures life satisfaction in 16 domains, and produces a measure of global QOL based on the multiple satisfaction ratings. Satisfaction ratings for each domain are weighted by their importance to the individual participant, based on Frisch's (1998) hypothesis that the more important a domain is, the greater its influence on an individual's global QOL. The QOLI has demonstrated good reliability and validity (Frisch, 1992; McAlinden and Oei, 2006).

Results

Table 1 contains descriptive information for the sample, expressed in terms of age, gender, race, and education. These demographic factors were not significantly correlated with any of

the study variables. The correlations among study variables are shown in Table 2. Alexithymia and schizotypy were positively correlated for the sample as a whole; and each, in turn, was positively associated with depression, anxiety, and poor social functioning, and negatively associated with QOL.

A series of simultaneous regression analyses were performed to assess the relative contributions of alexithymia and schizotypy to each of the 4 outcome variables (Table 3). In the regression model for depression ($R^2 = 0.736$ [adjusted $R^2 = 0.721$], $F(2, 36) = 47.47$, $p < 0.001$), the contribution of schizotypy was significant ($\beta = 0.813$, $t = 7.508$, $p < 0.001$), and the contribution of alexithymia was nonsignificant ($\beta = 0.074$, $t = 0.684$, $p = 0.499$). In the regression model for anxiety ($R^2 = 0.499$ [adjusted $R^2 = 0.470$], $F(2, 36) = 70.559$, $p < 0.001$), the contribution of schizotypy was significant ($\beta = 0.729$, $t = 4.887$, $p < 0.001$), and the contribution of alexithymia was nonsignificant ($\beta = -0.040$, $t = -0.271$, $p = 0.799$). In the regression model for social functioning ($R^2 = 0.554$ [adjusted $R^2 = 0.527$], $F(2, 35) = 20.497$, $p < 0.001$), the contribution of schizotypy was significant ($\beta = 0.683$, $t = 4.891$, $p < 0.001$), and the contribution of alexithymia was nonsignificant ($\beta = 0.102$, $t = 0.732$, $p = 0.469$). Finally, in the regression model for QOL ($R^2 = 0.451$ [adjusted $R^2 = 0.417$], $F(2, 35) = 13.531$, $p < 0.001$), the contribution of schizotypy was significant ($\beta = -0.731$, $t = -4.625$, $p < 0.001$), and the contribution of alexithymia was nonsignificant ($\beta = 0.114$, $t = 0.722$, $p = 0.475$). In separate analyses conducted for males and females, parallel results were found for each of the 4 outcome variables. Taken together with the correlations reported in Table 2, these results indicate that the reported associations between alexithymia and socioemotional outcomes are predicated on a third variable, namely, schizotypy.

Discussion

In a nonclinical sample of university undergraduates, schizotypy was found to be robustly associated with alexithymia. The observed pattern of correlations suggests a tendency among individuals manifesting schizotypal personality traits to be less able to identify and verbalize the emotions they are experiencing, while at the same time exhibiting decreased QOL and increased levels of depression, anxiety, and social impairment. The findings are consistent with research using both healthy and clinical samples demonstrating that difficulties with identifying and verbalizing feelings correlate with high scores on neuroticism and social dysfunction (Mattila et al., 2007).

As expected, alexithymia failed to significantly predict any of the 4 socioemotional outcome measures when included as a simultaneous predictor alongside schizotypy. These findings are consistent with the hypotheses that (1) there is a substrate of alexithymia specifically associated with schizotypy, and (2) reported associations between alexithymia and poorer socioemotional outcomes are predicated on this substrate. In the present study, associations between alexithymia and the 4 socioemotional dependent variables appeared to be entirely driven by shared variance with schizotypy.

The present results should be viewed as preliminary and in need of further investigation. The underlying mechanism through which alexithymia and schizotypy are related to one another is unclear. Alexithymia has been shown to be associated with both detachment from the self

and inadequate differentiation between self and other (de Rick and Vanheule, 2006), both of which are associated with schizophrenia-spectrum psychopathology. Heuristically, Bleuler's (1911/1950) notion of "split mind" may be relevant. Just as psychotic phenomena have been hypothesized to represent, in part, a fragmentation of the self whereby one's own thoughts and feelings are attributed to external agents (real or imagined), this same fragmentation of the self may—as an underlying vulnerability factor manifesting in schizotypal characteristics—result in impaired ability to differentiate and express one's own emotional experience.

Furthering this line of thought, there is evidence that both alexithymia (Waller and Scheidt, 2006) and schizotypy (Berry et al., 2007) are associated with insecure attachment style, which is associated with enduring impairments in affect regulation and sense of self (Willinger et al., 2002). In addition, both alexithymia (Goldsmith and Freyd, 2005) and schizotypy (Steel et al., 2009) are associated with experiences of trauma. Childhood trauma, in particular, has been implicated as a causal risk factor for both conditions (Berenbaum, 1996; Read et al., 2001; Zlotnick et al., 2001). In a review, Goldsmith and Freyd (2005) argue that interrelations among variables such as abuse, depression, anxiety, dissociation, and impaired emotional functioning may be best understood as a shared trauma response, rather than as distinct pathologies. This view is consistent with the model of Complex PTSD (post-traumatic stress disorder) proposed by Herman (1992), which emphasizes enduring effects in self-regulation and emotional awareness as a function of traumatic experience. Does the cumulative impact of adverse experiences, possibly developmental in nature, account for the observed relationships between alexithymia, schizotypy, and socioemotional functioning? This possibility is introduced speculatively. More research is needed to clarify and resolve the fundamental nature of these relationships.

In conclusion, the present study adds to mounting evidence that alexithymic emotional deficits are, in at least a subset of cases, a direct expression of schizotypy. Further, based on both the present, as well as earlier, research (e.g., Van 't Wout, 2007), alexithymic characteristics—particularly when associated with poor socioemotional functioning—merit further consideration as a risk factor for schizophrenia. Putative shared determinants for alexithymia and schizophrenia have been established, suggesting possible common etiological pathways that can be investigated. Finally, there is the possibility that the schizophrenia construct may, ultimately, need to be broadened so as to more explicitly encompass alexithymic symptomatology. First, however, the relationship between schizophrenia and alexithymia needs to be better established and better understood, particularly using longitudinal research designs. In addition, one particularly important line of inquiry pertains to the question of whether the presence or absence of alexithymic symptoms in schizophrenia has clinically meaningful (and perhaps distinctive) pathophysiological and treatment implications.

This study possesses a number of limitations. The study made use of an undergraduate sample, which may limit generalizability of findings to the general adult population. Moreover, the racial makeup, age, and socioeconomic status of the sample were not representative of the broader US population, which further weakens generalizability. Moving forward, epidemiological research using nationally representative samples would be

important to test the limits of generalization. A further weakness of the study is that it was cross-sectional, which does not allow for the derivation of strong causal inferences. In particular, it cannot be concluded that either alexithymic traits or general schizotypy were causally related to the study's putative outcome variables. As suggested above, longitudinal research is necessary to rigorously address these kinds of questions. Despite these limitations, the study offers new information about the importance of the relationship between alexithymia and schizotypy that may stimulate further research in this area.

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References

- Addington J, Addington D. Facial affect recognition and information processing in schizophrenia and bipolar disorder. *Schizophr Res.* 1998; 32:171–181. [PubMed: 9720122]
- Bagby RM, Taylor GJ, Parker JD. The Twenty-item Toronto Alexithymia Scale-II. Convergent, discriminant and concurrent validity. *J Psychosom Res.* 1994b; 38:33–40. [PubMed: 8126688]
- Beck AT, Brown G, Epstein N, Steer RA. An inventory for measuring clinical anxiety: Psychometric properties. *J Consult Clin Psychol.* 1988; 55:893–897. [PubMed: 3204199]
- Beck, AT.; Steer, RA. *Manual for the Beck Anxiety Inventory.* San Antonio (TX): Psychological Corporation; 1993.
- Beck, AT.; Steer, RA.; Brown, GK. *Manual for Beck Depression Inventory.* 2nd. San Antonio (TX): Psychological Corporation; 1996.
- Bentall RP, Claridge G, Slade PD. The multi-dimensional nature of schizotypal traits: A factor analytic study with normal subjects. *Br J Clin Psychol.* 1989; 28:363–375. [PubMed: 2605389]
- Berenbaum H. Childhood abuse, alexithymia and personality disorder. *J Psychosom Res.* 1996; 41:585–595. [PubMed: 9032722]
- Berry K, Band R, Corcoran R, Barrowclough C, Wearden A. Attachment styles, earlier interpersonal relationships and schizotypy in a non-clinical sample. *Psychol Psychother.* 2007; 80:563–576. [PubMed: 17535544]
- Blaustein JP, Tuber SB. Knowing the unspeakable: Somatization as an expression of disruptions in affective-relational functioning. *Bull Menninger Clin.* 1998; 62:351–365. [PubMed: 9703712]
- Bleuler, E. *Dementia Praecox, or the Group of Schizophrenias.* New York: International Universities Press; 1911/1950.
- Cedro A, Kokoszka A, Popiel A, Narkiewicz-Jodko W. Alexithymia in schizophrenia: An exploratory study. *Psychol Rep.* 2001; 89:95–98. [PubMed: 11729558]
- Claridge G, McCreery C, Mason O, Bentall R, Boyle G, Slade P, Popplewell D. The factor structure of “schizotypal” traits: A large replication study. *Br J Clin Psychol.* 1996; 35:103–115. [PubMed: 8673026]
- Clayton K. The interrelatedness of disconnection: The relationship between dissociative tendencies and alexithymia. *J Trauma Dissociation.* 2004; 5:77–101.
- Close H, Garety P. Cognitive assessment of voices: Further developments in understanding the emotional impact of voices. *Br J Clin Psychol.* 1998; 37:173–188. [PubMed: 9631205]
- de Bonis M, de Boeck P, Lida-Pulik H, Feline A. Identity disturbances and self-other differentiation in schizophrenics, borderlines and normal controls. *Compr Psychiatry.* 1995; 36:362–366. [PubMed: 7497710]
- de Rick A, Vanheule S. The relationship between perceived parenting, adult attachment style and alexithymia in alcoholic inpatients. *Addict Behav.* 2006; 31:1265–1270. [PubMed: 16139435]
- Edwards J, Jackson HJ, Pattison PE. Emotion recognition via facial expression and affective prosody in schizophrenia: A methodological review. *Clin Psychol Rev.* 2002; 22:789–832. [PubMed: 12214327]

- Frisch, MB. Use of the Quality of Life Inventory in problem assessment and treatment planning for cognitive therapy of depression. In: Freeman, A.; Datillo, FM., editors. Comprehensive casebook of cognitive therapy. New York: Plenum Press; 1992. p. 27-52.
- Frisch MB. Quality of life therapy and assessment in health care. *Clin Psychol*. 1998; 5:19–40.
- Frisch MB, Cornell J, Villanueva M, Retzlaff PJ. Clinical validation of the Quality of Life Inventory: A measure of life satisfaction for use in treatment planning and outcome assessment. *Psychol Assess*. 1992; 4:92–101.
- Goldsmith RE, Freyd JJ. Awareness for emotional abuse. *J Emot Abuse*. 2005; 5:95–125.
- Green MF, Leitman DI. Social cognition in schizophrenia. *Schizophr Bull*. 2008; 34:670–672. [PubMed: 18495642]
- Herman JL. Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *J Trauma Stress*. 1992; 5:377–391.
- Hudson CR, Kirby KC, Firely ML, Festinger DS, Marlowe DB. Social adjustment of family members and significant others (FSOs) of drug users. *J Subst Abuse Treat*. 2002; 23:171–181. [PubMed: 12392803]
- Jahshan CS, Sergi MJ. Theory of mind, neurocognition and functional status in schizotypy. *Schizophr Res*. 2007; 89:278–286. [PubMed: 17092692]
- Jaeger J, Bitter I, Czobor P, Volavka J. The measurement of subjective experience in schizophrenia: The Subjective Deficit Syndrome Scale. *Compr Psychiatry*. 1990; 31:216–226. [PubMed: 2340716]
- Kohler, CG.; Gur, R.; Gur, RE. Emotional processing in schizophrenia: A focus on affective states. In: Borod, JC., editor. *The Neuropsychology of Emotion*. New York (NY): Oxford University Press; 2000. p. 432-455.
- Kohler CG, Gur RC, Swanson CS, Petty R, Gur RE. Depression in schizophrenia: Part I. Association with neuropsychological deficits. *Biol Psychiatry*. 1998; 43:165–172. [PubMed: 9494697]
- Kohler CG, Martin EA. Emotional processing in schizophrenia. *Cogn Neuropsychiatry*. 2006; 11:250–271. [PubMed: 17354071]
- Kring AM, Kerr SL, Smith DA, Neale JM. Flat affect in schizophrenia does not reflect diminished subjective experience of emotion. *J Abnorm Psychol*. 1993; 102:77–106.
- Laroi F, Van der Linden M, Aleman A. Associations between dimensions of alexithymia and psychometric schizotypy in nonclinical participants. *J Nerv Ment Dis*. 2008; 196:927–930. [PubMed: 19077862]
- Lindholm T, Lehtinen V, Hyypä MT, Puukka P. Alexithymic features in relation to the dexamethasone suppression test in a Finnish population sample. *Am J Psychiatry*. 1990; 147:1216–1219. [PubMed: 2386254]
- Loughland CM, Williams LM. A cluster analytic study of schizotypal trait dimensions. *Pers Individ Dif*. 1997; 23:877–883.
- Maggini C, Raballo A. Alexithymia and schizophrenic psychopathology. *Acta Bio Medica Atteneo Parmense*. 2004; 75:40–49.
- Maggini C, Raballo A, Salvatore P. Depersonalization and basic symptoms in schizophrenia. *Psychopathology*. 2002; 35:17–24. [PubMed: 12006744]
- Mason O, Claridge G, Jackson M. New scales for the assessment of schizotypy. *Pers Individ Dif*. 1995; 18:7–13.
- Mattila AK, Poutanen O, Koivisto AM, Salokangas RK, Joukamaa M. Alexithymia and life satisfaction in primary healthcare patients. *Psychosomatics*. 2007; 48:523–529. [PubMed: 18071100]
- McAlinden NM, Oei TP. Validation of the Quality of Life Inventory for patients with anxiety and depression. *Compr Psychiatry*. 2006; 47:307–314. [PubMed: 16769306]
- McKenna, JP. *Schizophrenia and Related Syndromes*. Hove (United Kingdom): Psychology Press; 1994.
- Myin-Germeys I, Delespaul PA, de Vries MW. Schizophrenia patients are more emotionally active than is assumed based on their behavior. *Schizophr Bull*. 2000; 26:847–854. [PubMed: 11087017]

- Nkam I, Langlois-Thery S, Dollfus S, Petit M. Negative symptoms, depression, anxiety and alexithymia in schizophrenic patients [in French]. *Encephale*. 1997; 23:267–272. [PubMed: 9417392]
- Phillips LK, Seidman LJ. Emotion processing in persons at risk for schizophrenia. *Schizophr Bull*. 2008; 34:888–903. [PubMed: 18644853]
- Read J, Perry BD, Moskowitz A, Connolly J. The contribution of early traumatic events to schizophrenia in some patients: A traumagenic neurodevelopmental model. *Psychiatry*. 2001; 64:319–345. [PubMed: 11822210]
- Ross CA. Dissociation and psychosis: Conceptual issues. *J Psychol Trauma*. 2007; 6:21–34.
- Salminen JK, Saarijarvi S, Arela E. Two decades of alexithymia. *J Psychosom Res*. 1995; 39:803–807. [PubMed: 8636911]
- Sass LA, Parnas J. Schizophrenia, consciousness and the self. *Schizophr Bull*. 2003; 29:427–444. [PubMed: 14609238]
- Sifneos PE. The prevalence of “alexithymic” characteristics in psychosomatic patients. *Psychother Psychosom*. 1973; 22:255–262. [PubMed: 4770536]
- Spitzer C, Siebel-Jurges U, Barnow S, Grabe HJ, Freyberger HJ. Alexi-thymia and Interpersonal Problems. *Psychother Psychosom*. 2005; 74:240–246. [PubMed: 15947514]
- Steel C, Marzillier S, Fearon P, Ruddle A. Childhood abuse and schizotypal personality. *Soc Psychiatry Psychiatr Epidemiol*. 2009; 44:917–923. [PubMed: 19333529]
- Taylor G. Recent developments in alexithymia theory and research. *Can J Psychiatry*. 2000; 45:134–142. [PubMed: 10742872]
- Taylor, GJ.; Bagby, RM.; Parker, JD. Disorders of Affect Regulation: Alexithymia in Medical and Psychiatric Illness. Cambridge (United Kingdom): Cambridge University Press; 1997.
- Van 't Wout M, Alemann A, Bermod B, Kahn RS. No words for feelings: Alexithymia in schizophrenia and first-degree relatives. *Compr Psychiatry*. 2007; 48:27–33. [PubMed: 17145278]
- Van 't Wout M, Aleman A, Kessels RP, Laroi F, Kahn RS. Emotional processing in a non-clinical psychosis-prone sample. *Schizophr Res*. 2004; 68:271–281. [PubMed: 15099609]
- Waller E, Scheidt CE. Somatoform disorders as disorders of affect regulation: A developmental perspective. *Int Rev Psychiatry*. 2006; 18:13–24. [PubMed: 16451876]
- Weissman MM, Bothwell S. Assessment of social adjustment by patient self-report. *Arch Gen Psych*. 1976; 33:1111–1115.
- Zlotnick C, Mattia JJ, Zimmerman M. The relationship between posttraumatic stress disorder, childhood trauma and alexithymia in an outpatient sample. *J Trauma Stress*. 2001; 14:177–188.

Table 1
Descriptive Information for Sample ($N = 72$)

	Participants
% female	55.5
% Caucasian	80.8
% African American	9.6
% Asian-American	2.7
% Hispanic	2.7
% other	4.1
% psychiatric diagnosis (self-reported)	9.6
Depression	5.5
Depression and anxiety	2.7
Attention deficit disorder	1.3
Mean age (in yr)	21.6 $\pm$ 6.38 (18–53)
Mean years of completed education	12.53 $\pm$ 0.97

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Table 2

Correlations Among Study Variables

	TAS	BDI	BAI	OLIFE	SAS	QOLI
TAS	1					
BDI	0.637 ^a	1				
BAI	0.413 ^a	0.577 ^a	1			
OLIFE	0.582 ^a	0.728 ^a	0.677 ^a	1		
SAS	0.448 ^a	0.520 ^a	0.434 ^a	0.623 ^a	1	
QOLI	-0.360 ^b	-0.544 ^a	-0.375 ^a	-0.521 ^a	-0.433 ^a	1

^aCorrelation is significant at the 0.01 level (2-tailed).
^bCorrelation is significant at the 0.05 level (2-tailed).

TAS indicates Toronto Alexithymia Scale; BDI, Beck Depression Inventory; BAI, Beck Anxiety Inventory; OLIFE, Oxford-Liverpool Inventory of Feelings and Experiences; SAS, Social Adjustment Scale; QOLI, Quality of Life Inventory.

Table 3
Regression Analyses Predicting Depression, Anxiety, Social Functioning, and Quality of Life

Dependent Variable	Predictors	F	R ² (Adjusted R ²)	β	t
Depression	Model	$F(2, 36) = 47.47, p < 0.001$	0.736 (0.721)		
	Alexithymia Schizotypy			0.074 0.813	$t = 0.684, p = 0.499$ $t = 7.508, p < 0.001$
Anxiety	Model	$F(2, 36) = 70.559, p < 0.001$	0.499 (0.470)		
	Alexithymia Schizotypy			-0.040 0.729	$t = -0.271, p = 0.799$ $t = 4.887, p < 0.001$
Social functioning	Model	$F(2, 35) = 20.497, p < 0.001$	0.554 (0.527)		
	Alexithymia Schizotypy			0.102 0.683	$t = 0.732, p = 0.469$ $t = 4.891, p < 0.001$
Quality of life	Model	$F(2, 35) = 13.531, p < 0.001$	0.451 (0.417)		
	Alexithymia Schizotypy			0.114 -0.731	$t = -0.722, p = 0.475$ $t = -4.625, p < 0.001$