Association of Stigma, Self-Esteem, and Symptoms with Concurrent and Prospective Assessment of Social Anxiety in Schizophrenia

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Abstract

Rationale—Often overlooked clinically, social anxiety is common in schizophrenia and may represent a barrier to quality of life and social function. Little is known, however, about the possible roots of social anxiety in schizophrenia or their relationship to social anxiety over time.

Methods—To explore this issue, we examined the relationship between self-esteem, self-stigma, positive and negative symptoms, emotional discomfort and affect recognition with concurrent and prospective assessments of social anxiety using the Multidimensional Anxiety Questionnaire in a sample of seventy-eight persons meeting criteria for schizophrenia or schizoaffective disorder.

Results—Univariate correlations revealed that self-esteem, self-stigma, negative symptoms and emotional discomfort were significantly related to social anxiety assessed concurrently and five months later. Multiple regressions revealed negative symptoms and discrimination experiences in particular were found to predict social anxiety prospectively even when initial levels of social anxiety were controlled for statistically.

Conclusions—Negative symptoms and self-stigma may be consistently related to social anxiety across time.

Keywords

Social Anxiety; Delusions; Neurocognition; Schizophrenia; Psychosocial Function

Introduction

Early descriptions of schizophrenia suggest an uncommonly high occurrence of anxiety symptoms such as intense worry, over concern, and fearful avoidance (1). Consistent with this are modern reports of rates of social anxiety disorder (or social phobia) in schizophrenia that range from 13 to 36%; that is, rates which are double to triple those found in the general community (2–7). Though often neglected as a target for treatment, social anxiety disorder in schizophrenia is of clinical relevance and has been linked to an increased risk for suicide

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attempts, poorer quality of life (8), poorer social functioning (9) and lower self-esteem (10). Social anxiety may additionally represent a risk factor or a prominent part of the early phase of illness (11, 12).

To date, however, it remains unclear why social anxiety is so common in schizophrenia and how anxiety symptoms such as social anxiety develop in persons with schizophrenia (13). For instance, are levels of social anxiety related to the same phenomena as in persons without schizophrenia, or are levels of social anxiety uniquely linked to some of the central features of the disorder or its risk factors? Answers to these questions can deepen our understanding of how social anxiety develops in schizophrenia and how it may be best treated.

One limitation of most of the literature to date has been its reliance on concurrent assessments of social anxiety in schizophrenia and a limited number of correlates. Accordingly, the current study explores the association of six different sets of variables, each potentially uniquely related to social anxiety, as assessed at two time points: concurrently and five months later. The first of the potential predictors of social anxiety we chose to study was self-esteem. We anticipated that poorer self-esteem might lead to or exacerbate social anxiety in schizophrenia for several reasons. One reason for this is that a poor appraisal of a person's own social worth has been linked to social anxiety in psychosis (14). Self-esteem has been linked to both social competence (15) and stress resistance (16), and may, if sufficiently low, leave persons vulnerable to experiencing social anxiety. Additionally, deficits in self-esteem are widely observed in schizophrenia and have been linked to poorer social functioning (17–19), difficulties decoding social interactions (20), and social anxiety symptoms (21, 22).

The second set of variables we chose to study as predictors of social anxiety in schizophrenia included stigmatizing experiences and internalized stigma. Stigma refers to socially prevalent stereotypic beliefs about mental illness, including the belief that mental illness is synonymous with dangerousness or incompetence (23). We anticipated stigmatizing experiences might lead to social anxiety given findings that awareness of stigma among persons with schizophrenia may result in social avoidance and the anticipation of humiliation (24, 25), and given cross-sectional studies that found that the experience of stigma and other negative social interactions were linked to both poorer life satisfaction and self-efficacy (26–28). This possibility is also consistent with what has been observed in highly stigmatized medical disorders such as HIV/AIDS (29). Regarding internalized stigma, or the acceptance by persons with mental illness themselves of stigmatizing views about mental illness (e.g., dangerousness, incompetence), we anticipated that this might exacerbate social anxiety given suggestions that internalized stigma leads to increased social avoidance among persons with severe mental illness (30).

The third set of variables we chose to examine as predictors of social anxiety in schizophrenia included positive, negative and emotional discomfort symptoms. Beginning with positive symptoms, we thought positive symptoms might result in heightened social anxiety given findings linking paranoia with social anxiety (30) and positive symptoms in general with social-related anxiety (7, 32). Delusional beliefs have also been found to be correlated with social anxiety in other disorders such as Asperger syndrome (33). Indeed, others have argued (34) that the existence of social anxiety may in fact be an artifact of the positive symptoms of schizophrenia, such as paranoia. We reasoned negative symptoms might lead to social anxiety given assertions that with a loss of social interest and volition, social situations may become difficult to navigate and, as such, appear as opportunities for embarrassment (35). Finally, regarding affective distress, it would also seem to be a matter of intuition that in the face of painful affects that some with schizophrenia might avoid

social situations, again fearing embarrassment or confusion. This possibility seems consistent with literature correlating active avoidance with depression, anxiety and guilt in schizophrenia patients (36) and with findings that, among persons in general, higher levels of emotional arousal are linked with social anxiety (37).

Finally, a fourth variable we chose to explore was affect recognition, one important element of social cognition. It has been suggested that a failure to recognize the affects of others renders social situations incomprehensible, turning them into a source of frustration rather than a meaningful interpersonal connection (38, 39). Outside of the schizophrenia literature, studies of children and adolescents, for instance, suggest social anxiety disorders are linked to poorer emotional face recognition (40). We, thus, anticipated that graver impairments in affect recognition might be linked to higher levels of social anxiety.

Regarding the previously mentioned variables, we made two predictions. First, for reasons summarized above, we predicted each would be correlated both with social anxiety as concurrently assessed and as assessed prospectively five months later. We secondly predicted that each general category of predictor variables would make a unique contribution to the prediction of social anxiety at both time points. Finally, we included a measure of social desirability for potential use as a covariate to rule out the possibility that any significant correlations between self-report measures and social anxiety were due to a general response bias (e.g., results reflected a subgroup who minimized any negative experiences).

Method

Participants

Sixty-six males and twelve females with Structured Clinical Interview for DSM-IV-confirmed diagnoses of schizophrenia (n=51) or schizoaffective disorder (n=27) were recruited from a comprehensive day hospital at a VA Medical Center (n=54) or community mental health center (n=24). All participants were receiving ongoing outpatient treatment and were in a post-acute or stable phase of their disorder as defined by no hospitalizations, and no changes in medication, or housing in the past month. Participants with active substance dependence or history of mental retardation documented in a chart review were excluded. Participants had a mean age of 46.67 (standard deviation [SD]=8.71), a mean educational level of 12.81 (SD=2.15) and a mean of 7.53 (SD=9.30) lifetime hospitalizations with the first, on average, occurring at the age of 26.88 (SD=10.64). Thirty participants were Caucasian, forty-seven African American, and one Latino. Participants came from an original pool of one hundred participants from a larger survey of the prevalence of anxiety symptoms in schizophrenia and were eligible for this study if they completed follow-up assessments of social anxiety five months after baseline.

Instruments

The Positive and Negative Syndrome Scale (PANSS)—The PANSS (41) is a 30-item rating scale completed by clinically trained research staff at the conclusion of chart review and a semi-structured interview. It is one of the most widely used semi-structured interviews for assessing the wide range of psychopathology in schizophrenia. For the purposes of this study, three of the analytically derived PANSS factor component scores were utilized: Positive, Negative and Emotional Discomfort (36). Assessment of interrater reliability revealed excellent to good rater agreement, with intraclass correlations ranging from .90 to .81 for positive and negative component scores, respectively.

The Internalized Stigma of Mental Illness Scale (ISMIS)—The ISMIS (42) is a 29-item questionnaire designed to assess subjective experiences of stigma. The ISMIS presents first-person statements and asks participants to rate statements on a 4-point Likert scale from 1 ("Strongly Disagree") to 4 ("Strongly Agree"). Two of the five subscales were used in this study: Stereotype Endorsement and Discrimination Experience. Stereotype Endorsement reflects agreement with negative stereotypes of mental illness, while Discrimination Experience reflects mistreatment attributed to the biases of others. There has been evidence of adequate internal consistency, test-retest reliability, factorial and convergent validity reported elsewhere, including links with morale and well-being (42, 43). The instrument was presented to persons in its written form with research assistants available to assist if participants were confused about the meaning of any item. Only two subtests were chosen to reduce the number of correlations and, thereby, reduce the likelihood of spurious findings.

The Multidimensional Self-Esteem Inventory (MSEI)—The MSEI (44) is a 116-item, self-report measure which assesses individuals' self-perception of their overall social value. Respondents rate items on a 5-point scale according to the degree or frequency with which each item applies to them. The MSEI offers t-scores based on a community sample. Two of the eight subscales were used in this study: Competence and Likability. Competence assesses the degree to which a person feels capable of learning and mastering tasks. Likability assesses acceptance by peers. Scale scores are calculated with higher scores reflecting greater levels of self-esteem. Evidence of internal consistency for this scale on participants with schizophrenia has been presented elsewhere (45). Only two subtests were chosen to reduce the number of correlations and, thereby, reduce the likelihood of spurious findings.

Multidimensional Anxiety Questionnaire (MAQ)—The MAQ (46) is a 40-item, self-report questionnaire designed to tap multiple domains of the experience of anxiety. For the purposes of this study, we were interested in the subscale "Social Anxiety," which assesses worries about social embarrassment and social avoidance. Reynolds (46) presents evidence of acceptable internal consistency and test-retest reliability from both a general psychiatric and community sample and factorial validity from a combined psychiatric and community sample. Evidence of the validity of this scale in schizophrenia includes a previous study reporting strong correlations between MAQ scores and observer ratings of anxiety using the Positive and Negative Syndrome Scale (47).

Bell-Lysaker Emotional Recognition Task (BLERT)—The BLERT (48) is a measure of ability to identify affect cues in videotaped stimuli. Participants are presented with videotaped segments and asked to correctly identify neutral, positive (happy and surprised) and negative (fearful, angry, disgusted, sad) affects presented by an actor in a total of 21 separate vignettes. Scores are available for the number of correctly identified affects. For the purposes of this study we also scored the frequency with which every possible error was made. The BLERT has excellent categorical stability of measurement over five months (Kappa=0.93), and has demonstrated discriminant validity among community, substance-abuse, and schizophrenia samples.

Marlowe-Crowne Social Desirability Scale (MCSDS)—The MCSDS (49) is a self-report measure of 33 items which participants are asked to endorse as true or false regarding their own experiences. Items reflect culturally sanctioned behaviors that are, nevertheless, unlikely to occur. Higher scores suggest a need to obtain approval by responding in the perceived culturally approved manner.

Procedures

The appropriate research review committees of Indiana University and the Roudebush VA Medical Center approved all procedures. Following informed consent, diagnoses were determined using the Structured Clinical Interview for DSM-IV (SCID) (50). A clinical psychologist conducted all diagnostic interviews. Following the SCID, participants were administered the PANSS, MCSDS, MSEI, MAQ, ISMIS and BLERT. A research assistant was available to assist participants if there were difficulties reading or understanding the questionnaires. PANSS ratings were made blind to all other assessment scores. PANSS interviews were conducted by trained research assistants with a minimum of a bachelor's degree in psychology or a related field.

Participants were then provided with work placements within the VA, which offered up to twenty hours of work per week. Work placements included patient escort services, a central mailing room, and housekeeping. Participants were supervised by regular work site supervisors. Data on hours of work per week were collected by time cards which were verified by work site supervisors. Five months following baseline, participants completed the MAQ.

Analyses

Analyses proceeded in five phases. First, MAQ social anxiety scores were correlated with baseline demographics, as well as the measure of social desirability, in order to determine whether there was a need for covariates in the final stages of the analyses. Social anxiety scores were also correlated with hours and weeks of work to determine whether follow-up scores had been affected by participation in vocational rehabilitation. Social anxiety scores at baseline were also correlated with those at time 2 to determine the stability of the phenomenon. Second baseline assessment of symptoms, self-esteem, stigma and affect recognition were correlated with social anxiety scores at baseline and five month follow-up. In this phase of the analyses, we adjusted our alpha to .005 given the large number of possible comparisons. In the third phase, stepwise multiple regressions were performed predicting baseline and then five-month follow-up social anxiety scores from baseline variables linked to these two social anxiety scores in the univariate correlations. Fourth, the regressions were repeated entering any possibly confounding variables found in the first phase of the analyses. Finally, in the fifth phase, we planned a regression in which we sought to predict social anxiety at follow-up from the same predictor variables controlling for social anxiety at baseline. The purpose of this was to determine whether any of the predictor variables were uniquely related to development in social anxiety not present at baseline. A sample of over seventy-five participants was deemed to have sufficient power as it would be able to detect correlations of 0.30 or greater at the .01 level.

Results

Mean scores for all measures obtained are presented in Table 1. As noted, participants tended to have moderate, though not severe, levels of social anxiety (t-scores between 61 and 65). Correlations and t-tests revealed baseline social anxiety score was unrelated to age, education, or diagnosis. Social anxiety scores did not differ between male and female participants. Social anxiety at time 2 was not correlated with participation in the work program; however, higher levels of social anxiety at time 1 were related to working fewer hours during the work program. When the relationship between social anxiety and social desirability was examined, a significant correlation was noted, suggesting lower levels of social anxiety at the first and second time points were linked to higher scores on the social desirability scale (r=−0.38, p<.01; r=−0.31, p<.01, respectively). Social anxiety, as assessed

at time 1, was highly related to social anxiety as assessed five months later (r=0.67, p<. 0001).

Symptoms, self-esteem, stigma and social cognition variables were next correlated with both assessments of social anxiety. As revealed in Table 2, greater levels of negative symptoms, emotional discomfort symptoms, stereotype endorsement and discrimination experiences and lower levels of self-appraised competence and likability were linked to lower levels of social anxiety at both time points. Higher levels of positive symptoms were linked to greater levels of social anxiety when assessed concurrently but not prospectively. Affect recognition was not significantly linked to social anxiety.

As detailed in Table 3, when entered into a stepwise regression, higher levels of social anxiety at baseline were linked to higher levels of emotional discomfort, greater levels of likability and negative symptoms. Greater levels of social anxiety five months later were linked to greater levels of self-appraised likability, higher levels of negative symptoms, more discrimination experiences and greater levels of emotional discomfort. When both stepwise multiple regression analyses were repeated with the social desirability measure forced to enter in the first step as a covariate, all variables noted above continued to make a significant contribution at the .05 level. Finally, a stepwise regression was conducted in which likability, emotional discomfort, and negative symptoms, discrimination experiences were entered to predict social anxiety at five months, with social anxiety at baseline forced to enter first as a covariate. This analysis revealed that, after 45% of the variance was accounted for by baseline social anxiety, baseline discrimination experiences and negative symptoms were still significantly related to social anxiety assessed five months later. When initial levels of social anxiety were accounted for, likability and emotional discomfort at baseline were no longer significantly related to social anxiety at five months.

Discussion

In this study, we examined whether measures of three types of symptoms, two aspects of stigma and two aspects of self-esteem and affect recognition were related to levels of social anxiety in a sample of persons with schizophrenia enrolled in vocational rehabilitation. Consistent with initial predictions, negative symptoms, emotional discomfort, self-appraisals of competence and likability by others, as well as stereotyped endorsement and experiences with discrimination, were all closely linked to higher ratings of participants with both significant levels of social anxiety. Of note, contrary to initial prediction, positive symptoms were related only to concurrent assessment of social anxiety, and affect recognition and social anxiety appeared relatively unrelated.

When we sought to look at whether any of these variables were uniquely linked with social anxiety, we found that emotional discomfort, negative symptoms and likability were linked with social anxiety assessed both concurrently and prospectively. Interestingly, discrimination experiences made a unique contribution to the prediction of social anxiety only prospectively. These correlations were found to persist when the effects of a measure of social desirability were controlled for statistically. Thus, results cannot be explained as a tendency on the part of some participants to report only what they expected others want to hear (e.g., to report that they felt no stigma and thought highly of themselves because they thought that the experimenters wanted to hear that). Additionally, when initial levels of social anxiety were controlled for, negative symptoms and discrimination experiences at baseline continued to predict social anxiety at five months, suggesting that the correlations between some of the baseline measures and social anxiety five months later were not merely the result of the stability of social anxiety itself. Results, thus, are consistent with at least one previous study suggesting that self-esteem may prospectively predict social anxiety over

time (21), as well as theories that stigma may have a negative impact on functioning over time (24).

While the nature of our analyses of group comparisons precludes drawing causal conclusions, results may suggest some hypotheses for future study. First, it is possible that the convergence of negative symptoms, such as lack of affect and volition, coupled with the sense that one is generally not likable in the eyes of others, and general affective distress, triggers social anxiety. It is also possible that the experience of being discriminated against as a result of having a mental illness may have a corrosive and additive effect on social anxiety over time as well. Putting these together, one possible model that could be examined in future studies is that social anxiety develops in schizophrenia, in part, in response to a vicious circle. For instance, perhaps ongoing discrimination experiences for some negatively affect self-esteem by strengthening beliefs that one is not worthy of others' interest. This may then lead to expectations of rejection and embarrassment in social relationships and, therefore, to fearful avoidance of social situations. Alternatively, a feedback loop may be created wherein negative relational experiences lead to withdrawal, withdrawal leads to a lack of social skill development, poor social skills lead to negative relational experiences, and so on. In some ways, this suggests a possible parallel with work on depression by Sloman and colleagues (51) in which negative symptoms themselves may be a reflection of the unintended consequences of naturally occurring defensive strategies.

Of note, there are alternative hypotheses that cannot be ruled out to explain these results. These include the prospect that higher levels of social anxiety lead to negative symptoms or emotional discomfort. It is also possible that the associations of social anxiety, self-esteem, stigma and symptoms noted here are the products of other biological or sociocultural variables not measured. Nevertheless, the inclusion of prospective assessments of social anxiety in the current study provides stronger support for the perspective that the predictor variables studied are not themselves caused by social anxiety.

Additionally, there were several unexpected findings. In particular, social anxiety was not linked with affect recognition, and the links between social anxiety and positive symptoms were relatively weak. This may suggest that it is internal distress, and not an inability to name the affects of others, which leads persons with schizophrenia to avoid social interactions for fear of embarrassment. It may also be that positive symptoms as transitory phenomenon have no enduring association with social anxiety. It is also possible they are linked to social anxiety, but only in combination with other factors such as impairments in executive function (52). As with all unexpected findings, this awaits replication and further study before any interpretation of it is given any weight.

Finally, there are also limitations to this study. Participants were predominantly male and generally in their forties, and our sample size was modest. Replication is needed with samples including more females and males in earlier phases of illness incorporating multiple methods of assessing social anxiety. Research is also needed with larger samples and with more assessment across spans of time greater than five months. Additionally, many possible correlates of social anxiety were not examined in this study, including possible biological underpinnings of anxiety. Given the many analyses performed, this study must be considered as exploratory in nature and, given that the observed correlations were modest, the clinical significance of these findings also remains to be determined. Lastly, because all participants had schizophrenia spectrum disorders, we cannot determine if the purported relationships are specific to schizophrenia per se. Put another way, we cannot tell whether what was found here would be equally true for individuals who do not have schizophrenia. To address this issue, future studies are needed that include comparison samples of people

who do not have schizophrenia. This would give us more direct and less speculative insight into what is specific to the illness and what has to do with the nature of human beings.

With replication, these findings may have several clinical implications. First, as interventions are developed that could target social anxiety in persons with schizophrenia (53, 54) it may be important that these interventions address the impact of discrimination experiences, experiences that can attenuate social anxiety over time. For instance, it might prove important for persons to be able to not only name discrimination experiences, but reject that they are a reason to expect embarrassment. Finally, given that a commonality between many of the factors studied is a general lack of social involvement, a prime challenge for treatment may be to address barriers to the development of social networks. Perhaps an essential starting point for such a treatment is in the development of a strong, therapeutic, nonstigmatizing relationship in which a person with schizophrenia is provided the needed safety for the development of an experience of him or herself as a valuable and competent being. Such a relationship might be conceptualized as allowing for the growth of a template for positive interpersonal experiences. This could further serve to offset the damage caused by discrimination experiences, and a new feedback loop may then be created where a person with more skills and self-esteem feels more comfortable approaching social situations with a sense of agency.

Acknowledgments

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Clinical Implications

With replication, these findings may have several clinical implications. First, as interventions are developed that could target social anxiety in persons with schizophrenia (53, 54) it may be important that these interventions address the impact of discrimination experiences, experiences that can attenuate social anxiety over time. For instance, it might prove important for persons to be able to not only name discrimination experiences, but reject that they are a reason to expect embarrassment. Finally, given that a commonality between many of the factors studied is a general lack of social involvement, a prime challenge for treatment may be to address barriers to the development of social networks. Perhaps an essential starting point for such a treatment is in the development of a strong, therapeutic, nonstigmatizing relationship in which a person with schizophrenia is provided the needed safety for the development of an experience of him or herself as a valuable and competent being. Such a relationship might be conceptualized as allowing for the growth of a template for positive interpersonal experiences. This could further serve to offset the damage caused by discrimination experiences, and a new feedback loop may then be created where a person with more skills and self-esteem feels more comfortable approaching social situations with a sense of agency.

Table 1

Mean Scores of Stigma, Symptoms, Self-Esteem, Social Anxiety, and Social Desirability (n=78)

	Mean	Standard Deviation
PANSS Positive Component	16.04	(4.50)
PANSS Negative Component	19.41	(4.90)
PANSS Emotional Discomfort Component	12.95	(4.41)
ISMI Stereotype Endorsement	1.07	(0.49)
ISMI Discrimination Experience	1.46	(0.67)
MSEI Competence Component	44.77	(9.88)
MSEI Likability Component	42.17	(12.25)
MAQ Social Anxiety (Time 1)	65.44	(15.67)
MAQ Social Anxiety (Time 2)	61.62	(15.74)
MCSDS Social Desirability	19.79	(5.99)

Table 2

Correlations of Social Anxiety with Symptoms, Stigma, Self-Esteem, and Emotion Recognition (n=78)

Predictor Variables at Baseline	Social Anxiety	
	Baseline	Five Months Later
PANSS Positive Component	0.36[†]	0.27[*]
PANSS Negative Component	0.33[†]	0.36[†]
PANSS Emotional Discomfort Component	0.65[‡]	0.49[‡]
ISMI Stereotype Endorsement	0.37[†]	0.41[‡]
ISMI Discrimination Experience	0.44[‡]	0.45[‡]
MSEI Competence Component	−0.54[‡]	−0.53[‡]
MSEI Likability Component	−0.70[‡]	−0.58[‡]
BLERT Emotion Recognition	0.08	−0.02

[*] p<.05;

[†] p<.005;

[‡] p<.001

Table 3

Sequential Regressions Analyses Predicting Social Anxiety at Time 1 and Time 2 from Baseline Measures (n=78)

Time of Social Phobia Assessment	Predictors from Baseline	Partial R^2	Total R^2	F(df)
Baseline	Likability	0.48	0.48	44.11 (3,74)[*]
	Emotional Discomfort	0.12	0.60	
	Negative Symptoms	0.04	0.64	
Five Month	Likability	0.34	0.34	17.87 (4,73)[*]
	Negative Symptoms	0.08	0.42	
	Discrimination Experiences	0.04	0.46	
	Emotional Discomfort	0.04	0.50	

[*]
p<.001