

Clinical Correlates of Social Anxiety Disorder Comorbidity in Schizophrenia



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SUMMARY

Objective: The aim of this study is to investigate the social anxiety disorder comorbidity and clinical features in schizophrenia.

Method: 102 (23 women and 79 men) outpatients who had been followed in the Psychotic Disorders Unit in Bakırköy Research and Training Hospital for Psychiatry, Neurology and Neurosurgery were diagnosed with schizophrenia according to DSM-IV criteria were included in the study. Schizophrenia and Social anxiety disorder were assessed by a structured clinical interview for DSM-IV. Patients were evaluated with a questionnaire which included demographics, clinical characteristics, Liebowitz social anxiety scale, Positive and Negative Syndrome Scale (PANSS), Calgary depression scale for schizophrenia (CDSS), The Scale of Unawareness of Mental Disorders (SUMD), Short form-36 health survey questionnaire and state-trait anxiety inventory.

Results: In remission, 22 patients (21.6%) had co-morbid social anxiety disorder. Patients with social anxiety disorder comorbidity, had higher levels of awareness. Their depression scores were higher and functional impairments were lower. These patients had been treated with typical and atypical antipsychotics and antidepressants.

Conclusion: Social anxiety disorder comorbidity in schizophrenia adversely affects the quality of life and is not rare. Future studies should be planned with the assessment of social anxiety disorder treatment as well as schizophrenia treatment.

Key Words: social anxiety disorder, schizophrenia, comorbidity, clinical features

INTRODUCTION

The symptoms of social anxiety in schizophrenia were originally described by Pilkonis et al in 1980. It was demonstrated that these patients had a higher rate of social anxiety symptoms when compared to a control group. Argyle (1990) first considered social anxiety disorder as a diagnostic category and found comorbid social anxiety disorder in 20% of schizophrenia patients.

In epidemiological studies, the rate of comorbid social anxiety in schizophrenia patients was between 13-39% (Bermanzohn et al. 2000).

Tiryaki et al (2007) studied the distribution of comorbidities

in schizophrenia outpatients and found a comorbidity rate of %12.2, with social anxiety disorder in 1%.

There are various assumptions regarding the comorbidity of social anxiety disorder. For instance, it is assumed that social anxiety will increase in the acute aggravation period of schizophrenia parallel to the increase in negative and positive symptoms. However this idea was not supported by studies (Pallanti 2004). In follow up studies, the lack of change in social anxiety disorder in schizophrenia in follow up evaluations was emphasized.

Another hypothesis suggests that social anxiety disorder produces a predisposition to schizophrenia before the development of the disease. This was demonstrated in an Edinburgh study on the high risk of schizophrenia. In the Edinburgh

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study, it was suggested that in high risk groups state anxiety is among the best predictors for subsequent psychotic attacks. (Johnstone et al 2005).

The possibility that social anxiety disorder emerges as a response to psychosis has also been addressed (Birchwood et al 2003). Studies indicating the presence of social anxiety in the recovery period of schizophrenia support this view. Voges et al (2005) reported that 315 of the patients in remission who experienced their first psychotic attack fulfilled the criteria of social anxiety disorder. In another study, social anxiety disorder was found at the rate of 29% in the first year following the first psychotic attack (Birchwood et al 2007).

Freeman et al (2001) investigated the relationship between the persecution delusions and anxiety. They stated that anxiety was a defence against the perception of danger. It has also been proposed that anxiety is preponderant in paranoid states and plays an important part in coping with persecution delusion (Birchwood et al 2000).

Although the nature and development of social anxiety disorder in psychosis is not well understood, impairment in the quality of life is overwhelmingly evident (Pallanti et al 2000). It has been suggested that comorbid social anxiety disorder in schizophrenia leads to further impairment in functionality (Braga et al 2005).

Whether comorbid conditions can be explained by the severity of schizophrenia symptoms, their effects on the course of the disease still remains to be answered. Further, it was stated that the presence of social anxiety disorder in schizophrenia is associated with clinical features (e.g. high awareness of the disease and coexistence with depression) (Michail and Birchwood 2009).

The aim of the present study was to investigate the comorbidity of social anxiety disorder in patients with schizophrenia; to determine if the comorbidity of social anxiety disorder overlaps with positive and negative symptoms of schizophrenia and to evaluate the effect of the comorbidity status on the insight level and quality of life.

METHOD

Sample

102 patients (23 female and 79 male) were referred to the Psychotic disorders treatment, training and investigation center of Bakırköy Prof. Dr. Mazhar Osman Psychiatry Training and Investigation Hospital within the last three months. Diagnosis of schizophrenia was made according to DSM-IV Tr criteria by two independent psychiatrists. Schizophrenia diagnosis and subtype was ascertained by SCID. All of these patients who were included in the study were in the remission period. 423 patients were referred to the center. 321 patients could not be

included as they met exclusion criteria, refused to participate or were referred again. Consecutive patients in whom general psychotic disorder or alcohol or substance abuse related psychotic disorder were ruled out of the study. Patients who did not have a neurological disorder, who were at least graduates of primary school, did not undergo ECT in the last six months and gave verbal informed consent were enrolled in the study.

Evaluation tools and administration

The diagnosis of social anxiety disorder was made using SCID-I (Structured Clinical Interview for DSM IV) for Axis I disorders.

Patients were evaluated with socio demographic and clinical data, the positive and negative syndrome scale (PANSS), Calgary depression scale for schizophrenia, Liebowitz social anxiety scale, The Scale of Unawareness of social Disorders (SUMD) state-trait anxiety inventory and (STAI) and short form (SF 36) health survey questionnaire.

Tools used for evaluation

1. Structured Clinical interview for DSM-IV Axis I clinical diagnosis (SCID-I):

SCID-I (Structured Clinical Interview for DSM IV) is a clinical interview for DSM-IV axis I disorders (First et al 1997). The adaptation of SCID-I and its reliability and validity were brought to Turkey and carried out in 1999 by Özkürkçügil et al. SCID-I determines the presence of any axis I disorder.

2. Sociodemographic and clinical data form

It was prepared by the authors in order to evaluate sociodemographic data (age, sex, marital status, education status) and clinical characteristics (the number of admissions, treatment received, work life in the last six months). The information was collected from the subjects.

3. Positive and Negative Syndrome Scale (PANSS)

It is a semi structured interview scale developed in order to evaluate positive and negative symptoms in schizophrenia, other psychotic symptoms, general psychopathology and to measure the level of these symptoms (Kay et al 1987). It includes 30 items and is scored from zero to seven according to severity. Seven items belong to the positive syndrome sub scale, seven to the negative syndrome sub scale and the remaining 16 to the general psychopathology sub scale. The reliability and validity study of the scale in Turkish was carried out by Kostakoğlu et al (1999). Based upon the assumption that there is an overlap between symptoms of social anxiety, delusion and negative symptoms, PANSS was utilized to evaluate their concurrence and relation, especially suspiciousness, persecution, poor rapport, passive/apathetic social withdrawal, lack of spontaneity and flow of conversation and hostility will be analysed.

4. Calgary Depression scale for schizophrenia

It includes nine items. It makes measurements of items in four Likert type. Each item is scored between 0-3. The cut off point for overall score is 11. It was developed by Addington et al (1993). Its validity and reliability study in Turkish was carried out by Ömer Aydemir et al (2000).

5. Short form (SF-36)

It is the scale used most commonly to measure quality of life. It has been developed to measure quality of life especially in patients with a physical disorder. However, it is used successfully in those with psychiatric diseases as well (Eren et al 2007). Its scoring requires detailed instructions. The calculation of the score of sub scales requires a number of mathematical procedures. (Ware and Sherbourne 1992) Of four sub scales functionality includes 19 questions on restriction of physical activities associated with health problems, restriction of social activities associated with psychological and social problems, and prevention of daily living activities. well-being second one, includes 11 questions on psychological health, physical pain and vitality. Perception of health includes 6 questions on evaluation of health as a whole and alterations in health during the previous year. General quality of life, the fourth one, includes 36 questions on functionality, well-being and perception of health. The reliability of validity study of the scale was made by Hikmet Koçyiğit et al (1999)

6. The Scale of Unawareness of Mental Disorders (SUMD):

Its reliability and validity study was carried out on 43 schizophrenia/schizoaffective disorder patients (Amador et al 1991). All questions are coded separately for present and the past. Amador et al (1994) published the shortened form of the scale with nine questions. It is difficult to show its reliability for rare symptoms (e.g. stereotypic behavior) and the reliability of these symptoms is doubtful in the original scale. Therefore, in adaptation to Turkish, only questions in the shortened version were included (Bora et al 2006). The Scale contains seven introductory and seven symptom questions. As in the original version of the scale, questions are scored between 1-5 for present and the past. For seven symptoms and awareness are evaluated separately. As the present study is not primarily focused on the components of insight. Insight is evaluated by overall score. As lack of insight score increases, awareness decreases.

7. Liebowitz Social anxiety scale

It was prepared to determine the fear and avoidance levels of patients with social anxiety disorder in social interaction and performance situations, (Heimberg et al 1999). It has overall 24 items which are evaluated separately for anxiety and avoidance. Reliability and validity studies of Turkish version was made by Çiğdem Soykan et al in 2003. The cut off score was not calculated.

Romm et al (2010), in first attack psychosis patients and Pallanti et al (2004) in schizophrenia outpatients concluded that Liebowitz Social anxiety scale was reliable and practical in the evaluation of social anxiety.

8. State-trait anxiety inventory

Inventory includes two different inventories, each having 20 items. The state anxiety inventory determines how the individual feels at a certain moment and under certain conditions. The trait anxiety inventory determines how the individual feels irrespective of conditions and circumstances (Spielberger et al 1970).

Inventories have direct and inverted sentences. When scoring 'inverted' sentences expressing positive feelings, those with a weight value of 1 are transformed into 4 and those at the value of 4 are transformed into 1. In direct statements expressing negative feelings, answers scored as 4 indicate a high level of anxiety. In inverted statements, answers scored as 4 indicate low anxiety and those scored as 1 indicate high anxiety. The overall score from both inventories vary between 20 and 80. High scores demonstrate high anxiety levels. Reliability and validity study of Turkish version was made by T Öner and Le Compte in 1985.

Statistical evaluation:

Number Cruncher Statistical System (NCSS) and 2007&PASS 2008 Statistical Software (Utah, USA) were used to analyze the data. Descriptive statistics (mean, standard deviation) were used to study the data between normally distributed groups. The one way Anova test was utilized in the determination of the group causing differences Tukey HSD test was also used. In the intergroup comparison of parameters without normal distribution the Kruskal Wallis test was used and to determine the groups causing difference the Mann Whitney U test was used. In the inter group comparison of parameters normally distributed, Student's t test, and in the comparison of parameters not normally distributed, Mann Whitney U test was used. Chi square test was used in the comparison of quantitative data. For the analysis of the relation between normally distributed parameters, Pearson correlation analysis, for the analysis of the relation between parameters not normally distributed, Spearman's Rho correlation analysis was used. A p value of <0.05 was considered significant.

RESULTS

Sociodemographic characteristics

Overall 102 patients 23 (22,5%) female, 79 (77,5%) male were included in the study. The age of the cases varied between 20 and 53, with a mean age of 35,42±8,31. The sociodemographic characteristics of the patients is shown in table 1.

Table 1. The distribution of sociodemographic and clinical characteristics

		N	%
Sex	Female	23	22,5
	Male	79	77,5
Place of birth	Rural	29	28,4
	Urban	73	71,6
Place of residence	Rural	1	1
	urban	101	99
Education level	Primary school	32	31,4
	Secondary school	18	17,6
	High school	30	29,4
	University	22	21,6
Marital status	Single	85	83,3
	married	17	16,7
Employment status	Employed	20	19,6
	Unemployed	58	55,9
	Retired	24	23,5
Work status in last 6 months	Yes	21	20,6
	No	81	79,4
Treatment in last one year	Atypical antipsychotic	27	26,5
	Combined Antipsychotic	38	37,2
	combined AP + AD	25	24,5
	Atypical AP + AD	12	11,8
Social phobia Fobi	Present	22	21,6
	absent	80	78,4
Subtype	Paranoid type	42	41,2
	Undifferentiated type	15	14,7
	Residual (kalıntı) type	45	44,1

Comorbid diagnosis and clinical characteristics

When the distribution of patients into subtypes was evaluated, 41.2% (n=42) were found to belong to the paranoid type, 14.7%(n=15) to the undifferentiated type and 44.1% (n=45) to the residual type schizophrenia (Table 1).

When DSM-4 diagnostic criteria were evaluated with SCID-I, comorbid social phobia was found in 21.6 % (n=22) of the patients (Table 1).

In the comparison between those who have comorbid social phobia and those who do not have it; it was found that in those with comorbid social phobia, overall scores of lack of insight evaluated with SUMD were found to be low. Hence their awareness of the disease was significantly higher (Table 2).

Patients with comorbid social phobia diagnosis were found to have high Calgary depression scores (Table2).

When anxiety levels were compared between those who have social phobia and those without social phobia, using state-trait anxiety inventory, no significant difference was found between them (Table2).

The comparison of quality of life measured with short form between patients with and without comorbid social phobia was shown in table 3. In schizophrenia patients with comorbid social phobia, functionality levels evaluated with well-being general concept of health, general satisfaction with life were found to be significantly lower.

Table 2. Evaluation of scores of scales according to presence of social phobia

	Social Phobia		p	Test value(t)
	Present	absent		
	mean±SD (Median)	mean±SD (Median)		
SF 36 scores				
Functionality status	69,68±31,48	84,57±18,75	0,044*	-2,117
Well being	60,27±11,79	69,95±10,76	0,001**	-3,678
General health perception	60,86±15,94	71,38±16,09	0,008**	-2,722
General satisfaction with life	63,59±17,82	73,30±12,01	0,007**	-2,907
STAI scores				
State anxiety	39,18±3,55	38,73±4,46	0,667	0,431
Trait anxiety	37,36±4,28	37,82±4,71	0,679	-0,415
PANSS scores				
Positive overall	10,18±3,17	11,20±4,18	0,292	-1,059
Negative overall	15,86±6,49	16,10±4,51	0,874	-0,160
General psychopathology	53,50±13,02	51,26±9,66	0,376	0,889
Suspicion/Persecution ^a	2,14±1,12 (2)	2,04±1,11 (2)	0,694	-0,393
Poor rapport ^a	2,27±1,12 (2)	2,40±0,96 (2)	0,448	-0,760
Passive/apathetic social withdrawal ^a	2,41±1,36 (2)	2,46±1,02 (3)	0,464	-0,733
Lack of spontaneity and flow of conversation ^a	2,36±1,39 (2)	2,05±0,99 (2)	0,539	-0,614
Hostility ^a	3,41±0,79 (3)	3,20±0,49 (3)	0,218	-1,231
SUMD Overall score	5,86±2,41	7,36±3,09	0,038*	-2,102
Calgary Overall score	3,32±2,75 (3)	1,18±1,83 (0)	0,001**	-3,619
<i>Student t test was used</i>	<i>^aMann-Whitney U test</i>		<i>*p<0,05</i>	<i>**p<0,01</i>

Table 3. The evaluation of social phobia according to treatment type received in last year

Social phobia	Treatment in last one year				P
	Atypical AP n (%)	Combined AP n (%)	Combined AP+AD n (%)	Atypical AP+AD n (%)	
Present	3 (%11,1)	4 (%10,5)	10 (%40)	5 (%41,7)	0,006**
Absent	24 (%88,9)	34 (%89,5)	15 (%60)	7 (%58,3)	
chi square test was used.	**p<0,01				

When the treatment undergone by patients within the last year were investigated, it was established that; 26.5% (n=27) were on atypical antipsychotics, 37.2%(n=38) were on typical and atypical antipsychotics, 24.5% (n=25) were on typical and atypical antipsychotics and antidepressants and 11.8% (n=12) were on atypical antipsychotics and antidepressants (Table1).

When the treatments received by patients social phobia were compared, the rates of treatment with combined AP+AD and atypical AP+AD were found to be significantly higher (Table 3).

A significant difference was found between four treatment options used in the last year in terms of Liebowitz anxiety scores.(p<0,05). In order to determine the group, which is the source of difference, the Tukey-HSD test was carried out. It was determined that patients receiving combined AP+AD treatment had significantly higher scores than those receiving combined AP treatment. (p=0.038; p<0.05).

Table 4. The relation between Liebowitz scale and scores obtained from other scales

	Liebowitz scale	
	Anxiety scores	Avoidance score
PANSS scores		
Positive Overall	-0,111	-0,114
Negative overall	0,015	0,022
General psychopathology	0,084	0,094
Suspicion/ persecution ^a	-0,073	-0,074
Poor rapport ^a	-0,026	-0,016
Passive /apathetic social withdrawal ^a	-0,015	-0,003
Lack of spontaneity and flow of conversation ^a	0,028	0,027
Hostility ^a	0,182	0,184
STAI scores		
State anxiety	0,003	0,005
Trait anxiety	-0,016	-0,015
SF 36 scores		
Functionality status	-0,273**	-0,270**
Well being	-0,339**	-0,337**
General concept of health *	-0,202*	-0,210*
General satisfaction with life	-0,317**	-0,318**
SUMD Overall score	-0,169	-0,168
Calgary Toplam Puanı ^a	0,262**	0,257**

Pearson Correlation analysis was used.

^aSpearman's analysis was used. *p<0,05 **p<0,01

Liebowitz Avoidance Scores were found to be significantly different between four treatment options used in the last year. (p<0,05). The Tukey-HSD test was made to determine what causes differentiation. It was found that patients receiving combined AP+AD treatment had significantly higher scores than those receiving combined AP treatment (p=0.036).

The analysis of the relation between the Liebowitz scale sub-scales and those of quality of life is demonstrated in table 4.

Negative statistical relation was found between anxiety score of Liebowitz scale and the status of functionality (r=0.273), well-being (r=0.339), general concept of health (r=0.202), general satisfaction with life(r=0.317) and negative statistical relation with Calgary Depression scores (r=0.262), but their significance was low (p<0,01) (Table4).

As to the avoidance score in Liebowitz scale, insignificant negative relation was found between it and functionality status (r=0.27), well-being (r=0.337), general concept of health (r=0.21), general satisfaction with life (r=0.318) scores and significant positive relation with Calgary Depression scores (r=0.257) (p<0,01) (Table 4).

DISCUSSION

In the present study, comorbid social anxiety disorder diagnosis was made in 21.6% (n=22) of the patients. Among other studies carried out pertaining to schizophrenia outpatients in remission (with similar methods), as comorbid diagnosis and social anxiety disorder was found at the rate of 23.3% by Tibbo et al (2003) and at the rate of 36.3% by Pallanti et al (2004). Braga et al (2005) investigated the life long prevalence of comorbid anxiety disorder in a similar sample and found social anxiety disorder 17%.

One of the opinions on the relationship between schizophrenia and comorbid social anxiety disorder is that there is an association between the main symptoms of schizophrenia and the symptoms of social anxiety disorder. Voges et al (2005) reported that there was a relation between social anxiety and negative symptoms in their study on first attack psychosis patients. It was also stressed that social anxiety is associated with negative symptoms particularly behavioral occurrences. It has been thought that social withdrawal in schizophrenia may mask the symptoms of social anxiety disorder.

In patients in clinical remission, the relation between negative symptoms and low socialisation has been demonstrated. It was thought that the decrease in social skills may produce a vicious circle, by increasing negative symptoms (Mazeh et al 2009).

Yet in the present study, in the presence of comorbid social phobia, no statistically significant difference was found in subscales of PANSS. This is keeping with the results of studies reporting that there was no significant relation between the severity of psychotic symptoms evaluated by PANSS, SAPS and SANS (Pallanti et al 2004) scores and social anxiety disorder (Stern et al 1999).

However Birchwood et al (2006) used a different design. Birchwood's findings were consistent with the finding that in outpatients who had first psychotic attack, social anxiety disorder did not develop secondarily to psychotic findings.

In the present study, it was found that the insight level was higher in schizophrenia patients with comorbid social anxiety disorder than those without it. There are few studies on this subject (Birchwood 2003).

Many schizophrenia patients have no awareness of their disease, its clinical symptoms, social consequences and the need for treatment. It is thought that the lack of insight is a kind of reaction to the diagnosis of schizophrenia i.e. it is a way of coping with the disease (Cuesta ve Peralta 1994) (David 1990). It has also been claimed that people with a high level of insight, anxiety may emerge as a reaction. (Kaiser et al 2006)

In the present study, it was determined that schizophrenia patients with comorbid social anxiety disorder were more depressed. Similarly, Birchwood et al (2006) reported that the group with social anxiety disorder had an depressive inclination. It was stated that depression is an expected result in comorbid social anxiety disorder (Stein et al 2001).

In the present study, no significant relation was found between anxiety or avoidance subscale scores of Liebowitz social anxiety scale and sub scales of PANSS and the relation with depression independent of psychotic symptoms is striking. No statistically significant relation was found between the presence of comorbid social anxiety disorder and state and trait anxiety scores. It was thought that this may be related to difficulty in expressing non specific anxiety symptoms with the impact of negative symptoms in schizophrenia patients. However, the design and findings of our study can not account for this.

In the present study, it was found that patients with comorbid social anxiety disorder had a lower quality of life. Pallanti et al (2004) in parallel to our findings, established that patients with comorbid social anxiety disorder, had lower levels of social adjustment and quality of life than those without it.

In another study, it was shown that comorbid anxiety disorder in schizophrenia patients enhances loss of capacity. Thereby further impairing quality of life particularly in social and professional aspects (Braga et al 2005).

Lysaker and Salyer (2007) stated that, 'in schizophrenia patients in clinical remission, high levels of anxiety worsened psychosocial functionality and may be evaluated as a separate clinical profile'.

In the present study, anxiety and avoidance scores evaluated with Liebowitz social anxiety scale were determined to affect functionality levels separately. As anxiety and avoidance levels increase, functionality level decreases.

The treatment unit where we conducted our study offers a tertiary health service in our hospital. Admission of the patients to the unit is subjected to certain criteria. Our patients are mostly ones with relatively good adjustment to management.

The treatments received by our patients in the last one year are as follows: 26,5% (n=27) atypical antipsychotics, 37,2% (n=38) combined antipsychotics, 24,5% (n=25) combined antipsychotics and antidepressants, 11,8% (n=12) atypical antipsychotics and antidepressants.

In patients with social phobia, combined antipsychotic and an antidepressant treatment and an atypical antipsychotic combined with an antidepressant treatment were found to be used significantly higher than the other medications.

The fact that our patients received atypical antipsychotic treatment during the course of the study and that the association between comorbid diagnosis and treatment could not be ruled out may be considered among the limitations of the present study. Further studies on the issue are required.

In the present study, Liebowitz anxiety and avoidance scores were found to be higher in the patients receiving combined antipsychotics and antidepressants than those receiving combined antipsychotics.

The reason why social anxiety disorder is present in these patients in spite of the use of antidepressants may be the failure of using proper treatment options and doses as well as the possible aggravation of the symptoms of social anxiety by atypical antipsychotics. It was reported that schizophrenia patients who have comorbid social anxiety disorder receive Clozapin or Olanzapin for treatment while those who do not have such comorbidity receive Risperidon or Ketiapin (Pallanti et al 2004).

Studies on the management of patients who have comorbid social anxiety is far from adequate. There is no treatment guideline for these patients yet.

It was stated that the addition of Fluoxetine to the neuroleptic treatment did not affect positive or negative symptoms while relieving the symptoms of social anxiety (Pallanti et al 1999).

It was advocated that decreasing the dose of atypical neuroleptics or switching to another antipsychotic alleviated the symptoms of social anxiety (Pallanti et al 2004). However, data on this issue are not adequate.

CONCLUSION

Social anxiety disorder occurs at a rate of 13-39% in schizophrenia patients. This comorbidity is commonly reflected in

clinical practice. In the clinical practice there is a high awareness of the disease and association with depression. In the present study, no significant difference was found in any of the subscales of PANSS in the presence of comorbid social phobia (Table 2).

In management plans, assuming the presence of a social anxiety disorder, which further worsens quality of life in schizophrenia patients, may be beneficial.

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