

Insight and Social Functioning in Deficit and Non-Deficit Schizophrenia



Ferdi KÖŞGER¹, Hatice ŞAHİN², Altan EŞSİZÖĞLU³, Gökay AKSARAY⁴

SUMMARY

Objective: Deficit syndrome is a symptom complex that progresses with primary and persistent negative symptoms; therefore, it is difficult to diagnose. Low-level social functioning may be anticipated in patients with deficit schizophrenia. Moreover, lack of insight, which is another significant symptom of schizophrenia, is thought to occur more frequently in patients with deficit syndrome. The present study aimed to compare insight and social functioning in schizophrenia patients with and without deficit syndrome.

Materials and Methods: The study included 71 outpatients that were followed-up at Eskişehir Osmangazi University, School of Medicine, Psychotic Disorders Polyclinic. All the patients were diagnosed as schizophrenia according to DSM-IV Axis I criteria via administration of the Structured Clinical Interview I (SCID-I). Participants were also evaluated using the Schedule for Deficit Syndrome (SDS), and were accordingly divided into 2 groups: deficit schizophrenia (n = 30) and non-deficit schizophrenia (n = 41). Additionally, the patients were assessed to determine if they had the paranoid subtype of schizophrenia. Both groups were administered the Scale for the Assessment of Positive Symptoms (SAPS), Scale for the Assessment of Negative Symptoms (SANS), Schedule for Assessing the Three Components of Insight (SAI) and Personal and Social Performance Scale (PSP).

Results: There were significantly more patients with the non-paranoid subtype in the deficit schizophrenia group than in the non-deficit schizophrenia group. Mean SAI and PSP scores were significantly lower, and mean SAPS and SANS scores were significantly higher in the deficit group than in the non-deficit group.

Conclusion: The present findings indicate the importance of lack of insight and low-level social functioning in patients with deficit schizophrenia.

Keywords: Schizophrenia, deficit syndrome, insight, social functioning

INTRODUCTION

Since first described by Kraepelin and Bleuer, the effects of positive and negative symptoms on the diagnosis of schizophrenia and its treatment have been a popular topic of research. Carpenter et al. (1988) reported that certain parts of the negative symptoms in schizophrenia depend on illness effects and medications, but that negative symptoms are present essentially at the onset and that it is necessary to discriminate between primary deficit syndrome and secondary negative symptoms to fully understand psychopathology. After deficit syndrome was first described, subsequent relevant studies reported that patients with deficit syndrome have lower

functionality than before the onset of illness (Kirkpatrick et al. 2001), more severe cognitive impairment (Cohen et al. 2007), lower remission rates, and poorer prognosis (Strauss et al. 2010). Patients with deficit syndrome do not respond as well as those without deficit syndrome to such treatments as medications and social skills training (Buchanan et al. 1998; Kopelowicz et al. 1997).

Insight in schizophrenia is a multifaceted concept that encompasses psychological, psychopathological, and neurobiological mechanisms, and interpersonal relationships (Dankı et al. 2007). It is known that 50%-80% of schizophrenia patients have low-level insight and that this adversely affects the treatment process (Dankı et al. 2007; Cuesta and Peralta

Received: 04.09.2013 - Accepted: 30.12.2013

¹MD/Assist., Prof., ²MD, ³MD/Assoc., Prof., ⁴MD/Prof., Eskişehir Osmangazi University, Faculty of Medicine, Department of, Psychiatry, Eskişehir, Turkey.

e-mail: ferdikosger@mynet.com

1994). Some clinical studies on schizophrenia and insight reported that there is a linear relationship between the degree of insight and positive symptoms (Baier et al. 2000), whereas others reported that insight was associated with both negative and positive symptoms (Debowska et al. 1998), and that there wasn't a relationship between insight, and positive or negative symptoms (Schwart and Peterson 1999).

There are a limited number of studies on the relationship between deficit syndrome, and poor prognosis and insight in schizophrenia patients. It was reported that patients with deficit syndrome have poorer insight than patients without deficit syndrome, and that more research is necessary (Dantas et al. 2011; Kirkpatrick et al. 2000). Exploration of the relationship between poor insight, which can negatively affect treatment compliance, prognosis, and social functioning, and deficit syndrome at the onset of schizophrenia may help clinicians design more effective treatment plans. Schizophrenia patients with deficit syndrome can be expected to have poor insight and severe dysfunction. The present study aimed to compare the levels of insight and social functioning in schizophrenia patients with and without deficit syndrome.

METHOD and MATERIALS

The study included 71 consecutive patients diagnosed as schizophrenia that were followed-up at Eskişehir Osmangazi University, School of Medicine, Department of Psychiatry, Eskişehir, Turkey, between 1 January 2013 and 30 June 2013. Schizophrenia and deficit syndrome were diagnosed via the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and the Schedule for Deficit Syndrome (SDS). Then, 2 groups were formed that included those with ($n = 30$) and without ($n = 41$) deficit syndrome. Additionally, patients with the paranoid subtype of schizophrenia were identified. Both patient groups were evaluated using the Scale for the Assessment of Positive Symptoms (SAPS), Scale for the Assessment of Negative Symptoms (SANS), Schedule for Assessing the Three Components of Insight (SAI), and Personal and Social Performance Scale (PSP). Scales other than Schedule for the Deficit Syndrome were administered by a different researcher, who was blind to the deficit syndrome status of the patients.

Literacy and age 18-65 years were the inclusion criteria, and the presence of substance abuse during the previous 6 months, history of any illness that affects the central nervous system, such as epilepsy and mental retardation, and the presence of a mental disorder other than schizophrenia were the exclusion criteria. All the patients provided written informed consent and the Eskişehir Osmangazi University, School of Medicine Ethics Committee approved the study protocol.

Assessment Tools

Sociodemographic Data Form: This form was prepared by the researchers to collect sociodemographic data, including age, gender, level of education, and marital status, and illness-related characteristics.

Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I): This scale was developed by First et al. (1997) for clinical diagnosis. SCID-I was translated into Turkish and was reported to be reliable and valid for use on Turkey by Özkürkçügil et al. (1999).

Schedule for Deficit Syndrome (SDS): SDS was developed by Kirkpatrick et al. (1993) to assess the primary and permanent negative symptoms in schizophrenia patients, i.e. those due to deficit syndrome. The scale's first section assesses 6 negative symptoms— χ^2 affect, diminished emotional range, poverty of speech, curbing of interests, diminished sense of purpose, and diminished social drive—that are rated on a scale ranging from 0 (normal) to 4 (serious deterioration). To diagnose deficit syndrome >2 symptoms must have a score ≥ 2 . The second section is used to determine if the negative symptoms assessed in the first section persisted during the previous year and during periods of remission. The third section is used to determine if negative symptoms are primary (meaning that they occurred as a result of some condition other than schizophrenia, such as medication, depression, delusions, or anxiety). Lastly, classification as deficit syndrome and non-deficit syndrome is based on integrative evaluation. The Turkish version was reported to be reliable and valid for use in Turkey by Çıtak et al. (2006).

Scale for the Assessment of Positive Symptoms (SAPS): SAPS is a clinician-administered scale developed by Andreasen (1983) that includes the following 5 subscales: hallucinations, delusions, disorganized behavior, positive formal thought disorder, and inappropriate affect. The Turkish version was reported to be reliable and valid for use in Turkey by Erkoç et al. (1991a).

Scale for the Assessment of Negative Symptoms (SANS): SANS is a clinician-administered scale developed by Andreasen (1984) that includes the following 5 subscales: blunted affect, alogia, avolition/apathy, anhedonia/asociality, and attention (Andreasen 1984). The Turkish version was reported to be reliable and valid for use in Turkey by Erkoç et al. (1991b).

Schedule for Assessing the Three Components of Insight (SAI): David (1990) reported that insight could not be evaluated based on the absence or presence of it, and has developed this clinician-administered scale for quantitatively measuring insight in the light of 3 components: treatment

adherence, symptom relabeling, and recognition of illness. SAI includes 8 items, the first 7 of which have a total maximum score of 14. The eighth item is 'Inconditions, how do you feel when people do not believe in you?' The maximum total score including the eighth item is 18. Higher scores indicate higher levels of insight. The Turkish version was reported to be reliable and valid for use in Turkey by Arslan et al. (2000).

Personal and Social Performance Scale (PSP): PSP was developed by Moirisini et al. (2000) to measure short-term social functioning in patients with severe mental disorders such as schizophrenia. The Turkish version was reported to be reliable and valid for use in Turkey by Aydemir et al. (2009).

Statistical Analysis

Data were analyzed using SPSS v.18.0 for Windows. The chi-square test was used to compare numeric data and Student's t-test was used to compare continuous data. The level of statistical significance was set at $P < 0.05$. Variables determined to differ significantly were subjected to logistic regression analysis to identify factors predictive of deficit syndrome.

RESULTS

The study included 71 patients diagnosed as schizophrenia that were assigned to the deficit syndrome group ($n = 30$) or the non-deficit syndrome group ($n = 41$) according to SDS-based assessment. There weren't any significant differences in mean age ($P = 0.510$), gender ($P = 0.943$), duration of education ($P = 0.760$), duration of illness ($P = 0.281$), or marital status ($P = 0.186$) between the 2 groups (Table 1). In all, 9 (30%) of the patients in the deficit syndrome group had

the paranoid subtype of schizophrenia and 21 (70%) did not, whereas in the non-deficit syndrome group 23 (56%) had the paranoid subtype and 18 (43.9%) did not. The percentage of patients that did not have the paranoid subtype of schizophrenia was significantly higher in the deficit group than in the non-deficit group ($\chi^2 = 4.766$, $P = 0.029$) (Table 1).

In total, 27 (90%) of the patients with deficit syndrome were using atypical antipsychotics, whereas 3 (10%) were using a combination of typical and atypical antipsychotics. Among the non-deficit patients, 36 (87.8%) were using atypical antipsychotics and 5 (12.2%) were using a combination of atypical and typical antipsychotics. There wasn't a significant difference between the deficit and non-deficit groups in terms of the types of antipsychotics used ($\chi^2 = 0.083$, $P = 0.773$) (Table 1). The mean SAI score in the deficit syndrome and non-deficit groups was 6.80 ± 2.52 and 10.44 ± 3.36 , respectively; the mean SAI score was significantly lower in the deficit syndrome group ($t = -4.98$, $P < 0.001$) (Table 2). The mean PSP score in the deficit syndrome and non-deficit groups was 53.60 ± 13.00 and 70.85 ± 11.51 , respectively, and the difference was significant ($t = -5.90$, $P < 0.001$) (Table 2).

The mean total SAPS score was 19.50 ± 12.10 in the deficit group, versus 12.80 ± 12.27 in the non-deficit group; the difference was significant ($t = 2.28$, $P = 0.025$). The mean total SANS score was 45.57 ± 17.69 in the deficit group and 20.95 ± 9.64 in the non-deficit group, and the difference was significant ($t = 7.52$, $P < 0.001$) (Table 2). Logistic regression analysis of the variables that differed significantly was performed to identify factors predictive of deficit syndrome; the factors that were analyzed as independent variables did not have predictive power (Table 3).

Table1. Demographic characteristics of the patients with and without deficit syndrome

	Deficit Syndrome (n = 30)		Non-Deficit Syndrome (n = 41)		χ^2/t	P
	n/mean	%/±SD	n/mean	%/±SD		
Gender						
Female	10	33.3	14	34.1	0.005	0.943
Male	20	66.7	27	65.9		
Marital Status						
Married	10	33.3	8	19.5	1.749	0.186
Single/Widow/Divorced	20	66.7	33	80.5		
Age (years)	42.30	11.06	40.65	9.74	0.662	0.510
Duration of Education (years)	9.33	3.97	9.60	3.68	0.300	0.760
Duration of Illness (years)	15.83	10.82	13.24	9.20	1.09	0.281
Schizophrenia Subtype						
Paranoid	9	30.0	23	56.1	4.766	0.029
Non-Paranoid	21	70.0	18	43.9		
Antipsychotic Use						
Atypical	27	90.0	36	87.8	0.083	0.773
Atypical-Typical Combination	3	10.0	5	12.2		

Table 2. Comparison of mean SAI, PSP, SAPS, and SANS scores in the patients with and without deficit syndrome.

	Deficit Syndrome (n = 30)		Non-Deficit Syndrome (n = 41)		t	P
	Mean ±	SD	Mean ±	SD		
SAI	6.80	2.52	10.44	3.36	−4.98	0.000
PSP	53.60	13.00	70.85	11.51	−5.90	0.000
SAPS Total	19.50	12.10	12.80	12.27	2.28	0.025
Delusions	3.37	4.21	2.07	2.54	1.61	0.112
Hallucinations	9.33	5.17	5.88	5.41	2.71	0.009
Bizarre Behavior	2.27	2.18	1.34	2.53	1.61	0.111
Positive Formal Thought Disorder	3.17	3.48	3.51	4.91	−0.33	0.743
SANS Total	45.57	17.69	20.95	9.64	7.52	0.000
Flattened Affect	15.10	5.51	6.39	3.01	8.54	0.000
Alogia	7.47	4.19	2.49	2.66	6.12	0.000
Avolition	7.80	3.36	4.37	2.42	5.02	0.000
Anhedonia	13.40	2.97	7.27	3.10	8.39	0.000
Attention	3.20	3.58	1.17	1.82	3.13	0.003

Table 3. Predictive factors for deficit syndrome

Independent Variables	Deficit Syndrome		
	OR	95% CI	P
Schizophrenia Subtype			
Paranoid	1.0	-	-
Non-Paranoid	3.627	0.2376-55.385	0.354
SAI	1.317	0.811-2.138	0.266
PSP	1.104	0.929-1.314	0.261
SAPS Total	1.018	0.838-1.238	0.856
Delusions	1.355	0.863-2.129	0.187
SANS Total	0.944	0.753-1.183	0.617
Flattened Affect	0.584	0.334-1.022	0.060
Alogia	0.919	0.509-1.657	0.778
Avolition	1.256	0.600-2.626	0.545
Anhedonia	0.437	0.179-1.070	0.070
Attention	0.901	0.417-1.948	0.792

OR: Odds ratio; CI: confidence interval;
SAI: Schedule for Assessing the Three
Components of Insight; PSP: Personal and
Social Performance Scale; PANS: Scale for the
Assessment of Positive Symptoms; SANS: Scale
for the Assessment of Negative Symptoms.

DISCUSSION and CONCLUSION

Kirkpatrick et al. (2001) noted that administration of SDS alone was insufficient for identifying patients with deficit syndrome. They also suggested that despite the difference in primary negative symptoms between those with and without deficit syndrome there shouldn't be a difference in the severity of positive symptoms, depression, anxiety, guilt, and hostility are rare in those with deficit syndrome, and that psychotic episodes should show similar progression. In the present study, as anticipated, SANS total score, which determined the severity of negative symptoms and scores of flattened affect, alogia, avolition, anhedonia and attention subscales pointed to a more severe condition in deficit group. Nevertheless, SAPS

total score, which assesses the severity of positive symptoms, and the delusion subscale score were significantly higher in the deficit syndrome group.

Liddle (1987) reported that there isn't an inverse relationship between positive and negative symptoms in schizophrenia. Cohen et al. (2010) did not observe a difference in positive symptoms between patients with and without deficit syndrome based on a meta-analysis. They also reported that deficit syndrome could be a distinct syndrome and that it is not plausible to consider it as a severe form of schizophrenia. Deficit syndrome—by definition and inherently—is continuous, independent of such secondary factors as depression, medication, and paranoia characterized by predominant primary negative symptoms. SDS is used to identify deficit syndrome based on evaluation of clinical status during the previous year. Additionally, SAPS is used to assess the clinical status of patients during the previous month. In the light of an integrative approach the higher SAPS total scores and SAPS delusion subscale scores in the present study's patients with deficit syndrome might have been due to the cross-sectional assessment of positive symptoms. In addition, the present study's finding that SANS total score and scores for the subscales that determine the severity of negative symptoms, such as flattened affect, alogia, avolition, anhedonia, and attention, were significantly higher in the deficit group might indicate that deficit syndrome could be identified based on negative symptoms.

The paranoid subtype of schizophrenia is known to be associated with a less severe course and higher level of functioning than other subtypes (American Psychiatry Association 2000). Similarly, in the present study the incidence of deficit syndrome, which was associated with functional impairment, was significantly higher in the non-paranoid type schizophrenia patients. Lack of insight is an essential symptom of schizophrenia (Dantas et al. 2011). In the present study the patients

with deficit syndrome had a lower-level of insight. The studies that determine a lack of a relationship between level of insight and negative symptoms (Smith et al. 1998; Amador et al. 1994) were criticized for not being conducted on primary negative symptoms (Trotman et al. 2011). Trotman et al. (2011) studied patients diagnosed with a first-episode of a psychotic disorder and reported that among those with deficit syndrome associated with primary negative symptoms the lack of insight was more severe, and that deficit syndrome and poor insight were present since the onset of the illness. The relationship between deficit syndrome and low-level insight observed in the present study supports the findings reported by Trotman et al. (2011).

It is known that in patients with deficit syndrome functionality before the onset of illness is lower and the response to such treatments as medication and social skills training is limited, as compared to those without deficit syndrome (Kirkpatrick et al. 2001; Buchanan et al. 1998; Kopelowicz et al. 1997). In the present study personal and social functioning were at a lower level in the patients with deficit syndrome than in those without. The finding that from the two groups that have regular polyclinic follow-ups and that are under antipsychotic medication, the ones with deficit syndrome were determined to have significant impairment in the light of personal and social performance scale, which assesses functionality especially during the last one month, may indicate the need for new treatment approaches for deficit syndrome.

Although flattened affect ($P = 0.060$) and anhedonia ($P = 0.070$) were found to be approaching the significance level in the logistic regression analysis, the independent variables that are taken into the analysis were found not to be predictive in deficit syndrome. These findings might have been associated with the number of patients included in the study.

The present study has some limitations, as follows: a small number of patients, especially for logistic regression analysis; lack of cognitive functional assessment (which could be closely associated with functionality); lack of the evaluation of drug treatment compliance. Nonetheless, the present findings show the coexistence of poor insight and functional impairment in schizophrenia patients with deficit syndrome. Longitudinal studies on insight and functional impairment in deficit syndrome might provide additional valuable data on the clinical course of deficit syndrome that could be used to aid in the design of new treatment approaches.

REFERENCES

- Amador XF, Flaum M, Andreasen NC et al (1994) Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Arch Gen Psychiatry* 51: 826-36.
- American Psychiatric Association (2000) DSM-IV - Diagnostic and Statistical Manual of Mental Disorders - 4th Edition, Text Revision American Psychiatric Association, Washington DC.
- Andreasen NC (1983) Scale for the Assessment of Positive Symptoms (SAPS) Iowa City, University of Iowa.
- Andreasen NC (1984) Scale for the Assessment of Negative Symptoms (SANS) Iowa City, University of Iowa.
- Arslan S, Günay Kılıç B, Karakılıç H (2000) İlgörünün Üç Bileşenini Değerlendirme Ölçeği güvenilirlik ve geçerlik çalışması. *Türkiye'de Psikiyatri* 3: 17-24.
- Aydemir Ö, Üçok A, Esen A et al (2009) Bireysel ve Sosyal Performans Ölçeği'nin Türkçe sürümünün Geçerlilik ve Güvenilirlik Çalışması. *Klinik Psikofarmakoloji Bülteni* 19: 93-8.
- Baier M, DeShay E, Owens K et al (2000) The relationship between insight and clinic factors for persons with schizophrenia. *Arch Psychiatr Nurs* 14: 259-65.
- Buchanan RW, Breier A, Kirkpatrick B et al (1998) Positive and negative symptom response to clozapine in schizophrenic patients with and without the deficit syndrome. *Am J Psychiatry* 155: 751-60.
- Carpenter WT Jr, Heinrichs DW, Wagman AMI (1988) Deficit and nondeficit forms of schizophrenia: the concept. *Am J Psychiatry* 145: 578-83.
- Cohen AS, Brown LA, Minor KS (2010) The psychiatric symptomatology of deficit schizophrenia: a meta-analysis. *Schizophr Res* 118: 122-7.
- Cohen AS, Saperstein AM, Gold JM et al (2007) Neuropsychology of the deficit syndrome: new data and meta-analysis of findings to date. *Schizophr Bull* 33: 1201-12.
- Cuesta MJ, Peralta V (1994) Lack of insight in schizophrenia. *Schizophr Bull* 20: 359-66.
- Çıtak S, Oral ET, Aker T et al (2006) Şizofreni'de Eksiklik Sendromu Çizelgesi (ESC)'nin Güvenilirlik ve Geçerlik Çalışması. *Türk Psikiyatri Derg* 17: 115-28.
- Dankı D, Dilbaz N, Okay İT et al (2007) Şizofreni Tanısı Olan Hastalarda İlgörünün Aile Öyküsü, Pozitif ve Negatif Belirtilerle İlişkisi. *Türk Psikiyatri Derg* 18: 129-36.
- Dantas CR, Barros BR, Fernandes PT et al (2011) Insight controlled for cognition in deficit and nondeficit schizophrenia. *Schizophr Res* 128: 124-6.
- David AS (1990) Insight and psychosis. *Br J Psychiatry* 156: 798-808.
- Debowska G, Grzywa A, Kucharska-Pietura K (1998) Insight in paranoid schizophrenia-its relationship to psychopathology and premorbid adjustment. *Comp Psychiatry* 39: 255-60.
- Erkoç Ş, Arkonaç O, Ataklı C et al (1991a) Pozitif semptomları değerlendirme ölçeğinin güvenilirliği ve geçerliliği. *Düşünen Adam* 4: 20-4.
- Erkoç Ş, Arkonaç O, Ataklı C et al (1991b) Negatif semptomları değerlendirme ölçeğinin güvenilirliği ve geçerliliği. *Düşünen Adam* 4: 16-9.
- First MB, Spitzer RL, Gibbon M et al (1997) Structured Clinical Interview for DSM-IV Clinical Version (SCID-I/CV). Washington DC, American Psychiatric Press.
- Kirkpatrick B, Buchanan RW, Alphas LD et al (1993) The Schedule for the Deficit Syndrome 1993 version, Maryland Psychiatric Research Center, USA.
- Kirkpatrick B, Buchanan RW, Ross DE et al (2001) A separate disease within the syndrome of schizophrenia. *Arch Gen Psychiatry* 58: 165-71.
- Kirkpatrick B, Castle D, Murray RM et al (2000) Risk factors for the deficit syndrome of schizophrenia. *Schizophr Bull* 26: 233-42.
- Kopelowicz A, Liberman R, Mintz J et al (1997) Comparison of efficacy of social skills training for deficit and nondeficit negative symptoms in schizophrenia. *Am J Psychiatry* 154: 424-5.
- Liddle PF (1987) The symptoms of chronic schizophrenia: a re-examination of the positive and negative dichotomy. *Br J Psychiatry* 151: 145-51.
- Morosini PL, Magliano L, Brambilla L et al (2000) Development, reliability and acceptability of a new version of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS) to assess routine social functioning. *Acta Psychiatr Scand* 101: 323-9.
- Özkürkçügil A, Aydemir Ö, Yıldız M. (1999) DSM-IV Eksen I bozuklukları için yapılandırılmış klinik görüşmenin Türkçe'ye uyarlanması ve güvenilirlik çalışması. *İlaç ve Tedavi Dergisi* 12: 233-6.

- Schwartz RC, Peterson S (1999) The relationship between insight and suicidality among patients with schizophrenia. *J Nerv Ment Dis* 187: 376- 8.
- Smith TE, Hull JW, Santos L (1998) The relationship between symptoms and insight in schizophrenia: a longitudinal perspective. *Schizophr Res* 33: 63-7.
- Strauss GP, Harrow M, Grossman LS et al (2010) Periods of recovery in deficit syndrome schizophrenia: a 20-year multi-follow-up longitudinal study. *Schizophr Bull* 36: 788-99.
- Trotman HD, Kirkpatrick B, Compton MT (2011) Impaired insight in patients with newly diagnosed nonaffective psychotic disorders with and without deficit features. *Schizophr Res* 126: 252-6.

