

THE INFLUENCE OF NEGATIVE SYMPTOMS ON THE SOCIAL FUNCTION OF PEOPLE WITH SCHIZOPHRENIA IN THE COMMUNITY

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Abstract: *The most People with Schizophrenia (PwS) experience a decline in social function caused by various factors. Clinical symptoms of PwS affect the social function of PwS, especially negative symptoms. The purpose of this study is to analyze the effect of negative symptoms on the social function of people with schizophrenia in the community. This is a cross-sectional study. Subjects of the study were people with schizophrenia aged 18-56 years who will follow Community-Based Rehabilitation activities in 10 areas of puskesmas in Yogyakarta Special Region. The study was conducted in February 2017. The social function and negative symptoms of PwS were measured using a validated measuring instrument. Hypothesis test using Anova test. The subjects of the study were obtained by purposive sampling technique of 100 PwS that fulfilled inclusion and exclusion criteria. Subjects with a PSP score of 0-30 (poor: someone who intensively needs care and social support) of 8 people (8%) had negative PANSS score of 28.50 ± 6.78 . Subjects with a score of 31-70 (moderate: someone who occasionally needs care and social support) of 57 people (57%) had negative PANSS of 20.65 ± 8.18 . Subjects with a score of 71-100 (mild: someone with mild disturbance, but able to perform individual functions) of 35 subjects (35%) had negative PANSS score of 12.49 ± 5.98 . PwS which has a negative value of PANSS is greater, has a worse social function. The results showed that the negative symptoms had an effect on the social function of people with schizophrenia which was statistically significant ($p < 0.05$). Negative symptoms affect the social function of PwS. PwS that has a high negative symptom score, has a worse social function.*

Keywords: *social function, schizophrenia, negative symptoms*

INTRODUCTION

The decreased function experienced by People with schizophrenia (PwS) is worse when compared with other psychiatric disorder patients.¹ People with schizophrenia have decreased almost all aspects of life that cause disability throughout their lives.^{2,3,4} The decline in social function is a common condition encountered in PwS.^{5,6} While social function is an important predictor of the quality of life assessment of people with schizophrenia, which is now a major goal in the management of PwS.^{7,8} Schizophrenia management, more recently focused on improving function and quality of life than simply curing symptoms alone.^{8,9}

Studies in six European countries concluded that more than 80% of people with schizophrenia had decreased sedentary social function.^{10,11} A decreased social function is often experienced by PwS earlier before other symptoms of schizophrenia occur.¹¹ Social function is the quality of interpersonal relationships and one's ability to fulfil roles and expectations defined by society. Social functionality is assessed from various domains of life, including role functions, social relationships, self-care, independent living skills, leisure use, leisure activities, and community integration.⁴ PwS with low social function is associated with a worse prognosis which, among others, is indicated by the inability to find employment and independent living.¹² While PwS and their families are often more concerned with functional impairment experienced by people with schizophrenia-related to work, education, independence, and socialization skills.¹³ PwS expectations in medicine in addition to symptom improvement, PwS also requires improvement in social functions such as daily activities, social contact and employment opportunities.¹⁴ Helping PwS achieve its life goals including improving

its social function is one of the principles of PwS management.²

Many factors affecting social functioning in PwS include premorbid function, cognitive function, community participation, family condition and treatment, adequate psychotherapy and negative symptoms (Essock et al., 2005⁸). Social dysfunction is associated with PwS psychopathology and is most associated with negative symptoms.^{15,16} Negative symptoms refer to the missing or decreased normal mental function.¹⁷ Negative symptoms can also be interpreted as missing or diminishing some of the functions that exist in healthy individuals.¹⁸ Negative symptoms include decreased social or personal attraction, anhedonia, emotional collecting or mismatch, and decreased symptomatic activity. People with schizophrenia often exhibit negative symptoms long before the positive symptoms appear¹⁹ and may persist despite PwS in a stable phase.²⁰ The negative symptoms experienced by ODS affect the function and quality of life of the PwS.^{5,8} Schizophrenia management is intended to support PwS in developing meaningful life function, although symptoms are still experienced by PwS.²⁰ This study aims to analyze the effect of negative symptoms on social function on PwS participants of community-based rehabilitation activities in Yogyakarta special region.

RESEARCH METHODS

This study is a cross-sectional study of people with schizophrenia in the community. The study is located in the Primary Health Center (PHC) area where Community-Based Rehabilitation (CBR) is implemented in People with Schizophrenia in Yogyakarta Special Region. The location of the study were two PHC per district/city as follows: Wates PHC and Temon 1 PHC (Kulon Progo District), Bambang Lipuro PHC and Srandakan PHC (Bantul District), Godean 1 PHC and

Tempel 1 PHC (Sleman District), Gedangsari 2 PHC and Playen 2 PHC (Gunung Kidul District), Gondomanan PHC and Kraton PHC (Yogyakarta City).

The study conducted between February and April 2017 and was approved by the Research Ethics Boards of Gadjah Mada University. Research subjects were taken from the affordable population with purposive sampling technique. Subjects were included in the study if they met the criteria: schizophrenia patients enforced based on DSM IV criteria, age 18-59 years, maintenance phase, routine management, caregiver, willing to participate in the study. Subjects are excluded if they have severe physical or severe diseases, have a diagnosis of other severe mental disorders. Subject is vulnerable group. Recruitment of subjects is performed by the primary health center doctor. Subjects are given information by primary health center doctors that the subject will be contacted by the researcher. If the subject and his family are willing then the subject will get an explanation of the research by the researcher. The researcher explains objectives, volunteerism, research procedures, obligations, benefits, risks, confidentiality, compensation, financing, contact person. Families were given adequate time to reflect on the information, had any questions answered and gave free and voluntary consent then provided written informed consent.

The independent variable is a negative symptom, the dependent variable is the social function of the people with schizophrenia. The investigation was conducted by using the following structural and clinical test procedure: standardized clinical interview; Personal and Social Performance Scale (PSP) and PANSS. A non-standardized questionnaire regarding sociodemographic and clinical characteristic data of people with schizophrenia.

The social function of people with schizophrenia assessed with Personal

Social Performance (PSP). PSP measures the score is based on the assessment of a patient's performance in four categories; socially useful activities, personal and social relationships, self-care, disturbing and aggressive behaviour. PSP is a 100-item scale, divided into 10 similar intervals. Regarding the total score on the Personal and Social Performance Scale (PSP) that assesses the personal and social functioning and quality of life, the subjects with the score 0-30 (poor: someone who intensively needs care and social support); the score of 31-70 (moderate: someone who occasionally needs care and social support); the score of 71-100 (mild: someone with mild disturbance, but able to perform individual functions).

For the assessment of negative symptoms of patients used the Positive and Negative Symptoms Scale (PANSS). PANSS is an instrument to assess the symptoms of people with schizophrenia consisting of positive symptoms, negative symptoms and general psychopathology. The negative symptom scale consists of 7 assessed symptoms (N1-N7). There are 7 possible rating points, representing increasing levels of psychopathology severity (1 = absent; 2 = minimal; 3 = mild; 4 = moderate; 5 = moderate-severe; 6 = severe; 7 = extreme). The PANSS is scored by summation of ratings across items, thus the potential ranges are 7-49 for the Negative Scales.

Univariate statistical analysis is used to see the percentage of demographic data and the characteristics of the disorder experienced by the subjects. Bivariate analysis to determine the effect of clinical symptoms with social function using ANOVA test. The data used in anova test is negative PANSS data with numeric scale. Anova test is used to determine the difference of negative PANSS score in three categories of social function. All analyzes were performed using a computer program

RESULTS AND DISCUSSION

A total of 100 people with schizophrenia fulfilling the inclusion and exclusion criteria were selected from 10 puskesmas areas in DIY. Subjects are people with schizophrenia who will participate in Community Based Rehabilitation activities in Special Region of Yogyakarta. The subject characteristic

data is the baseline data taken before the subject follows community-based rehabilitation activities. The subject characteristic data consisted of sociodemographic characteristic data and clinical characteristics of the disorder. The sociodemographic characteristic data are presented in Table 1.

Table 1. Sociodemographic Characteristics of Subject

Characteristics	N	Percentage
Gender		
Male	65	65%
Female	35	35%
Age		
< 30 years old	17	17%
31-40 years old	38	38%
41-50 years old	33	33%
> 50 years old	12	12%
Education		
Primary School	20	20%
Junior High School	33	33%
Senior High School	44	44%
College	3	3%
Employment		
Unemployment	71	71%
Employee	29	29%
Marriage		
Not married	58	58%
Married	34	34%
Widow/widowed	8	8%

Source: primary data (2017)

Table 1 shows that most of the subjects were male (65%). Most of the subjects were in the age group of 31-40 years old (38%). Most of the education of the subjects were in high school (44%) and only 3% of the subjects had completed

their undergraduate education. Most of the subjects did not work (71%). Unmarried is the most common status of the subjects (58%).

Clinical characteristics of the disorder experienced by the study subjects are shown in table 2.

Table 2. Clinical Characteristics of Subject

Clinical Characteristics	N	Persentase
Duration		
<5 years	15	15%
5 - 10 years	30	30%
> 10 years	55	55%
Onset		
< 20 years old	34	34%
20 - 30 years old	42	42%
31 - 40 years old	13	13%
>40 years old	11	11%
Family Medical History		
None	72	72%
Exist	28	28%
Type of antipsychotics		
Atypical	19	19%
Typical	31	31%
Atypical-Typical	50	50%
Inpatient History		
≤1	45	45%
≥2 kali	55	55%
Social Function (PSP)		
0-30	8	8%
31-70	57	57%
71-100	35	35%
PANSS (Negative Scale)		
Mean ± SD	18,42 ± 8,74012	

Source: primary data (2017)

PANSS: Positive and Negative Syndrome Scale; PSP: Personal and Social Performance

Table 2 shows that the majority of the subjects had been experienced the intrusion for more than 10 years (55%). Most subjects had schizophrenia in the age range of 20-30 years old (42%). Majority of the subjects didn't have any mental disorder history in their family (72%). Most subjects received a typical and atypical combination antipsychotic (50%). Most of the subjects had been hospitalized more than once (65%). Most of the study subjects (57%) had a PSP score of 31-70 (moderate social function) which means that the subject still occasionally needs care and social support.

The hypothesis test to know the difference between the negative PANSS score on its three social functional groups

of people with schizophrenia was analyzed using anova test. Based on the anova test, the value obtained is $p = 0.000$. Therefore, the value of $P < 0.05$ means the hypothesis is accepted. Negative PANSS scores which showcase the negative symptoms of the subject affects the social function of people with schizophrenia. Based on the descriptive data, it can be seen that the bigger the negative PANSS score is, the worse the social function of people with schizophrenia.

After the Anova test, it continues with the Posc Hoc test to determine the differences in negative PANSS values between the two categories of subjects' social functions. Posc Hoc test that was used is the LSD test. The test was used to

analyze the differences in negative PANSS scores between subjects who had a social function score of 0-30 and subjects with a social function score of 31-70 (analysis 1); subjects with a social function score of 31-70 and subjects with a social function

score of 71-100 (analysis 2); subjects who have a social function score of 31-70 and subjects that has a social function score of 71-100 (analysis 3). The results of the LSD test analysis are presented in tables 3, 4, and 5.

Tabel 3. The First LSD test

Social Function (PSP)	Mean	Deviation Standard	P
PSP score 0-30	34,0	8,5	0,036
PSP score 31-70	21,1	7,1	

p<0,05 based on LSD Test

PSP: Personal and Social Performance

The first LSD test was an analysis to see the differences in negative PANSS scores in people with schizophrenia who had a PSP score of 0-30 (poor social function) with a person with schizophrenia who had a PSP score of 31-70 (moderate social function). The first LSD test is listed in table 3, which shows the value of *p*

<0.05. This suggests that there is a significant difference between negative PANSS scores of people with schizophrenia who have poor social function and a PANSS score of people with schizophrenia who have a moderate social function.

Table 4. The Second LSD test

Social Function (PSP)	Mean	Deviation Standard	P
PSP score 0-30	34,0	8,5	0,004
PSP score 71-100	16,6	8,8	

p<0,05 based on LSD Test

PSP: Personal and Social Performance

The second LSD test was an analysis to see the differences in negative PANSS scores in people with schizophrenia who had a PSP score of 0-30 (poor social function) with people with schizophrenia who had a PSP score of 71-100 (mild social function). The second LSD test is

shown in Table 4, which shows the value of *p* <0.05. This suggests that there is a significant difference between a negative PANSS score of people with schizophrenia who have poor social function and a PANSS score of people with schizophrenia who have a mild social function.

Table 5. The third LSD test

Social Function (PSP)	Mean	Deviation Standard	P
PSP score 31-70	21,1	7,1	0,014
PSP score 71-100	16,6	8,8	

p<0,05 based on LSD Test

PSP: Personal and Social Performance

The third LSD test was an analysis to see the differences in negative PANSS scores in people with schizophrenia who had PSP score of 31-70 (moderate social function) with people with schizophrenia

who had a PSP score of 71-100 (mild social function). The third LSD test is shown in table 5, which shows the value of *p* <0.05. This suggests that there is a significant difference between a negative

PANSS score of people with schizophrenia who have moderate social function and a PANSS score of people with schizophrenia who have a mild social function.

RESULTS AND DISCUSSION

The social function in this study was assessed using the PSP instrument. The PSP score is divided into 3 groups: the score 0-30 (poor: someone who intensively needs care and social support); the score of 31-70 (moderate: someone who occasionally needs care and social support); the score of 71-100 (mild: someone with mild disturbance, but able to perform individual functions).²¹ Most of the study subjects (57%) had PSP score of 31-70 which means the subject still occasionally needs care and social support. The same condition is also shown in the previous research which says that the social relation domains are the most affected domains in people with schizophrenia if it's being compared to the normal population.²²

The negative symptoms in this study were assessed by PANSS score for negative symptoms which consist of 7 domains: blunted affect, emotional withdrawal, poor rapport, passive/apathetic social withdrawal, difficulty in abstract thinking, lack of spontaneity and flow of conversation, stereotypes thinking (Hunter, 2012). The study subjects had a negative PANSS score of 18.42 ± 8.74012 . This suggests that the study subjects still have strong negative symptoms.

The results of the test analysis of the effect of negative clinical symptoms as measured by PANSS showed that the negative symptoms had an effect on the social function of people with schizophrenia. The results of this study are consistent with previous studies which concluded that the negative symptoms had an effect on the social function of people with schizophrenia.^{4,11,23} Another study using PANSS instruments to assess the positive, negative, and generalized psychopathology symptoms of

schizophrenia concluded that the negative symptoms had the strongest correlation with the occurrence of social dysfunction in people with schizophrenia when compared with other symptoms of schizophrenia which were positive symptoms and general psychopathology.⁵

This study shows that negative clinical symptoms have a negative effect on social function. The highest negative mean PANSS score was found in the subjects with PSP score 0-30, whereas the lowest negative PANSS score was found in subjects with a PSP score of 71-100. This means, the higher the score of negative clinical symptoms, the worse the social function of people with schizophrenia. Similar results were also obtained in previous studies which concluded that lower the function in people with schizophrenia, the more severe negative clinical symptoms they had.^{20,24}

Negative symptoms refer to the loss or decrease in normal mental function.¹⁷ Negative symptoms include blunted affect, emotional withdrawal, poor rapport, passive/apathetic social withdrawal, difficulty in abstract thinking, lack of spontaneity and flow of conversation, stereotypes thinking.²⁰ Negative symptoms can also be interpreted as lost or decrease in some functions that exist in healthy people.¹⁸ The decreasing normal mental functions which indicated by the presence of these negative symptoms affect the ability of people with schizophrenia in performing the functions of everyday life. People with schizophrenia often show negative symptoms much earlier before the positive symptoms occurrence.¹⁹ Negative symptoms can also remain encountered by people with schizophrenia even though they already in a stable phase.²⁰ This suggests that the negative symptoms are related to the chronicle of the disorder, which made an impact on lowering the competence of people with schizophrenia in social interaction.^{25,26}

The negative symptoms experienced by people with schizophrenia are

associated with decreased cognitive function and adaptive function.²⁷ Cognitive function and adaptive function were needed by people with schizophrenia to do social interaction with the environment. Thus, these negative symptoms interfere with the ability of people with schizophrenia to perform normal functions including functions in social interaction, which make the social function of people with schizophrenia is poor. Improving the negative symptoms in the management of people with schizophrenia is an important factor for improving the function of people with schizophrenia in the community.²⁰

CONCLUSION

Negative symptoms affect the decreasing social function of people with schizophrenia. Improvement of the negative symptoms becomes an important factor to increase the function of people with schizophrenia in the community.

REFERENCES

1. Koivumaa-Honkanen H., Viinamaki H., Honkanen R. *et al.* (2006): Correlates of life satisfaction among psychiatric patients. *Acta Psychiatr Scand*; 89: 72–77
2. Lieberman, J.A., Stroup, T.S., Perkins, D.O., American Psychiatric Publishing (Eds.). 2006. The American Psychiatric Publishing Textbook of Schizophrenia, 1st ed. *American Psychiatric Pub, Washington, DC*
3. Moore, R.C., Viglione, D.J., Rosenfarb, I.S., Patterson, T.L., Mausbach, B.T. 2013. Rorschach Measures of Cognition Relate to Everyday and Social Functioning in Schizophrenia. *Psychol. Assess.*, volume: 25, 253–263.
4. Corrigan, Patrick W; Mueser, Kim T; Bond, Gary R; Drake, Robert E; Solomon, Phyllis. 2008. Chapter 3: Definision of Psychiatric Rehabilitation. *Principles and Practice of Psychiatric Rehabilitation, An Empirical Approach*. The Guilford Press, New York
5. Browne S., Roe M., Lane A. *et al.* (2006): Quality of life in schizophrenia: Relationship to sociodemographic factors, symptomology, and tardive dyskinesia. *Acta Psychiatr Scand*; 94: 118–124
6. Jeffrey A., Lieberman, Robert E., Drake, Lloyd I., Sederer., Aysenil Belger., Richard Keefe., Diana Perkins. and Scott Stroup (2008): Science and Recovery in Schizophrenia. *Psychiatr Serv*; 59: 487–496
7. Kim, C., Mueser, K.T. 2011. The Effects of Social Skills Training vs. Psychoeducation on Negative Attitudes of Mothers of Persons with Schizophrenia: A Pilot Study. *Psychiatry Investigation*, volume: 8, 107.
8. Essock S., Kontos N. 2005. Implementing Assertive Community Treatment Teams. *Psychiatr Serv*: 46: 679–683
9. Lak, D.C.C., Tsang, H.W.H., Kopelowicz, A., Liberman, R.P. 2010. Outcomes of the Chinese Basic Conversation Skill Module (CBCSM) for People with Schizophrenia Having Mild to Moderate Symptoms and Dysfunction in Hong Kong. *International Journal Psychiatry Clinical Practise*, volume: 14, 137–144
10. Wiersma D, Wanderling J, Dragomirecka E, Ganev K, Harrison G, an der Heiden W, et al. Social disability in schizophrenia: its development and prediction over 15 years in incidence cohorts in six European centres. *Psychol Med* 2000;30(5):1155–67
11. Jelastopulu, E., Giourou, E., Merekoulis, G., Mestousi, A., Moratis, E., Alexopoulos, E.C. 2014. Correlation Between the Personal and Social Performance scale (PSP) and the Positive and Negative Syndrome Scale (PANSS) in a Greek Sample of Patients with Schizophrenia. *BMC Psychiatry*, volume: 14, 197.
12. Apiquian R, Elena Ulloa R, Herrera-Estrella M, Moreno-Gomez A, Erosa S, Contreras V, Nicolini H: Validity of the Spanish version of the Personal and Social Performance scale in schizophrenia. *Schizophr Res* 2009,112:181–186
13. Bharathi, Goorah Deeno; Huang, Nan; Lu, Zheng. 2011. Psychosocial Interventions for Patients with Schizophrenia. *Shanghai Archives of Psychiatry*, volume: 23, No. 6
14. Ginsberg DL, Schooler NR, Buckley PF, Harvey PD, Weiden PJ: Optimizing treatment of schizophrenia. Enhancing affective/cognitive and depressive functioning. *CNS Spectr* 2005, 10:1–13. discussion 14–15

15. Brune M, Schaub D, Juckel G, Langdon R: Social skills and behavioral problems in schizophrenia: the role of mental state attribution, neurocognition and clinical symptomatology. *Psychiatry Res* 2011, 190:9–17.
16. Corcoran CM, Kimhy D, Parrilla-Escobar MA, Cressman VL, Stanford AD, Thompson J, David SB, Crumbley A, Schobel S, Moore H, Malaspina D: The relationship of social function to depressive and negative symptoms in individuals at clinical high risk for psychosis. *Psychol Med* 2011, 41:251–261
17. Hales, R. E., Yudofsky, S. C. and Gabbard, G. O. 2011. *Essentials of Psychiatry. 3rd penyunt. Arlington: American Psychiatric Publishing, Inc.*
18. Santosh, S., Roy, D. D. and Kundu, P. S. 2013. Psychopathology, Cognitive Function, and Social Functioning of Patients with Schizophrenia. *East Asian Arch Psychiatry*, volume: 2(23), pp. 65-70.
19. Sadock, B.J., Sadock, V.A., MD, D.P.R. 2014. Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry, Eleventh edition. ed. LWW, Philadelphia.
20. Hunter, R., Barry, S. 2012. Negative Symptoms and Psychosocial Functioning in Schizophrenia: Neglected but Important Targets for Treatment. *Eur. Psychiatry* 27, 432–436
21. Arsova Hadzi Angelkovska S. Pejaska-Gerazova V., Novotni A., Isjanovs ki V. 2010. Personal And Social Functioning In Patients With Schizophrenia. *Sec. Biol. Med. Sci.* volume: XXXI/2 (2010), 209–221
22. Akvardar, Yildiz; Akdede, Berne Binnur; Ozerdem, Aysegul; Eser, Erhan; Topkaya, Sule; Alptekin, Koksai. Assessment of quality of life with the WHOQOL-BREF in a group of Turkish psychiatric patients compared with diabetic and healthy subjects. 2006. *Psychiatry and Clinical Neurosciences* (2006), 60, 693–699
23. Lysaker, P.H., Davis, L.W. 2004. Social Function in Schizophrenia and Schizoaffective Disorder: Associations with Personality, Symptoms and Neurocognition. *Health Qual. Life Outcomes*, volume: 2, 15.
24. Bae, Sung-Man; Seung-Hwan Lee; Young-Min Park; Myung-Ho Hyun; Hiejin Yoon. 2010 Predictive Factors of Social Functioning in Patients with Schizophrenia: Exploration for the Best Combination of Variables Using Data Mining. *Psychiatry Investig.* volume: 7, 93–101.
25. Patrick DL, Burns T, Morosini P, Rothman M, Gagnon DD, Wild D, Adriaenssen I: Reliability, validity and ability to detect change of the clinician-rated Personal and Social Performance scale in patients with acute symptoms of schizophrenia. *Curr Med Res Opin* 2009, 25:325–338.
26. Juckel G, Schaub D, Fuchs N, Naumann U, Uhl I, Witthaus H, Hargarter L, Bierhoff HW, Brune M: Validation of the Personal and Social Performance (PSP) Scale in a German sample of acutely ill patients with schizophrenia. *Schizophr Res* 2008, 104:287–293.
27. Herbener, E.S., Harrow, M., 2004. Are Negative Symptoms Associated With Functioning Deficits in Both Schizophrenia and Nonschizophrenia Patients? A 10-Year Longitudinal Analysis. *Schizophrenia Bulletin*, Vol. 30, No.4

