

Original Article

Agreement in Assessments of Psychiatric Symptoms Between Support Workers and Patients With Schizophrenia: the Level of Concordance and Its Relationship With Patient Social Participation

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Abstract

This article examines agreement regarding assessments of psychiatric symptoms between mental health workers and patients with schizophrenia at the community level and looks at how this agreement is related to patients' social participation. We conducted a questionnaire survey among patients suffering from schizophrenia and members of their treatment teams. Patients completed questionnaires that consisted of 18 self-rated psychiatric symptoms from the Brief Psychiatric Rating Scale (BPRS), 10 social participation items, and other related questions. Members of the treatment team also assessed 18 symptom items from BPRS regarding their patients. Results showed a relatively high agreement regarding positive and emotional symptoms, and a low agreement regarding negative symptoms. In terms of the relationship between the level of agreement and social participation, the high-agreement group showed better social participation than the low-agreement group. Results indicate that communication between workers and patients needs to be improved, with a particular focus on negative symptoms, in order to promote their social participation.

Keywords : mental health, schizophrenia, self-assessment, Brief Psychiatric Rating Scale, social participation

Introduction

In Japan, community care for people with mental illness has developed differently from many Western countries. Since the 1990s, Japanese government has shifted the support for people with mental illness, including chronic schizophrenia, from institutionalized care to community-based care through the development

of community mental health services. In 2004, the Ministry of Health, Labour and Welfare (2004) published a policy document, "Vision for Reforming Mental Health Care and Welfare," that strengthened the movement toward community-based care. Inter-professional collaboration was identified as one important way of providing community care. In fact, many kinds of mental health practitioners engage in psychiatric

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rehabilitation services. Although care for patients in the acute phase of schizophrenia is relatively uniform, support for people in the chronic phase of this disorder must be individualized to suit patient's lifestyle. Mental health practitioners such as psychiatric social workers, occupational therapists, and psychologists need to be able to address the symptoms of patients with schizophrenia to help provide ongoing daily support.

The lack of insight among people with schizophrenia of their condition was considered a significant factor that might impede discharge support (Ikebuchi et al., 2008). Previous studies have reported that about 80% of people with schizophrenia lacked some degree of insight regarding their illness (Amador & Gorman, 1998; Medalia & Lim, 2004; Subotnik et al., 2005), including lack of awareness of symptoms (Amador et al., 1994). The lack of symptom awareness leads to poor compliance with medication and psychosocial treatments (Amador & Gorman, 1998). Although this factor is a problem of schizophrenia itself, addressing the subjective cognition of the illness is a good starting point for support.

To successfully live independently in the community, people with schizophrenia must recognize and monitor their own symptoms (Hamera et al., 1996). Mental health workers and people with schizophrenia need to share an understanding of symptoms with each other to build a trusting relationship. Such a relationship is important for patients to have an independent social life. Thus, people with schizophrenia and support staff must assess symptoms, and agreement between these assessments must be reached. Previous studies have examined the association between people with schizophrenia

and the assessments of trained researchers or medical staff (Hamera et al., 1996; Turner et al., 1983; Faustman et al., 1989; Liraud et al., 2004; Morlan & Tan, 1998) and reported which symptoms had strong or weak associations. Hamera et al. (1996) extracted 10 symptoms from the Brief Psychiatric Rating Scale (BPRS) and developed a self-reported questionnaire for people with mental illness. They then examined correlations between persons with mental illness and medical staff assessments. As for Japan, few studies have examined the relationship between the self-assessments and the assessments made by medical personnel of symptoms exhibited by patients with schizophrenia. Of note is the study by Ohata et al. (2014) which examined the relationship between self-rated health conditions and symptoms rated by attended psychiatrists.

These previous studies mainly examined the reliability of patient's self-assessments by comparing them with assessments made by medical staff, especially psychiatrists and trained psychiatric nurses. However, few studies have examined the association between assessments by patients and those by mental health workers. In community settings, support workers such as social workers and clinical psychologists usually spend more time with patients than attending psychiatrists. Thus, the views of these members of the treatment team in ambulant rehabilitation facilities would be useful for clinical assessment of patients. In the present study, we measured assessments by treatment team members such as social workers, clinical psychologists, and occupational therapists at rehabilitation facilities and by people with schizophrenia. Then we examined agreements between these assessments to determine which symptoms had the greatest

rate of agreement. We also examined the relationship between the level of agreement and patients' social participation.

Methods

Subjects and procedures

Subjects were people with psychiatric disabilities who met the following conditions: (1) primary disease was schizophrenia, (2) living in the community, and (3) receiving psychiatric treatment and rehabilitation services. A clinical diagnosis of schizophrenia was made by an attending psychiatrist on the basis of the International Classification of Diseases, 10th revision.

First, we asked administrators of daycare sections at three medical institutions and 11 community workshops to identify possible subjects for this research. We then screened potential candidates to exclude those who rarely participated in the treatment and rehabilitation program. A total of 349 patients, including persons diagnosed with any kind of mental disorder, received explanations of the research and requests to participate; 135 met the inclusion criteria and agreed to take part in the study. Data from 115 persons for whom information were available from both patients and treatment team members were used for analysis. A total of 32 treatment team members assessed patients' psychiatric symptoms. Among the treatment team members who completed the BPRS, most were psychiatric social workers, clinical psychologists, and occupational therapists.

From April 2004 to March 2005, researchers went to all facilities and distributed the self-administered questionnaires directly to subjects. Subjects completed the questionnaires

immediately with researchers' guidance when necessary. After that, treatment team members completed assessment sheets that rated the severity of psychiatric symptoms of each of their patients.

Instruments

Two types of questionnaires were used. The first was a self-administered questionnaire completed by patients. The second was a psychiatric symptoms assessment sheet completed by treatment team members.

The self-administered patient questionnaire was based on the concept of disability structure of the International Classification of Functioning, Disability, and Health (ICF) (World Health Organization, 2001). It was designed to provide an overall understanding of obstacles subjects faced in their daily lives. The questionnaire included items pertaining to demographic characteristics, living conditions, activities, social participation, use of health services, and life satisfaction. Patients were also asked to assess the severity of 18 psychiatric symptoms extracted from the BPRS. This questionnaire is a representative tool that trained psychiatrists can use to assess symptoms of schizophrenia (Overall & Gorham, 1962). The scale has been revised many times and is now used for both clinical assessment and epidemiologic research on schizophrenia (Lukoff et al., 1986).

Items from the BPRS were modified for self-assessment by patients and included somatic concerns, anxiety, conceptual disorganization, guilt feelings, grandiosity, depressive mood, hostility, suspiciousness, hallucinatory behavior, unusual thought content, blunted affect, disorientation, emotional withdrawal, tension, mannerisms and

posturing, motor retardation, uncooperativeness, and excitement. Patients rated each item on a 7-point scale from 0 (not present) to 6 (extremely severe).

Measures for social participation were derived from the ICF. They included 10 categories associated with social participation (health monitoring, travel by public or private transportation, relationships, information exchanges, participation in family life, sex life, work, financial management, community involvement, education or training). All items were rated on a 5-point scale related to the degree of difficulty in performing the activity where 0 = none and 4 = extremely difficult.

The assessment sheet completed by the workers included the same 18 items from the BPRS. These items were revised to be rated based on daily observations. Treatment team members assessed each of these items for each patient using the same 7-point scale.

Ethical considerations

Participation of patients and treatment team members was voluntary. Patients signed informed consent forms after receiving an explanation about the study. Treatment team members were informed of the research objectives and verbally agreed to participate, with no written consent. The protocol was approved by the ethics committee of Toho University.

Statistical Analysis

Demographic characteristics and living conditions were analyzed using descriptive statistics (mean scores and frequency distributions). Median scores and 25% and 75% values of the BPRS scores from treatment team

members and patient assessments were categorized according to four factors extracted by Mueser et al. (1997). Although previous studies used two-factor or three-factor models for factor structure of schizophrenia symptoms, Mueser et al. (1997) recommended a four-factor model based on research from a large sample of 474 persons with schizophrenia. The four factors were “thought disturbances,” which included suspiciousness, hallucinatory behavior, unusual thought content, and grandiosity; “anergia,” which included motor retardation, disorientation, uncooperativeness, emotional withdrawal, and blunted affect; “affect,” which included depressive mood, somatic concern, anxiety, hostility, and guilt feelings; and “disorganization”, which included excitement, conceptual disorganization, tension, and mannerisms and posturing. We examined significant differences between treatment team member and patient assessments of these factors using Wilcoxon’s signed rank sum test. In addition, we calculated Cohen’s quadratic weighted kappa to examine the degree of agreement between treatment team member and patient assessments. We considered p values less than 0.05 statistically significant.

We also compared the mean total scores for social participation between the high-agreement group and low-agreement group for “thought disturbance”, “anergia”, “affect”, “disorganization,” and the total score using t-test. We calculated the modulus of difference between patients’ and treatment team members’ rating for the 18 items. Then we summed a subscale score and total score for each subject. We divided subjects into two groups on the basis of the median subscale score and total score. Subjects whose score was lower than the median value comprised the high-

agreement group; those whose score was higher than the median value comprised the low-agreement group. Then we compared mean scores of social participation as significant confounders of difficulties after adjusting for age, sex, and severity using the General Linear Model program.

SPSS ver. 20J (IBM Japan, Tokyo, Japan) and Analyse-it ver 2.22 (Analyse-it Software, Ltd., Leeds, UK) were used to conduct statistical analyses.

Results

Demographic characteristics

Demographic characteristics of patients are shown in Table 1. There were 77 males and 38 females with a *mean* \pm *SD* age of 39.5 ± 12.2 years. The mean age at illness onset was 22.6 ± 7.0 years and the mean time after illness onset was 15.9 ± 10.3 years. Most patients (70.4%) were not working and a majority (73.0%) possessed a mental disability certificate while more than two-thirds (67.8%) were recipients of a mental disability pension.

BPRS scores

For the patient assessments, items associated with “affect” and “disorganization” received high scores across the board (Table 2). For the treatment team member assessments, items associated with “affect” received the highest scores. In comparisons between the treatment team member and patient assessments, grandiosity, guilt feelings, and tension were significantly higher in the patient assessments than the treatment team member assessments (i.e., patients assessed their symptoms as being worse than the

Table 1. Demographic characteristics of patients with schizophrenia

Variable	<i>n</i>	%
Sex		
Male	77	(67.0)
Female	38	(33.0)
Age, y		
20s	26	(22.6)
30s	35	(30.4)
40s	26	(22.6)
>50	27	(23.5)
NR	1	(0.8)
Age at diagnosis, y		
10s	47	(40.9)
20s	41	(35.7)
>30	27	(22.6)
NR	2	(1.7)
Years after diagnosis		
<10	32	(27.8)
10s	46	(40.0)
20s	23	(20.0)
30s	12	(10.4)
NR	2	(1.7)
Work		
Working	23	(20.0)
Household work	10	(8.7)
Not working	81	(70.4)
NR	1	(0.9)
Mental disability certificate		
Certificated	84	(73.0)
None	25	(21.7)
NR	6	(5.2)
Mental disability pension		
Received	78	(67.8)
Not received	32	(27.8)
NR	5	(4.3)

NR, not reported

treatment team members assessed them to be) ($z = -2.03, p < 0.05; z = 2.88, p < 0.01; z = -2.88, p < 0.05$). In contrast, uncooperativeness scores were significantly higher when assessed by treatment team members compared with patients ($z = -2.40, p < 0.05$).

Agreement between treatment team member and patient assessments

Table 3 shows Cohen’s weighted kappa between treatment team member and patient assessments of psychiatric symptoms. All items included in the “thought disturbance” factor and “affect” factor

Table 2. Difference between patient and treatment team member assessments

Items	<i>n</i>	Patient Assessment <i>Median</i> (25%,75%)	Team Member Assessment <i>Median</i> (25%,75%)	<i>p</i> value
Thought disturbances				
Suspiciousness	114	2.0 (0.0, 3.0)	2.0 (0.0, 3.0)	
Hallucinatory behavior	114	0.0 (0.0, 2.0)	1.0 (0.0, 2.0)	
Unusual thought content	106	1.0 (0.0, 3.0)	1.0 (0.0, 2.8)	
Grandiosity	115	1.0 (0.0, 3.1)	1.0 (0.0, 2.0)	*
Anergia				
Motor retardation	107	1.5 (0.0, 3.0)	2.0 (1.0, 3.0)	
Disorientation	107	0.0 (0.0, 2.0)	0.0 (0.0, 2.0)	
Uncooperativeness	107	0.0 (0.0, 1.0)	1.0 (0.0, 2.0)	**
Emotional withdrawal	115	1.0 (0.0, 3.0)	2.0 (1.0, 3.0)	
Blunted affect	105	1.0 (0.0, 3.0)	2.0 (1.0, 3.0)	
Affect				
Depressive mood	115	2.0 (1.0, 4.0)	2.0 (1.0, 4.0)	
Somatic concern	115	2.0 (1.0, 4.0)	2.0 (1.0, 3.0)	
Anxiety	115	3.0 (1.0, 4.0)	3.0 (1.0, 4.0)	
Hostility	115	2.0 (0.0, 3.0)	2.0 (1.0, 3.0)	
Guilt feelings	114	2.0 (0.0, 4.0)	2.0 (1.0, 3.0)	*
Disorganization				
Excitement	107	2.0 (0.0, 3.3)	1.0 (1.0, 3.0)	
Conceptual disorganization	114	2.0 (0.0, 4.0)	2.0 (1.0, 4.0)	
Tension	115	2.0 (1.0, 4.0)	2.0 (1.0, 3.0)	*
Mannerisms and posturing	115	1.0 (0.0, 3.0)	1.0 (1.0, 3.0)	

Wilcoxon's signed rank sum test * $p < 0.05$, ** $p < 0.01$

Table 3. Agreement between treatment team member and patient assessments

Items	<i>n</i>	<i>Weighted-kappa</i>
Thought disturbances		
Suspiciousness	114	0.36 ***
Hallucinatory behavior	114	0.42 ***
Unusual thought content	106	0.28 **
Grandiosity	115	0.24 **
Anergia		
Motor retardation	107	0.22 *
Disorientation	107	0.24 **
Uncooperativeness	107	0.27 **
Emotional withdrawal	115	0.04
Blunted affect	105	0.15
Affect		
Depressive mood	115	0.41 ***
Somatic concern	115	0.38 ***
Anxiety	115	0.33 ***
Hostility	115	0.27 **
Guilt feelings	114	0.27 **
Disorganization		
Excitement	107	0.37 ***
Conceptual disorganization	114	0.18
Tension	115	0.17 *
Mannerisms and posturing	115	-0.09

Cohen's quadratic weighted kappa * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

were concordant significantly between the treatment team member and patient assessments. Within the “thought disturbance” factor, we found relatively strong agreements regarding suspiciousness and hallucinatory behavior. In addition, within the “affect” factor, there were relatively strong agreements for depressive mood, somatic concerns, and anxiety. On the other hand, in the “anergia” and “disorganization” factors, there was a high rate of disagreement between patients and treatment team members. Among these factors, only excitement had a relatively strong agreement.

Level of agreement and social participation

We conducted exploratory factor analysis on social participation, in which 10 items were summarized to one factor. We used the summed

score of the 10 items as the index of social participation. A higher social participation score was associated with worse social participation. We divided respondents into two groups based on median values of the four factors assessing psychiatric symptoms and total scores: the high-agreement group and the low-agreement group. The “anergia”, “disorganization,” and total scores indicated better social participation in the high-agreement group than the low-agreement group ($t(90)=-3.01, p<0.01$; $t(90)=-2.32, p<0.05$; $t(88)=-3.19, p<0.05$). After adjustment, “disorganization” and total score showed better social participation in the high-agreement group than in the low-agreement group ($F(1,88)=4.32, p<0.05$; $F(1,84)=5.63, p<0.05$)(Table 4).

Table 4. Difference in social participation total score between the high-agreement and low-agreement groups

	High-agreement Group			Low-agreement Group			<i>p</i> value
	<i>n</i>	<i>Mean</i>	<i>SD</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>	
Difference in social participation total score ¹⁾							
Thought disturbances	49	10.8	8.3	43	14.3	8.9	
Anergia	43	9.8	8.1	49	15.0	8.4	**
Affect	51	10.4	8.1	48	13.6	9.1	
Disorganization	48	10.5	7.9	44	14.6	9.1	*
Total score	48	10.1	8.1	42	15.6	8.5	**
Adjusted by sex, age, and severity of symptoms ²⁾							
Thought disturbances	49	11.5	8.6	43	13.5	8.6	
Anergia	43	10.7	9.1	49	14.1	9.2	
Affect	51	10.9	8.4	48	13.0	8.4	
Disorganization	48	10.7	8.5	44	14.6	8.5	*
Total score	48	10.7	8.3	42	15.0	8.3	*

1) Paired *t*-test * $p<0.05$, ** $p<0.01$

2) Adjusted by age, sex, and severity using the GLM program * $p<0.05$

NOTE: A higher score means worse social participation.

Discussion

We examined agreement regarding several psychiatric symptoms between people with schizophrenia and the treatment team members who support them. Findings suggest that patients and treatment team members report the same severity of symptoms regarding “thought disturbances” and “affect” symptoms. “Thought disturbances” includes many items associated with positive symptoms and “affect” includes nonspecific emotional symptoms. Patients tended to be aware of these symptoms. In contrast, “anergia” included many negative symptoms, and treatment team members and patients tended to report different levels of symptoms. In terms of the relationship between the level of agreement and social participation, the high-agreement group showed better social participation than the low-agreement group in terms of “anergia,” “disorganization,” and total score.

Hamera et al. (1996) reported that the association between people with schizophrenia and medical staff assessments was strong for positive symptoms and nonspecific symptoms, and weak for negative symptoms. They theorized that negative symptoms were more behavioral than other symptoms; therefore, medical staff observations and patients’ awareness tended to be different. In the present study, BPRS items originally rated based on the verbal report of patients were revised to be rated based on workers’ observations. Therefore, treatment team members’ assessments were based on daily observations and communications. Patients can be aware of positive symptoms and nonspecific emotional symptoms and express them. However, it is difficult for them to articulate negative

symptoms. Morlan & Tan (1998) examined the associations between the scores on the Brief Symptom Inventory, a self-assessment questionnaire they created, and the results of BPRS. They reported that the association between outpatients with chronic mental illness and clinicians was significant on the total score, depression, anxiety, and hostility symptoms. In contrast, Liraud et al. (2004) reported that the correlation was strong for positive symptoms, nonspecific symptoms, and negative symptoms among inpatients with schizophrenia in the acute phase and psychiatrists. These results suggested that there was a difference in the awareness of psychiatric symptoms between the chronic phase and the acute phase of schizophrenia.

The present study corroborated a number of results of previous examinations. Among patients with schizophrenia in the chronic phase, we found a large gap between treatment team member and patient assessments regarding negative symptoms. Negative symptoms usually cause functional impairments and are linked to serious difficulties in daily activities (Ho et al., 1998; Milev et al., 2005; Rosenheck et al., 2006). On the other hand, one of the main characteristics of this study was that the non-psychiatrist treatment team members of rehabilitation facilities assessed the patients’ psychiatric symptoms. These workers provide support to patients in their daily lives for prolonged periods and thus are more familiar with the symptoms that patients experience. Results of this study indicate that these workers and people with schizophrenia need to communicate better with each other regarding the presence of psychiatric symptoms.

In addition, we compared the level of social participation between the high-agreement group

and the low-agreement group. Previous studies indicated that self-awareness was important in order for patients to maintain social activity, although this association has rarely been examined empirically. We showed that high agreement of “anergia” and “disorganization” and total score between patients and support workers was related to patients’ social participation. These results did not indicate a causal relationship between the level of agreement and social participation. However, they showed that to consider patients’ social participation, patients and workers need to communicate with each other and share their perceptions of symptoms. In particular, agreement about “anergia” and “disorganization” leads to better social participation, yet agreement between patients and workers in these areas was relatively low. These regions are considered to be problems that require intensive support by mental health workers.

Limitations

One limitation of this study is that it cannot necessarily be generalized to larger populations because we chose specific institutions to conduct this study. In addition, there might be some selection bias in this study. For example, to respond to our questionnaire, patients had to demonstrate steady concentration and patience. Consequently, our respondents may have had relatively mild symptoms and difficulties in social participation. In addition, we included a relatively small number of subjects in this study. This small number of subjects was mainly due to the nature of the illness, as it is difficult for some people with schizophrenia to respond to a questionnaire independently. As a result, we could not use a mailed questionnaire survey on a large sample of

patients. Generalization of these results should be carefully considered. BPRS is a standardized assessment tool that is used for clinical practice and epidemiological research. However, we modified this tool for this research. Reliability and validity of our revised questionnaire have not been confirmed and are an issue for future research. Further limitation is that we collected this data from 2004 to 2005. However, the trend of community care for people with schizophrenia in Japan has continued from the mid-1990s until now. So we think our findings are still valid today.

Significance of this study and implication for practice

In Japan, support for patients with schizophrenia has shifted from hospitalized care to community care. As such, the role of mental health workers in supporting patients who live in the community has gained importance. It is necessary for patients in the rehabilitation stage to understand their psychiatric symptoms and share this understanding with support workers. In previous studies, the reliability of assessments by social workers, clinical psychologists, and occupational therapists tended to be doubted, so an assessment by trained psychiatrists was often emphasized as an “objective assessment.” However, assessments by non-psychiatrists are also important from the viewpoint of providing support for patients’ social participation. In this study, non-psychiatrist treatment team members, who supported patients in their daily lives, assessed symptoms. With regard to social participation, it is noteworthy that behavioral assessments took place in the vicinity of patients’ residence. Studies have reported that self-reports of patients’ experiences of neuroleptic treatment

were associated with improved drug adherence (Hogan et al., 1983; Hogan & Awad, 1992). It is necessary to examine patients' self-assessments of psychiatric symptoms to develop more effective ways to provide psychosocial support for them and improve their quality of life (QOL). Thus, treatment team members must fully understand both their own assessments and self-assessments of patients to best support them.

Adult daycares and community workshops for people with mental illnesses have the dual function of both rehabilitation and support for daily activities for people with mental illnesses and disabilities. Patients receiving these services should share their symptoms and work to control them with the help of treatment team members (Iancu et al., 2005; Kennedy et al., 2000). In such places, patients' social problems become apparent. Therefore, the role of mental health workers who connect symptoms to difficulties in social life and support them with the goal of improving patient QOL is essential in the multidisciplinary team. It is important to note that we did not assume that the treatment team member assessment was the ultimate authority in this study. In addition, we did not aim to examine the reliability of self-assessments. Instead, our goal was to identify which symptoms assessed by both patients and workers were more or less likely to show agreement. Symptoms with high levels of agreement indicate that they shared their understanding with each other. In contrast, symptoms with low levels of agreement indicate a need for increased communication. The agreement of "anergia" and "disorganization" was related to better social participation of patients.

In terms of daily psychological support relationships, it is common to use psychological

tests not only to gain understanding of personality or mental conditions but also to communicate about the difficulties associated with a disease and strengthen support relationships. Psychiatric symptoms affect patients' social life, so not only psychiatrists but also other mental health workers should deal with symptoms of people with schizophrenia. Using the BPRS may help increase communication between mental health workers and patients.

Conclusion

This study suggests that patients' and treatment team members' assessments showed disagreement regarding negative symptoms and agreement regarding positive and emotional symptoms. Communication between workers and patients needs to be improved, with a particular focus on negative symptoms. To promote inter-professional collaboration of community care for people with schizophrenia, non-psychiatrist mental health workers should also deal with these symptoms. BPRS is a good potential tool to promote communication between patients and mental health workers.

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