Effects of a psychoeducation program for people with schizophrenia aimed at increasing subjective well-being and the factors influencing those effects: a preliminary study

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Abstract

Objective: There have been no intervention studies of psychoeducation programs for schizophrenia that focus on improving subjective well-being or studies to determine the factors influencing such effects. This study aimed to examine the effects of a psychoeducation program combining traditional psychoeducation with a focus on providing knowledge and information and a new intervention to raise patients' subjective well-being and to clarity the factors affecting the program's efficacy.

Methods: Subjects were 117 patients who participated in a psychoeducation program for schizophrenia between 2012 and 2018. In addition to comparing subjective well-being (Subjective Well-being under Neuroleptic Drug Treatment Short Form, Japanese version, SWNS-J) and attitudes towards drugs (Drug Attitude Inventory-10, DAI-10) before and after the program, basic information such as psychiatric symptoms was surveyed. The factors influencing the effects of the program were assessed with multiple regression analysis.

Results: Scores for SWNS-J subscales and total SWNS-J score increased significantly after the program. Higher total scores on subjective well-being after the program were significantly associated with having less severe negative symptoms and higher total subjective well-being before the program, and with more positive attitudes toward drugs after the program.

Conclusions: These results suggest that intervention with a focus on improving subjective well-being can be an effective part of psychoeducation programs for patients with schizophrenia. The results also suggest that the level of improvement in subjective well-being gained from the program may be higher in patients with milder negative symptoms and patients with a better understanding of drug treatment.

Keywords: drug attitude, psychoeducation, schizophrenia, subjective well-being

Introduction

Psychoeducation for patients with schizophrenia is a type of program to provide knowledge and information about the disorder, drug treatment, stress coping techniques, and other information to increase patients' understanding of the disorder and encourage self-directed treatment. Many psychoeducation programs comprise topics such as the disorder, its symptoms, drug treatment, and coping techniques, and are considered important for preventing recurrence by boosting patient adherence [1, 2]. According to a Cochrane Database systematic review [3, 4] that verified the effects of psychoeducation for people with severe psychiatric disorders such as schizophrenia, psychoeducation improves psychiatric symptoms such as anxiety and depression, as well as social functioning, and is useful for preventing recurrence and for boosting drug compliance.

Meanwhile, outcomes of treatment and rehabilitation of schizophrenia are no longer limited to symptoms and objective adaptive state; subjective outcomes such as recovery and subjective well-being are gaining attention as important outcomes as well [5-7]. Patients' subjective perceptions of their physical, psychological, and social functioning are expressed as the concept of well-being. Although the usefulness of psychoeducation for schizophrenia on psychiatric symptoms [8-11] and social functioning [12, 13] has been discussed, we have seen no intervention studies focusing on improving subjective well-being or studies to determine the factors influencing such a program's effects.

We therefore carried out a psychoeducation program for schizophrenia comprising traditional psychoeducation with a focus on providing knowledge and information as well as a new intervention to raise the patient's subjective well-being. Participants completed homework on how to use what they learned in the program in their daily lives and received feedback on each piece of homework. Patients' hopes and dreams were investigated with questionnaires prior to this intervention and the provision of information and acquisition of coping techniques to achieve recovery were promoted.

The aim of the present study was to carry out a psychoeducation program to raise the subjective well-being of patients with schizophrenia and to conduct a preliminary investigation of the effects of the program and the factors influencing those effects.

Methods

Ethical considerations

Participants provided informed consent after receiving an oral and written explanation about participating in the program and details about the study. The study protocol was approved by the Seiwakai Ethics Committee.

Subjects and recruitment

Subjects were individuals who participated in a psychoeducation for schizophrenia program carried out as an intervention from 2012 to 2018. Eligibility criteria for participation were: (1) schizophrenia diagnosis based on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition or the International Statistical Classification of Diseases and Related Health Problems, 10th revision; (2) patient deemed fit for participation by their primary physician; and (3) patient can understand the content of the sessions and questionnaire. Candidates were recruited at hospital wards, medical departments, pharmaceutical departments, medical care consultation offices, and occupational therapy offices and subjects were chosen after an explanation of the study was provided and their consent to participate was obtained.

Overview of the psychoeducation for schizophrenia program

Psychoeducation program

Each course had around six participants and sessions were held once a week, with four sessions in total. Session 1 was about schizophrenia, session 2 was about drugs, session 3 was about coping with stress, and session 4 was about social resources. Each session comprised a lecture using tools such as DVDs, PowerPoint presentations, and handouts as well as group discussions. The lecturers were a doctor, pharmacist, occupational therapist, and a psychiatric social worker and inpatient participants were accompanied by a nurse from their hospital ward. Details of each session are shown in Table 1.

Intervention with a focus on subjective well-being

At the end of each session, participants were given homework to review what they learned in the session in their day-to-day life settings (e.g. consider the course and symptoms of their own disorder and talk about them with their primary physician or report techniques they tried using a stress coping worksheet). A report

of the results of the homework was given at the next session to check how they spent their week while considering the session concepts. The staff gave participants feedback on positive points and advice when needed on areas of improvement. Additionally, patients' hopes and dreams were investigated with questionnaires prior to the intervention and provision of information and acquisition of coping techniques were promoted with a focus on subjective well-being.

Evaluation

Pre- and post-program evaluation

The following evaluation/survey was performed before and after participation in the psychoeducation for schizophrenia program.

Subjective well-being: Subjective Well-being Under Neuroleptic Drug Treatment Scale Short form, Japanese version (SWNS-J)

The SWNS-J [14] is a short form of the SWN developed by Naber [15] and is a self-rated scale evaluating subjective well-being of patients receiving antipsychotic drug treatment. It comprises five subscales: "mental functioning," "self-control," "emotional regulation," "physical functioning," and "social integration." Higher scores mean good subjective well-being. The reliability and validity of the Japanese version were confirmed by Watanabe et al [16].

Attitude towards drugs: Drug Attitude Inventory-10 (DAI-10)

The DAI-10 is an assessment scale evaluating patients' attitudes toward the drugs used in their treatment and comprises 10 questions [17]. Total score ranges from -10 to +10, with negative scores indicating negative subjective experiences with drugs and positive scores indicating positive experiences. The reliability and validity of the Japanese version were confirmed by Miyata et al [18].

Dose of antipsychotic drugs: Chlorpromazine equivalence (CPZE)

Dose of antipsychotic drugs was calculated with chlorpromazine as the standard.

Basic information

As basic information about the participants, we collected information about their sex, age, psychiatric

symptoms, number of times hospitalized, and duration of hospitalization. Psychiatric symptoms were assessed with the Japanese version of the Positive and Negative Syndrome Scale (PANSS). The PANSS was created by Kay et al [19] and translated into Japanese by Yamada et al [20]. This scale was developed and standardized to enable typical, multi-axial assessment of the clinical picture of schizophrenia. It comprises 30 questions: seven on positive symptoms, seven on negative symptoms, and 16 on general psychiatric pathology. Lower scores indicate milder symptoms. Its reliability and validity have been verified [20].

Analysis methods

1) Changes in SWNS-J and DAI-10 scores were examined with paired t-tests on scores before and after the program.

2) Associations among total SWNS-J score after psychoeducation, DAI-10 score, PANSS score, CPZE dose, age, number of times hospitalized, and duration of hospitalization were tested with Pearson's correlation analysis (univariate analysis).

3) To examine the factors affecting total SWNS-J score after psychoeducation, multiple regression analysis (multivariate analysis) was performed with total SWNS-J score after psychoeducation as the dependent variable and the factors shown to be significant in univariate analysis as the independent variables.

IBM SPSS Statistics Version 22 for Microsoft Windows was used for all statistical analyses, with level of significance of $p<0.05$.

Results

Basic information about subjects

Subjects were 71 men and 46 women, for a total of 117 individuals. The mean age was 54.0 (standard deviation [SD] 13.7) years, mean number of times hospitalized was 6.3 (SD 4.9) times, mean duration of hospitalization was 68.6 (SD 113.9) months, and mean length of time from the first hospitalization was 254.0 (SD 176.1) months. Mean PANSS score was 18.8 (SD 7.3) points on the positive scale, 23.2 (SD 7.5) points on the negative scale, and 44.2 (SD 13.4) points on the general symptoms scale.

Differences in SWNS-J score, DAI-10 score, and CPZE dose before and after the program

The results of comparisons of SWNS-J score, DAI-10 score, and CPZE dose between before and after

the intervention are shown in Table 2. Significant differences were observed in scores for all SWNS-J subscales, total SWNS-J score, and DAI-10 score.

Factors associated with subjective well-being (SWNS-J): Univariate analysis

Pearson's correlation analysis on associations among total SWNS-J score after the psychoeducation program, DAI-10 score, PANSS score, CPZE dose, age, number of times hospitalized, and duration of hospitalization revealed significant correlations with total SWNS-J score before the program ($r = 0.552$, $p<0.001$), PANSS negative scale score ($r = -0.222$, $p = 0.016$), and DAI-10 score after the program ($r = 0.195$, $p = 0.035$).

Factors associated with subjective well-being (SWNS-J): Multiple regression analysis

Multiple regression analysis performed with total SWNS-J score after the program as the dependent variable and total SWNS-J score before the program, PANSS negative scale score, and DAI-10 score after the program as the independent variables revealed all three factors to be associated with total SWNS-J score after the program (Table 3). Specifically, higher total SWNS-J score before the program and higher DAI-10 score (i.e., more positive drug attitudes) predicted higher total SWNS-J score after the program, whereas more severe negative symptoms predicted lower total SWNS-J score after the program.

Discussion

In the present study, we added a program with a focus on subjective well-being to traditional psychiatric psychoeducation and conducted a preliminary study to test the effects of the program. We found that scores in all SWNS-J items increased significantly after psychoeducation. This suggests that the psychoeducation we provided may improve subjective well-being.

In all subscales of the SWNS-J, scores were significantly higher at the end of the psychoeducation program compared to before the start of the program. The difference was largest for "self-control" (+1.97), followed by "mental functioning" and "social integration" (both +1.94). Self-control is the act of controlling one's own emotions and behavior and is particularly important for developing well-being. This result may have been achieved by prompting participants to try using what they learned in the sessions in their day-to-day life and promoting a sense of self-efficacy through review. Having participants play an active

role in the activities so that the psychiatric psychoeducation program does not become overly passive shows potential for strengthening subjective well-being and recovery.

One factor determined to be associated with subjective well-being after psychoeducation was severity of negative symptoms before the psychoeducation. Patients with stronger negative symptoms had poorer subjective well-being after psychoeducation. Negative symptoms include the loss of joy and interest and symptoms of autism, and patients with severe negative symptoms may have difficulty attaining a mental and physical sense of happiness. In fact, analysis of the 48 patients with PANSS negative symptom subscale scores of higher than 23.2 (the mean) did not show any statistically significant difference between mean total SWNS-J score (expressing subjective well-being) before (72.3, SD: 18.4) and after (75.5, SD: 18.6) the program. Although a conclusion cannot be made based on this study alone, the above result points to the potential usefulness of further studies examining whether psychoeducation with a focus on subjective well-being can help improve negative symptoms and whether different types of programs can improve subjective well-being even in patients with strong negative symptoms.

As changes in PANSS after the program were not recorded in all participants in this study, we cannot entirely rule out the possibility that improvements in subjective well-being were gained from improvements in psychiatric symptoms from treatment. That said, as the chlorpromazine equivalent dose of the treatment drug used did not change significantly after psychoeducation (Table 2), and most participants had a history of recurrent long-term hospitalization, it is unlikely that subjective well-being scores increased simply due to improvement of psychiatric symptoms.

DAI-10 scores also improved after psychiatric psychoeducation, suggesting that DAI-10 scores after psychoeducation influence subjective well-being. This suggests the possibility that a better understanding of drug treatment may lead to improvement in subjective well-being. However, a previous study [21] did not show a clear link between subjective well-being and DAI-10 scores, and further studies are needed.

A limitation of the study was that it combined traditional psychoeducation with a new intervention to raise the patient's subjective well-being, but lacked a control group (e.g., traditional psychoeducation only or no treatment), so it is difficult to say whether improvement in subjective well-being could be attributed to the new intervention or some other factor, such as non-specific effects of receiving any kind of intervention. Additional studies are needed to test the above questions and to test the effects of a similar type of psychoeducation on outpatients who have more freedoms that give them more opportunities to pursue fulfilling goals. This series of studies may help expand the treatment spectrum and increase the effectiveness

of psychiatric psychoeducation.

Ethical approval

All procedures performed in the present study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Conflicts of interest

The authors declare that they have no conflict of interest.

Informed consent

Informed consent was obtained from all individual participants included in the study.

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Table 1. Topics of the psychoeducation program sessions

Session	Topics
1. Schizophrenia	Stress-vulnerability model, positive symptoms, negative symptoms, cognitive impairment, course of schizophrenia, prevention of recurrence
2. Drugs	Types and actions of drugs, checking each person's drug booklet, side effects
3. Stress coping	What is stress? Signs of stress, creating stress coping worksheets
4. Social resources	Participants were surveyed in advance about which topics among residence, work, home help services, facility commuting services, pension, disability certificate, and other topics they were most interested in to determine the main topics of discussion.

Table 2. Comparison of SWNS-J score, DAI-10 score, and CPZE dose before and after the intervention

	Before the program Mean (SD)	After the program Mean (SD)	p value*
SWNS-J			
Mental Functioning	13.5 (4.2)	15.4 (4.5)	<0.001
Self-Control	14.5 (4.2)	16.5 (4.1)	<0.001
Emotional Regulation	14.2 (3.7)	15.2 (3.9)	0.013
Physical Functioning	14.5 (3.9)	15.5 (4.0)	0.002
Social Integration	13.8 (4.1)	15.8 (4.8)	<0.001
Total Score	71.4 (16.7)	78.0 (17.7)	<0.001
DAI-10	2.1 (4.1)	2.8 (4.2)	0.002
CPZE	536.4 (356.3)	540.1 (356.1)	0.924

*: paired t-test

SWNS-J: Subjective Well-being under Neuroleptic drug treatment Short form, Japanese version

DAI-10: Drug Attitude Inventory-10

CPZE: Chlorpromazine equivalent

Table 3. Factors associated with subjective well-being (SWNS-J) after the psychoeducation program: Multiple regression analysis

	Standardized coefficient Beta	t value	p value	VIF
SWNS-J score before program	0.530	7.006	<0.001	1.009
PANSS scale of negative symptoms	-0.161	-2.115	0.037	1.017
DAI-10 after program	0.151	1.996	0.048	1.012
			Adjusted R^2 = 0.341	