DOI: 10.5455/bcp.20140701074403

Effects of a Psychosocial Rehabilitation Program in Addition to Medication in Schizophrenic Patients: A Controlled Study

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ÖZET:

İlaç tedavisine eklenen psikososyal rehabilitasyon programının şizofreni hastaları üzerindeki etkileri: Kontrollü bir çalışma

Amaç: Psikiyatrik hastalıklara çağdaş yaklaşım hastane temelli bakım yerine toplum temelli bakıma yönelmektedir. Şizofreni hastalarında ilaç tedavisine ek olarak gündüz hastanesi uygulamalarının olumlu sonuçları bildirilmektedir.Bu çalışmada amacımız Bakırköy Gündüz Hastanesi'nde uyguladığımız psikososyal rehabilitasyon programının ilaç tedavisi altındaki şizofreni hastalarındaki sonuçlarını ortaya çıkarmak ve bu program uygulanmayan ilaç tedavisi altındaki şizofreni hastaları ile karşılaştırmaktı.

Yöntem: Bakırköy Gündüz Hastanesi'ne en azaltı ay boyunca devam etmiş ve 14 haftalık yapılandırılmış bir grup eğitimi olan psikoeğitim grup tedavisini tamamlamış, ailesinden en az bir anahtar kişinin aile psikoeğitim grubunu tamamladığı, bireysel danışmanlık görüşmelerini üç kezden daha fazla aksatmamış, en az bir atölyede ya da merkezde tanımlanmış iş alanlarından birinde üç ay ya da daha uzun surely çalışan ve ilaç tedavisi de almakta olan 55 hasta ve yalnızca ilaç tedavisi gören 45 kontrol şizofreni hastası alınmıştır. Tüm hastalara Pozitif ve Negatif Sendrom Ölçeği, Şizofreni Hastaları İçin Yaşam Niteliği Ölçeği, İçgörünün Üç Bileşenini Değerlendirme Ölçeği, Sosyal İşlevsellik Ölçeği, Yeti Yitimi Değerlendirme Çizelgesi uygulanmış ve gruplar birbiriyle karşılaştırılmıştır.

Bulgular: Her iki grup arasında cinsiyet, yaş, medeni durum, çocuk sahibi olma durumu, kiminle birlikte yaşadığı değişkenleri yönünden istatistiksel olarak anlamlı fark bulunmamıştır (p>0,05). Rehabilitasyon+ilaçtedavisi grubunun eğitim süresi sadece ilaç tedavisi alan gruptan istatistiksel olarak anlamlı düzeyde yüksekti (p<0,05). Gruplar arasında hastalık başlama yaşı, hastaneye yatış sayısı arasında istatistiksel olarak anlamlı fark bulunmuştur (p<0,05). Pozitif ve Negatif Sendrom Ölçeği toplam puanı, Yeti Yitimi Değerlendirme Çizelgesi skorları gruplar arasında karşılaştırıldığında rehabilitasyon+ilaç tedavisi grubunda istatistiksel olarak düşük sonuçlar elde edilmiştir (p<0,05). İçgörü, Sosyal İşlevsellik Ölçeği, Şizofreni Hastaları İçin Yaşam Niteliği Ölçeği açısından rehabilitasyon+ilaç tedavisi grubunun puanları anlamlı düzeyde yüksekti (p<0,05).

Sonuç: Bu çalışma ülkemizde şizofreni hastalarına dünyadaki gidişata uygun biçimde yaklaşımın sonuçlarını göstermesi bakımından önemlidir. Çalışmamız, çok boyutlu psikososyal rehabilitasyonun, şizofreni hastalarında bir çok alanı etkilediğini ve ilaç tedavisinin yanı sıra başka yaklaşımların gerekliliğini ortaya koymaktadır.

Anahtar sözcükler: gündüz hastanesi, şizofreni, psikososyal rehabilitasyon, eğitim

Klinik Psikofarmakoloji Bulteni 2014;24(4):360-7

ABSTRACT:

Effects of a psychosocial rehabilitation program in addition to medication in schizophrenic patients: a controlled study

Objectives: The contemporary approach to psychiatric diseases is to refer the patient to community-based care instead of hospital-based care. In addition to medication, it has been found that day-hospital practices have positive results in schizophrenic patients. In this study, our purpose is to report the results of a psychosocial rehabilitation program at Bakırköy Day Hospital for schizophrenic patients receiving medication, and to compare them with the results for schizophrenic patients receiving medication who were not in this program.

Methods: The participants were 55 patients who attended Bakırköy Day Hospital continuously for a minimum of six months, completed their psycho-education group therapy, a 14-week structured group therapy and had one key person from their family who completed the family psycho-education group program. These patients had not failed to attend personal consultation interviews more than three times, had worked for three months or longer in a workshop or in one of the fields of business defined by the center and had been receiving medication. The study also included 45 control schizophrenic patients who received only medication. All patients were assessed using the Positive and Negative Syndrome Scale, the Quality of Life Scale, the Schedule for Assessing the Three Components of Insight ,the Social Functionality Scale and the Disability Assessment Schedule and the groups were compared to each other.

Results: No statistically significant difference was found between the two groups in terms of sex, age, marital status, having children, and cohabitant variables (p>0.05). The average number of years of education for the "rehabilitation+medication" group was statistically significantly higher compared to the group that received only medication (p<0.05). A statistically significant difference was found between the groups for age of onset and number of hospitalizations (p<0.05). Statistically lower results were obtained in the "rehabilitation+medication" group when the Positive and Negative Syndrome Scale total score and the Disability Assessment Schedule were compared between the groups (p<0.05). The scores of the "rehabilitation+medication" group were significantly higher in terms of the Schedule for Assessing the Three Components of Insight, Social Functionality Scale, and Quality of Life Scale for schizophrenic patients (p<0.05).

Conclusions: This study is important because it shows that the approach to schizophrenic patients in our country is consistent with treatment progress in the rest of the world. Our study reveals that multidimensional psychosocial rehabilitation influences many fields and highlights the need for other approaches in addition to medication.

Keywords: day hospital, schizophrenia, psychosocial rehabilitation, education

Bulletin of Clinical Psychopharmacology 2014;24(4):360-7

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Date of submission:
April 07, 2014

Date of acceptance:
July 01, 2014

Declaration of interest:
M.A., E.K., D.E., A.Y., A.C., M.E.: The authors reported no conflict of interest related to this article.

INTRODUCTION

Since the 1960s, there has been a worldwide trend towards a community-based approach rather than a hospital-based approach, in the treatment of psychiatric disorders that lead to heavy ability loss. Schizophrenia is 26th in the world in terms of disability-adjusted life years (DALYs). It has been estimated that it will rise to 20th place by 2020[1]. It has been reported that psychosocial rehabilitation programs together with medication have increased treatment efficiency[2-4] and patients' quality of life[5,6] and have decreased family load[7].

Day hospital programs have been reported to have results that include: i) higher recovery in symptoms when compared to outpatients, ii) faster recovery and lower care costs, iii) lower relapse rates, and iv) decreases in the frequency and duration of hospitalizations[8]. Therefore, in mental diseases that lead to heavy disability like schizophrenia, a contemporary and up-to-date understanding includes a multidimensional approach to increasing functionality and decreasing the destructive results of the disease[3,9,10]. Psychosocial rehabilitation has been demonstrated to increase social functionality, quality of life, and insight regarding the disease, and to decrease disability[2,11,12].

There is little scientific data associated with psychosocial rehabilitation in Turkey. Our purpose in this study was to study the results for schizophrenic patients in a psychosocial rehabilitation program, and to compare them with results for schizophrenic patients receiving medication who did not participate in this program. The study took place at Bakırköy Day Hospital and Rehabilitation Center, which serves within the body of the Bakırköy Training and Research Hospital for Psychiatry, Neurology, and Neurosurgery (BTRH). Our research hypotheses were that schizophrenic patients in the psychosocial rehabilitation program receiving medication, compared to schizophrenic patients receiving medication who were not in this program, would demonstrate: i) less severe positive and negative symptoms of schizophrenia, ii) better social functionality and quality of life and lower disability, and iii) more developed insight regarding the disease.

METHOD

Participants

The study included 104 patients out of 180 with a schizophrenia diagnosis, who applied to the BTRH Day Hospital and Rehabilitation Centre and who attended the program for two consecutive periods. Of the 104 patients, who continued to visit the centre for at least six months, 70 patients completed the psycho-education group treatment at least once, with a minimum of one key person from their family completing the family psycho-education group. These patients did not fail to attend personal consultation interviews more than three times, worked for three months or longer in a workshop or in one of the fields of business defined by the center, and were invited to participate in the study. The study group was created with 55 patients, who agreed to participate in the study. The control group consisted of patients, who applied to the BTRH Outpatient Unit policlinics for two consecutive months, agreed to participate in the study, and met the inclusion criteria. Informed consent was obtained from the participants and their relatives before the study. This study was approved by the local ethics committee.

The study included participants who i) were 18-65 years old, ii) were literate, iii) had been monitored for a schizophrenia diagnosis based on the Diagnostic and Statistical Manual for Mental Disorders (DSM IV-TR) criteria for a minimum of two years, iv) continued to visit the day hospital for a minimum of six months for the study group, v) and, for the control group, had not participated in a day hospital or any subheadings of the psychosocial rehabilitation at any center before. Those who were in an acute exacerbation period, those who were still at the hospital or had been released from the hospital at least two weeks previously, those who were still consuming alcohol or psychoactive

substances, and those with an additional diagnosis of mental retardation or cognitive insufficiency were excluded from the study.

Materials

The following scales were used after the patients filled in the socio-demographic information form created by us.

The Positive and Negative Syndrome Scale (PANSS): This is a semi-structured interview scale that was developed by Kay et al. and contains 30 items and 7 scores for assessing severity of symptoms[13]. Seven psychiatric parameters belong to the positive symptoms subscale, while seven parameters belong to the negative symptoms subscale, and the remaining sixteen parameters belong to a general psychopathology subscale. The Turkish reliability and validity study of the scale was conducted by Kostakoğlu et al.[14].

The Quality of Life Scale (QLS): This was developed by Heinrich et al. in 1984[15]; the Turkish adaptation, and validity and reliability study was done in 2000 by Soygür et al.[16]. Applied in the form of a semi-structured interview and assessed by the interviewer, the scale was designed to assess the quality of life of schizophrenic patients receiving maintenance therapy.

The Social Functioning Scale (SFS) was developed in 1990 by Birchwood et al.[5]. The validity and reliability of the Turkish version were determined by Erakay and Gülseren[17]. The scale is filled in by a family member who lives with the patient. It has six sub-fields: social occupation/social withdrawal, interpersonal behaviors, prior social activities, spare-time activities, level of independence, and job/occupation. High scores show that there is positive progress towards functionality.

The Schedule for Assessing the Three Components of Insight (SATCI) is a scale that was developed in 1990 by David for schizophrenic patients. It is a semi-structured scale that consists of eight questions and is administered by a clinician[18]. A high score means a high insight level. The Turkish validity and reliability study of the scale was conducted by Aslan et al.[19].

The World Health Organization Disability Assessment Schedule II (WHODASII) was developed by the World Health Organization in 1999 to determine the restrictions on the individual's activity level and participation in the community, independent from a medical diagnosis[20]. It uses the ICIDH-II (International Classification of Impairments, Disabilities and Handicaps) classification system. It can be completed by the patient, an interviewer, or the patient's relative, and includes forms with 6 or 12 items. Its Turkish validity and reliability scale was completed by Uluğ et al.[21]. A 12-item scanning form was used in this study.

The Psychosocial Rehabilitation Program

Every Monday, a 1.5-hour visiting and problem-solving meeting is held with the participation of the whole team. Here, team staff and consultants share their weekly observations about the patients. In-service problems and communication problems among the employees are also discussed.

In the one-hour supervision meeting on Monday and Friday, through the team staff who work as individual consultants, the rehabilitation process of the patients, the relationship established by the consultant with the patient, attitudes and perceptions are discussed and the consultant is given feedback. On Wednesdays, a supervision meeting is held with the workshop teachers. Here, things to be taken into consideration while working with teachers and psychotic patients, awareness in relation to stigmatizing attitudes and suggestions to correct these attitudes, patients' targeted gains in the workshop, and difficulties experienced in reaching these targets are addressed.

When the patient is admitted to the center, a "member" registration is made and an individual

consultant is assigned. The individual consultant collects multidirectional information about the patient by filling in the "Rehabilitation Form" with the patient and the family through weekly interviews at the beginning, and the rehabilitation plan is made in the light of such information. During the individual consultations, methods such as cognitive-behavioral therapy and psychodrama techniques are used to help reach rehabilitation targets. When the individual consultant thinks the patient is ready, the patient is taken to the psycho-education group, and usually one person from the family is simultaneously included in the family psycho-education group. Following completion of these groups, which last for 14 weeks, the patient and his relative(s) continue in their interaction groups, which are indefinite and continue as long as needed. Social skills groups work more intensively with fewer patients and are open for patients with greater disability, more intense psychotic symptoms, and those who will not participate in the interaction group. Apart from these groups, which are routinely supplied for each patient, art therapy and rhythm groups are also provided. Participation in these groups is optional. However, the patients who decide to participate are expected to obey the general principles of the group therapy program. In addition, based on the interests and needs of each patient, the patient is required to work in at least one workshop for a minimum of three months. To encourage working in the workshops, a "token economy" system is applied. The completion of this program takes about six months. For some patients, additional participation in psycho-education groups, revision of individual consultation work, and further study of previously studied subjects can be required.

In the interaction groups, the therapists are psychiatrists and psychologists, and nurses are assistant therapists. In the psycho-education and social skills groups, nurses serve as therapists or assistant therapists.

Every day, the supervising nurse holds a noon meeting with patients who use the center for at least half a day and the patients are allowed to voice their opinions and criticisms about the operation of the center at this time. To cover all these works, rules that both patients and employees are expected to obey are executed in compliance with the "ambient treatment" principles in every part of the center.

Statistical Analysis

Statistical analyses were made with SPSS for Windows v. 20.0. For discrete variables, such as identifying statistics and numbers (%) and for continuous variables, average ± standard deviation or median (minimal-maximum) values were used. In intergroup comparisons, the chi-square test was used for categorical variables. Compliance of continuous variables with normal distribution was assessed through the Kolmogorov-Smirnov test. In compliance with the distributions of the variables, intergroup comparisons were made through the Student's t-test or the Mann-Whitney U test. Covariance analysis was conducted in order to exclude the effect of the potential mixers on the dependent variables. Values of $p<0.05$ are assessed as statistically significant.

Findings

The research group consisted of 100 persons. Among these participants, 55 (55%) were in the "rehabilitation+medication" group, and 45 (45%) were in the group that received only medication. No statistically significant difference was found between the two groups in terms of sex, age, marital status, having children, and cohabitant variables ($p>0.05$). In both groups,the highest figures were for men, single people, those without children, and those living with a mother/father/sibling. While the average age of the "rehabilitation+medication" group was 40.5+9.1, the average age of the group that received only medication was 41.5±11.5, and the difference between them was not statistically significant ($p>0.05$). The average education time of the "rehabilitation+medication" group was statistically significantly higher compared to the

group that received only medication (p<0.05).

The ratios of consumption of alcohol/drugs and history of suicide attempts and disease duration average were similar in both groups (p>0.05). Statistically significant differences were found between the groups in terms of disease start age and number of hospitalizations (p<0.05) (Table 1).

When the PANSS total score and WHODAS II scores were compared between the groups, statistically lower results were obtained in all scores in the group that received "rehabilitation+ medication"(p<0.05). In terms of the Schedule for

Table 1: Socio-demographic and clinical properties of the study groups

	Rehabilitation + Medication (n=55)		Medication (n=45)		
	Number	**%**	**Number**	**%**	**p**
Sex					
Female	16	29	13	29	0.982*
Male	39	71	32	71	
Marital Status					
Single	39	71	32	71	0.774*
Married	9	16	9	20	
Widow/Divorced/Separated	7	13	4	9	
Having Children					
No	43	78	33	73	0.572*
Yes	12	22	12	27	
Cohabitants					
Alone	7	13	2	4	0.348*
Spouse and children	8	15	8	18	
Mother/Father	40	73	34	76	
Nursery	0	0	1	2	
Consumption of Alcohol/Drugs					
No	48	87	38	84	0.685*
Yes	7	13	7	16	
Suicide Attempt History					
No	31	56	25	56	0.935*
Yes	24	44	20	44	
	Mean+SD Or Median (minimum-maximum)		**Mean+SD Or Median (minimum -maximum)**		
Age (Years)	40.5+9.1		41.5+11.5		0.613**
Education (Years)	11 (0–15)		8 (0–15)		0.011***
Disease Start Age (Years)	19 (14–30)		21 (13–45)		0.025***
Disease Duration (Years)	21 (7–44)		17 (5–46)		0.207***
Number of Hospitalization	4 (0–14)		2 (0–13)		0.001***

*Chi-square test, **student t test, ***Mann Whitney U test

Table 2: Psychometric assessment results of study groups

	Rehabilitation + Medication (n=55)	Medication (n=45)	p
PANSS-Positive	12.6±4.1	17.1±5.1	<0.001*
PANSS-Negative	14.6±4.8	21.3±5.6	<0.001*
PANSS-General	25.71±7.6	32.58±7.4	<0.001*
PANSS-Total	53±12.8	71.07±15.9	<0.001*
WHO-DAS-II	22 (12–42)	29 (6–51)	0.018**
SATCI	17 (8–25)	11.5 (1–18)	<0.001**
SFS	118 (74–192)	88 (35–145)	<0.001**
QLS	67 (34–105)	35 (10–89)	<0.001**

*t test, **Mann Whitney U test, PANSS: Positiveand Negative Syndrome Scale, WHO-DAS-II: World Health Organization-Disability Assessment Schedule-II, SATCI: Scale of Assessment of the Three Components of Insight, SFS: Social Functioning Scale, QLS: Quality ofLife Scale

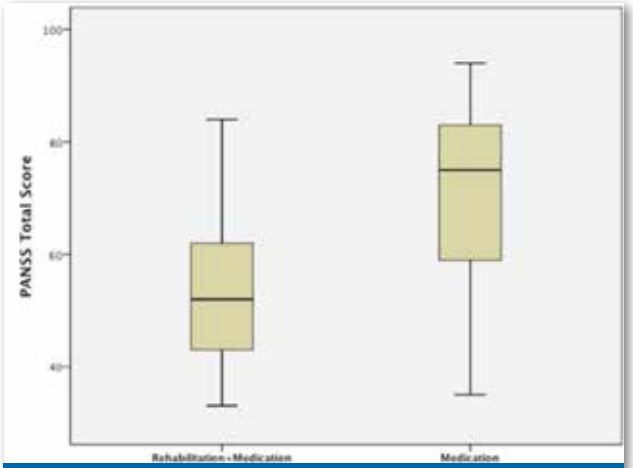

Figure 1: Comparison of total PANSS scores of the study groups

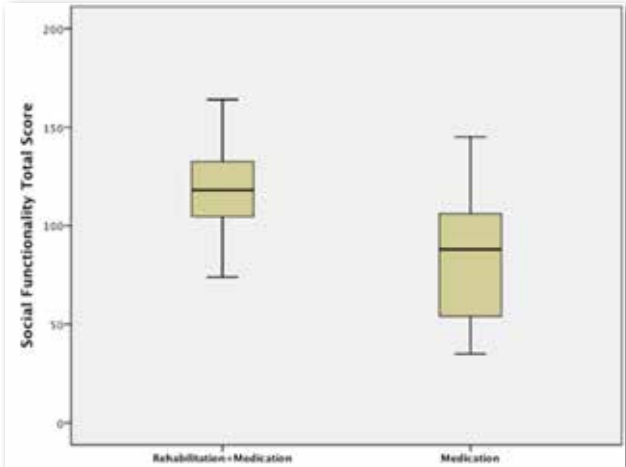

Figure 2: Comparison of the total social functionality scale scores of the study groups

Assessing the Three Components of Insight, Social Functioning Scale and Quality of Life Scale the scores of the "rehabilitation+medication" group were statistically significantly higher compared to those for the group that only received medication ($p<0.05$) (Table 2).

After correcting for years of education, disease start age, and number of hospitalizations through covariance analysis, a statistically significant difference remained between the groups for the PANSS total score and Social Functioning Scale total scores. While the total average score of the "rehabilitation+medication" group was statistically significantly lower (Figure 1), the social functionality total score average was significantly higher (Figure 2).

DISCUSSION

In our study, the clinical symptoms of the patients with schizophrenia in the rehabilitation program were found to be milder than those of the patients who were diagnosed to have schizophrenia and did not participate in this program. In an unpublished 18-month study in China, 140 schizophrenic outpatients in remission were assessed. In this study, the results of the rehabilitation program that was provided to schizophrenic patients showed a significant decrease in the Positive and Negative Syndrome Scale (PANSS) when compared to the group that received only medication, which is similar to the findings of our study[22]. In Turkey in another eight-month follow-up study done by Yildiz et al., assessment was made using the Brief Psychiatric Rating Scale (BPRS), and a significant decrease was found in scale scores for schizophrenic patients following rehabilitation training[11]. The results of the extension study carried out in China and the findings of our study consistently show that rehabilitation has positive effects on the clinical findings for schizophrenic patients. However, while interpreting these results, it should be taken into consideration that our study is cross-sectional. We suppose that this decrease in the severity of the disease could depend on considerations such as disease etiopathogenesis, symptoms, stimulation of symptoms, treatment, side effects of the treatment, disease-related crises, and crisis management with the patient and somebody from the family in the psycho-education groups within the rehabilitation program, and on creating awareness, as well as the calming and limiting effect of the treatment environment of the center.

Other important findings of our study, on the other hand, are that social functionality scores were better and disability was less in the schizophrenic patients who participated in the rehabilitation program compared to non-participants in this program. In Turkey, Yildiz et al. tracked 14 schizophrenic patients for eight

months in a psychosocial rehabilitation program under a clubhouse trial model, and they found that social functionality had significantly improved at the end compared to the beginning[23]. In a study that was published in 2013, a psychosocial training program similar to the rehabilitation program that was administered by us in a day hospital was applied by Ensari et al. to 30 patients with a schizophrenia diagnosis, and it was shown that social functionality increased and disability decreased[24]. In our study, it was found that quality of life was higher in the patients who participated in the psychosocial rehabilitation program, as we expected. In the above-mentioned eight-month follow-up study by Yıldız et al., the Quality of Life Scale was used for the schizophrenic patients, and a significant increase was found in these scale scores following a rehabilitation training program[11]. Therefore, the findings of our study are consistent with the scientific literature in terms of social functionality, quality of life, and disability, but an important limitation in our study was that the patients who participated in the rehabilitation program did not have baseline data. In the rehabilitation program that we administered, use of tools within the scope of job-occupation treatment and occupation activity decreased the disability of our patients. Additionally, the patients' receipt of homework aimed to increase social functionality both during individual interviews and in the psycho-education groups, which was overseen by a responsible person and the patients' participation in workshops and group activities in the other fields of the center might together have increased the scale scores for social functionality and life quality. Whether this increase is reflected in routine daily life independent of the patient's use of the center should be evaluated through follow-up studies. Another question that arose in relation to our study was whether the schizophrenic patients were selected for the rehabilitation program from among patients with more functional, less destructive, and better quality of life. However, the disease start age was lower, the disease duration was higher, and the frequency of treatment upon hospitalization was higher in the patients who were taken into the rehabilitation program. Moreover, there was no significant difference between the groups in terms of marital status and number suicide attempts should also be taken into consideration. Still, the assessment scores before entry into the rehabilitation program could have been more explanatory.

In our study, it was observed that insight was greater in patients who were accepted into the psychosocial rehabilitation program. In a study by Deveci et al., schizophrenic patients received only psychosocial skills training, and their insight levels were found to have increased[25]. It is generally accepted that psychosocial skills training results in greater insight, increased quality of life, better executive functions, and better socialization in schizophrenic patients[26-28]. In the rehabilitation program that was adopted by us, psychosocial skills training was provided together with other areas of activity, and our findings support the findings of scientific literature.

In our study, there were some confounding factors that might have influenced the significant difference between the groups. The only variable that could be construed in favor of the "medication+rehabilitation" group was that they received significantly more education time. The variables that could be construed in favor of the group that received only medication were less frequent hospitalization and older age of onset. The results were still significant after making corrections with ANCOVA for training duration, number of hospitalizations, and disease start age.

This study had some limitations. The small number of samples, lack of baseline data and unavailability of extended data are among the important limitations.

As a result, this study is important in terms of showing the results of an approach to schizophrenic patients that is consistent with the progress of treatment in the rest of the world. Our study has revealed that psychosocial rehabilitation influences many fields in schizophrenic patients, as well as highlighting the need for other approaches in addition to medication.

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