EFFECTS OF PSYCHOSOCIAL DAY CARE PROGRAMME ON QUALITY OF LIFE IN PATIENTS AFFECTED WITH SCHIZOPHRENIA – A PROSPECTIVE STUDY

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Tanja Grahovac Juretić[1], Klementina Ružić[1], Marina Letica-Crepulja[1], Daniela Petrić[1], Elizabeta Dadić-Hero[2,3] & Tanja Frančišković[1]

[1]*Psychiatric Clinic, Clinical Hospital Centre Rijeka, Rijeka, Croatia*
[2]*Community Primary Health Centre, Primorsko-goranska County, Rijeka, Croatia*
[3]*Department of Social Medicine and Epidemiology, School of Medicine, Rijeka, Croatia*

SUMMARY

Background: The basic aim of this prospective research was to establish the effect of psychosocial day care programme on the therapy outcomes in patients with schizophrenia.

Subjects and methods: While 115 patients with schizophrenia were invited to participate, 100 of them completed the study and were subdivided into two groups. In addition to pharmacotherapy, the experimental group only (N=50) was integrated into a day-hospital-based psychosocial day care programme. The instruments were applied in three phases: the first measurement for experimental group subjects took place on the first day of psychosocial day-care programme, while for the control group subjects the same was performed on the last day of inpatient care. The second measurement for the experimental group was performed in the end of psychosocial day-care programme, while for the control group patients it occurred four months after inpatient treatment. The third measurement was carried out six months after the second one. The following instruments were applied: General Demographic Questionnaire at the first measurement, Manchester Short Assessment of Quality of Life-MANSA both at the first and third measurement, and Positive and Negative Symptoms Scale-PANSS at all three measurements.

Results: Experimental group patients showed a statistically significant increase in quality of life outcomes as well as statistically significant decrease in positive symptoms and general psychopathology at all three measurements and with regard to the control group. As to the negative symptoms, only the third measurement revealed a statistically significant difference.

Conclusion: The results obtained indicate that the adjuvant treatment of psychosocial day care programme has a positive effect on treatment outcomes: on the increase of the patients' quality of life, and, to some extent, on the decrease of symptom intensity in positive symptoms in schizophrenia spectrum. However, the effect of psychosocial day-care programme on the negative symptoms was proved to be considerably smaller.

Key words: *schizophrenia - quality of life - psychosocial day care programme - mental disease*

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INTRODUCTION

Schizophrenia is a chronic mental disorder characterised by bizarre delusions and behaviour, hallucinations, negative, affective and cognitive symptoms. The disorder severely impairs family relations and working capacity of the person affected, as well as his social functioning (Chien & Yip 2013). The disorder affects both males and females with equal frequency. Most cases appear in adolescence and young adulthood.

Current approaches to schizophrenia treatment involve both pharmacologic and nonpharmacologic treatment. However, due to the disorder complexity, pharmacologic approach is often combined with psychosocial treatment (Kern et al. 2009, Eack 2012, Chien et al. 2013). Psychosocial treatment also includes psychosocial intervention- aiming at resocialisation and reintegration of mental patients in their environment and community (De Silva et al. 2013). Symptom reduction or remission is one of the most widely considered measures in the assessment of therapy outcome. However,

the aforesaid biomedical model of evaluation tends to be modified in accordance with the findings that better patient socialisation is not necessarily accompanied by the complete reduction of schizophrenia positive and negative symptoms. Therefore, more importance has lately been given to the role of quality of life, as an indicator of therapy outcomes (Kern et al. 2009).

Quality of life is a multidimensional concept and it includes aspects of physical, psychological and social wellbeing (Eack 2012). Patients with severe psychopathology have poor social relations and lower objective quality of life (Eack & Newhill 2007, Bengtsson-Tops & Hansson 2001, Barnes et al. 2012, Ritsner et al. 2012).

Calman suggests that quality of life measures the gap between the expectations and actual experiences of the individual (Katsching 2006). The narrower is the gap, the higher is the quality of life. However, such experiences do not only depend on subjective factors, but also involve actual environmental factors. Numerous factors are associated with poor quality of life of

patients affected by schizophrenia (e.g. males, single males, patients with lower educational attainment, lack of support and negative symptoms, patients administered with three or more psychopharmaceuticals or those experiencing particular side-effects) (Katsching 2006, Cardoso et al. 2005, Hayhurst et al. 2014).

Social functioning is a part of quality of life and includes different roles (e.g. job, family, community, society). Research has showed that the absence or lack of social contacts tends to be one of the most common causes of dissatisfaction of patients affected by schizophrenia (Hayhurst et al. 2014, Mortimer & Al-Agib 2007, Heider et al. 2007, Norholm & Bech 2006). Patients involved in psychosocial interventions present better social functioning regardless of the type of pharmacologic treatment (Glynn et al. 2002). Despite the fact that psychosocial interventions have been used for a long time in the treatment of mental disorders, the relevant literature presents scarce data addressing the effectiveness of psychosocial day care programme in day care hospitals (De Silva et al. 2013). Day care hospitals offer comprehensive psychiatric care and provide patients affected by schizophrenia with an alternative to inpatient treatment (Marshall 2005). The efficacy of rehabilitation programmes was confirmed in several studies (Falloon 2004, Pioli et al. 2006, Štrkalj-Ivezić et 2013). A multicentric study in Italy indicated that patients included in rehabilitation programme showed statistically greater improvements in psycho-pathology and social functioning (Pioli et al. 2006). Štrkalj-Ivezić et al. evaluated rehabilitation day centre programme and confirmed that patients who were involved in such programme showed improvement in social functioning, quality of life and self-esteem (Štrkalj-Ivezić et al. 2013).

As to the treatment of patients with schizophrenia, it can be assumed that medication therapy affects the intensity of symptoms, while psychosocial day care programme contributes to the improvement of quality of life. The basic aim of this prospective study was to establish the effect of psychosocial day care programme on the therapy outcomes in patients affected by schizophrenia.

SUBJECTS AND METHODS

Patients

A total number of 115 patients affected with schizophrenia were contacted within the period of one month following their discharge from inpatient care at the Psychiatric Clinic, Clinical Hospital Centre Rijeka, while 100 of them finished the study. A psychiatrist recruited the patients to participate in the study. Six of the 115 contacted patients refused to participate due to various personal reasons. The remaining 109 patients were assigned in psychosocial - experimental group (N=54) or control group (N=55). However, between the first and the second measurement 3 patients from the psychosocial group and 2 patients from the control group dropped out. Finally, after the second measurement 1 patient from the psychosocial group and 3 patients from the control group failed to complete the study protocol, leaving the final cohorts of 50 participants in each group. The groups were matched by gender, age, education, employment and marital status.

Inclusion criteria for participation in this study for both groups were: a diagnosis of schizophrenia (F20.0-F20.9) confirmed by International statistical classification of diseases and health related problems (ICD-10) (World Health Organization 2004) and adult patients aged 20 to 65.

Exclusion criteria for both groups were: personality disorder, alcohol/drug abuse, mood disorder, organic brain conditions, mental retardation, physical disability as well as further inpatient care in another psychiatric hospital indicated during hospitalisation. Comorbid psychiatric disorders were diagnosed by the application of The Mini-International Neuropsychiatric Interview (M.I.N.I.) (Sheehan et al. 1998). All of the included patients encountered psychosocial day care programme for the first time.

In addition to pharmacotherapy, the patients in psychosocial (experimental) group (N=50) were also integrated into a day-hospital-based psychosocial day care programme for a period of four months. Such additional treatment was not applied to the subjects of the control group (N=50).

This prospective study was being carried out from October 2010 to November 2013 at the Psychiatric Clinic, Clinical Hospital Centre Rijeka. All the participants provided their informed consent after having been informed of all the aspects of the study. The study has been approved by the Ethics Committee of the University Hospital Centre Rijeka and the Faculty of Medicine (Rijeka). Psychosocial interventions, carried out at the day hospital of the Psychiatric Clinic, Clinical Hospital Centre Rijeka, constituted a four-month psychosocial day care programme. Such psychosocial day care programme was performed in two phases: intensive and reduced treatment. Intensive phase of psychosocial day care programme lasted for one month, three sessions a week, and included a therapeutic community, social skills training in group and patient education which was guided by a psychiatrist. Upon the completion of the intensive phase, the patients took part in the reduced psychosocial day care programme. The latter consisted of one session a week for a three–month period and included therapeutic community and social skills training in group. The psychosocial day care programme was based on closed group therapy and was conducted by a multidisciplinary team (psychiatrist, group psychotherapist, social worker). All the patients had been taking medications and continued taking it for the whole duration of the study.

Methods

The same specialist interviewed all the participants in all three measurements. The first measurement for experimental group members took place on the first day of psychosocial day care programme, while for the control group participants, the same was performed on the last day of inpatient care. The second measurement for the experimental group was performed on the last day of psychosocial day care programme, while such data regarding the control group patients were collected four months after their inpatient treatment. The third measurement was carried out six months after the second one.

General Demographic Questionnaire adapted for the purpose of this study was used to collect information regarding the age, gender, education level, marital status, socio-economic and employment status and was applied at the first measurement. Quality of Life Questionnaire (Manchester Short Assessment of Quality of Life, MANSA) (Priebe et al. 1999) was applied both at the second and third measurement. The tool consists of 16 questions graded from 1 to 7 where a higher score indicates a greater quality of life. The assessment of positive and negative symptoms and general psychopathology of schizophrenia (Positive and Negative Syndrome Scale, PANSS) (Kay et al. 1987) was performed at all three measurements. PANSS consists of three sections (positive symptoms, negative symptoms, general psychopathology) and 30 questions graded from 1 to 7 according to the severity of clinical presentation.

Statistics

A statistical power analysis was performed for sample size estimation. The effect size in this study was considered to be medium using Cohen's criteria. With an alpha =0.05 and power =0.80, the projected sample size needed with this effect size is approximately N=42 in each group to allow us between group comparison. Thus, our sample size of N=50 in each group can be regarded adequate for the main objective of this study.

Descriptive statistics parameters were summarised by arithmetic means and standard deviations for continuous data and by frequencies and percentages for categorical data.

T-test was used to determine statistical significance between continuous variables, while chi-squared test (χ^2) was applied to sets of categorical data. Two-way repeated measures ANOVA was used to compare differences in severity of symptoms and quality of life between the experimental and control group at specific time points.

The significance level was set at $p<0.05$ and SPSS software package was used to analyse the obtained data (SPSS for Windows 16.0, SPSS, Chicago, IL, USA).

RESULTS

Table 1 shows basic sociodemographic features of the patients included in the study. No significant difference was found between the experimental and control group with regard to any of the listed sociodemographic characteristics. Most participants in both groups were single, lived in their parents' homes, most of them had attained secondary education level and were unemployed. They gave different estimates of their socioeconomic status (Table 1).

Two-way repeated measures ANOVA revealed statistically significant lower PANSS symptom scores ($p<0.001$) in patients involved in psychosocial day care programme with respect to the control group participants. The baseline measurement proved that patients who took part in psychosocial day care programme showed statistically significant lower scores on positive symptoms ($p<0.001$) and general psychopathology ($p<0.001$), while such difference was not revealed with respect to negative symptoms. The observation of single scales reveals that there was a statistically significant reduction of positive symptoms ($p<0.001$) and general psychopathology ($p<0.001$) in patients involved in psychosocial day care programme in a day care hospital with regard to those of the control group. As to the negative symptoms, only the third measurement revealed a statistically significant difference in the experimental group patients (Table 2).

Two-way repeated measures ANOVA at the third measurement also showed statistically significant increase of life quality according to MANSA ($p<0.023$) in patients involved in psychosocial day care programme in a day care hospital with respect to the control group (Table 3).

However, differences between the experimental and control group were revealed at certain questionnaire items.

Table 3 shows that at the baseline measurement, the control group participants showed statistically significant lower satisfaction with accommodation ($p<0.034$), satisfaction with personal safety ($p<0.039$), satisfaction with people they live with (single life) ($p<0.001$) and satisfaction with family relationships ($p<0.002$).

Statistically significant differences revealed at the first measurement were also found at the third measurement for the same categories. In addition to those stated above, the second measurement showed that satisfaction with physical health was significantly lower in control group participants ($p<0.016$, Table 3). Moreover, the third measurement revealed that patients involved in psychosocial day care programme had statistically significant greater number of contacts with their close friends with respect to those of the control group ($p<0.036$, Table 3).

Table 1. Socio-demographic characteristics of patients

	Psychosocial group N (%)	Control group N (%)	p
Age			
AM (SD)	34.51 (9.31)	35.96 (10.19)	0.460*
Gender			
Men	32 (64%)	24 (48%)	
Women	18 (36%)	26 (52%)	0.116**
Marital status			
Married /cohabiting	5 (10%)	7 (14%)	
Single	40 (80%)	36 (72%)	
Divorced	2 (4%)	5 (10%)	
Other	3 (6%)	2 (4%)	0.594**
Household characteristics			
Own house/flat (or owned by partner)	9 (18%)	15 (30%)	
At their parents'	32 (64%)	27 (54%)	
Rent/temporary residence	7 (14%)	6 (12%)	
Other	2 (4%)	2 (4%)	0.219**
Education			
Primary school	5 (10%)	4 (8%)	
Secondary school	36 (72%)	37 (74%)	
Bachelor Degree	4 (8%)	7 (14%)	
Master Degree	5 (10%)	2(4%)	0.513**
Employment			
Employed	9 (18%)	6 (12%)	
Unemployed	31 (62%)	36 (72%)	
Retired	10 (20%)	8 (16%)	0.684**
Economic status			
Extremely poor	9 (18%)	3 (6%)	
Poor	14 (28%)	18 (36%)	
Average	9 (18%)	8 (16%)	
Good	17 (34%)	15 (30%)	
Very good	1 (2%)	6 (12%)	0.173**

* t-test,   ** χ^2 test (chi-square test)

Table 2. Schizophrenia symptoms in patients involved in psychosocial day care programme and in control group patients

	Psychosocial group (N=50) X (SD)	Control group (N=50) X (SD)	p
Baseline			
Positive symptoms	20.04 (4.22)	23.32 (4.75)	0.001
Negative symptoms	25.80 (11.86)	25.38 (6.07)	0.824
General psychopathology	39.44 (7.10)	46.62 (10.18)	0.001
Total PANSS score	85.28 (18.75)	95.32 (17.64)	0.007
After 4 months			
Positive symptoms	16.90 (4.05)	21.56 (4.89)	0.001
Negative symptoms	22.20 (5.70)	24.64 (6.85)	0.056
General psychopathology	33.82 (7.90)	44.24 (8.92)	0.001
Total PANSS score	72.92 (15.97)	90.44 (18.92)	0.001
After 10 months			
Positive symptoms	14.20 (3.42)	19.68 (5.56)	0.001
Negative symptoms	20.58 (6.01)	25.04 (9.55)	0.006
General psychopathology	29.32 (6.77)	41.88 (10.26)	0.001
Total PANSS score	64.10 (14.92)	86.60 (21.88)	0.001

Table 3. Differences between subjective and objective estimation of quality of life at baseline and third measurement in psychosocial (experimental) and control group

	Psychosocial group (N=50) X (SD)	Control group (N=50) X (SD)	p*
Baseline			
Satisfaction with life as a whole	4.18 (1.21)	4.00 (1.53)	0.605
Satisfaction with job/education/unemployment/ retirement	3.63 (1.48)	3.57 (1.72)	0.967
Satisfaction with financial situation	3.29 (1.43)	3.42 (1.33)	0.687
Close friends	4.14 (1.64)	3.66 (1.47)	0.168
Satisfaction with leisure activities	4.10 (1.49)	4.06 (1.54)	0.938
Satisfaction with accommodation	5.38 (1.44)	4.72 (1.62)	0.034
Satisfaction with personal safety	4.72 (1.51)	4.0 (1.91)	0.039
Satisfaction with people you live with/ with single life	5.52 (1.28)	4.58 (1.54)	0.001
Satisfaction with sex life	3.07 (1.74)	3.02 (1.83)	0.903
Satisfaction with your relationship with family	5.32 (1.29)	4.42 (1.57)	0.002
Satisfaction with physical health	4.40 (1.54)	3.96 (1.65)	0.231
Satisfaction with mental health	4.24 (1.56)	4.14 (1.57)	0.829
Total subjective estimation	4.28 (1.20)	4.97 (1.21)	0.142
	N (%)	N (%)	p**
Have got a close friend	36 (74%)	31 (62%)	0.338
Have visited a close friend	32 (64%)	26 (52%)	0.224
10 Months after			
Satisfaction with life as a whole	4.50 (1.28)	4.31 (1.50)	0.490
Satisfaction with job/education/ unemployment/retirement	3.74 (1.60)	3.71 (1.59)	0.936
Satisfaction with financial situation	3.52 (1.59)	3.49 (1.43)	0.921
Close friends	4.12 (1.56)	3.67 (1.53)	0.154
Satisfaction with leisure activities	4.06 (1.41)	4.10 (1.54)	0.888
Satisfaction with accommodation	5.56 (1.23)	4.61 (1.54)	0.001
Satisfaction with personal safety	4.84 (1.50)	4.37 (1.79)	0.158
Satisfaction with people you live with/ with single life	5.56 (1.20)	4.63 (1.52)	0.001
Satisfaction with sex life	3.42 (1.84)	3.15 (1.69)	0.445
Satisfaction with your relationship with family	5.48 (1.40)	4.45 (1.54)	0.001
Satisfaction with physical health	4.72 (1.53)	3.90 (1.81)	0.016
Satisfaction with mental health	4.42 (1.61)	4.22 (1.65)	0.551
Total subjective estimation	4.49 (0.89)	4.02 (1.14)	0.023
	N (%)	N (%)	p**
Have got a close friend	39 (78%)	36 (72%)	0.410
Have visited a close friend	38 (76%)	27 (54%)	0.036

*t-test;   **χ2 test

DISCUSSION

This prospective study has established that patients involved in a psychosocial day care programme had statistically significant lower scores on the scale of positive schizophrenia symptoms as well as greater level of quality of life and better social relations. Moreover, negative schizophrenia symptoms were significantly reduced in patients of the psychosocial (experimental) group during the follow up, i. e. six months after the completion of the programme. Wilson- d'Almeida et al. have also revealed the reduction of such symptoms according to PANSS, while Hayhurst et al. have claimed the reduction of negative symptoms to be a predictor of higher quality of life of the aforesaid patients (Wilson-d'Almeida et al. 2013, Hayhurst et al. 2014).

Such results may be related to the effect of psychosocial day care programme that consisted of several psychosocial interventions. Possible effects on patients were as follows: patients acquired social skills and improved their verbal and nonverbal communication skills (eye contact, facial expressions, gestures), they also observed other patients' behaviour, interacted with other members, learned to interpret their social environment and were provided with disease-specific education. Therefore, psychosocial interventions had an impact on social functioning improvement since patients involved in psychosocial day care programme had higher scores in objective quality of life indicators.

The results presented in our study show improvement in the quality of life in patients who were included in the program, which is also evident in the paper evaluating rehabilitation day centre programme (Štrkalj-Ivezić et al. 2013).

We may assume that statistically significant lower scores in certain subjective indicators of control group quality of life could be explained by the fact that the latter had lower insight into illness, i.e. had high expectations and therefore a wide expectations-experience gap. However, considering the fact that the latter is only our assumption, it certainly can be considered to be one of the limitations of this research.

In accordance with previous research, the results obtained in this study support the fact that patients involved in psychosocial day care programme show statistically significant reduction of positive symptoms and general psychopathology. The aforesaid can be explained by better coping strategies, improved insight, as well as better compliance with medication therapy of such patients (Chien & Yip 2013, Elis et al. 2013). The results of our study are consistent with the results of a multicentric study conducted in Italy which showed statistically greater improvements in psychopathology in patients included in rehabilitation programme (Pioli et al. 2006).

Psychosocial day care programme had a delayed effect on negative symptomatology which proves such symptomatology to be more resistant. However, the fact that negative symptoms reflect a possible defence mechanism of such patients may also be considered. Therefore, the improvement of patients' insight leads to their more objective perception of reality and to the acceptance of the fact that high expectations are unlikely to be fulfilled.

Reality confrontation can help the patients to have a better perception of the gap between their expectations and achievements. It was Calman himself who suggested that patients with mental disorders lower their expectations during the adaptive psychological process (Katschnig 2006). Previous studies supported the practice of the combined pharmacological and psychosocial treatment of patients with schizophrenia since medication alone was not proved to be sufficient for the full functional recovery (Chien et al. 2013, Fallon et al. 2004, Wilson-d'Almeida et al. 2013, Elis et al. 2013).

This prospective study has both evaluated the effect of psychosocial day care programme on schizophrenia patients in a day care hospital and established the outcomes of such programme six months after its completion. However, this study does reveal several limitations. Firstly, the number of subjects is relatively small in order to allow significant generalisation. Secondly, the screening of patients was biased which explains the difference in PANSS score at baseline between intervention and control groups. Furthermore, not all the components of the psychosocial day care programme (therapeutic community, patient education and social skills training in group) have been evaluated separately, but just as parts of the programme as a whole. Therefore, further research should investigate the effect of single components of psychosocial day care programme on the quality of life of these patients. Moreover, further related research should adopt a longer follow-up period in results monitoring. Finally, since the relationship between a therapist and a patient is a non specific therapeutic factor which certainly influences treatment outcomes, it should therefore be included in further research.

CONCLUSION

The results of this study indicate that the adjuvant treatment of the psychosocial day care programme in a day care hospital has a positive effect on the treatment outcomes, i.e. on the increase of the patients' quality of life, on the decrease of symptom intensity in positive symptoms in schizophrenia spectrum, as well as on the decrease of general psychopathology. Psychosocial day care programme was also proved to be effective with respect to negative symptoms, considering the beneficial effect of the resocialisation process.

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Correspondence:

Tanja Grahovac Juretić, MD
Psychiatry Clinic, Clinical Hospital Centre
Cambierieva 17/7, 51000 Rijeka, Croatia
E-mail: tanjagj1@gmail.com