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THE IMPACT OF A REHABILITATION DAY CENTRE PROGRAM FOR PERSONS SUFFERING FROM SCHIZOPHRENIA ON QUALITY OF LIFE, SOCIAL FUNCTIONING AND SELF-ESTEEM

Slađana Štrkalj-Ivezić[1], Marijo Vrdoljak[2], Lana Mužinić[3] & Mark Agius[4,5,6]

[1]University Hospital Vrapče, Zagreb, Croatia
[2]Social institution for persons with mental illness Zagreb, Zagreb, Croatia
[3]University Hospital Dubrava, Department of Psychiatry, Zagreb, Croatia
[4]Department of Psychiatry University of Cambridge, Cambridge, UK
[5]Clare College Cambridge, Cambridge, UK
[6]South Essex Partnership University Foundation Trust, UK

SUMMARY

Background: *Presently few studies demonstrate improved outcomes in patients with schizophrenia treated in day rehabilitation centres. One reason is the absence of an evidence based protocol for rehabilitation in such centres. Hence further research is required to assess whether such a protocol will improve psychosocial outcomes.*

Aims: *We performed a controlled evaluation study of a protocol based rehabilitation day program (RDC) for persons suffering from schizophrenia.*

Methods: *Patients from the experimental group (N=50) were treated within the RDC for a 6 month period. The control group were patients on the waiting list for the RDC. Quality of life (MANSA), social functioning (OSA) and self-esteem (Rosenberg) were measured before and after the intervention. Results: Statistically significant improvement was shown in social functioning measured by OSA ($F(1,96)=33.7$; $p<0.001$), quality of life measured by MANSA ($F(1,96)=69.3$; $p<0.001$) and self esteem measured by Rosenberg scale ($F(1,96)=84.5$; $p<0.001$) for patients treated in the RDC compared with the control group, conversely, the control group outcomes deteriorated.*

Conclusion: *An evidence based protocol for rehabilitation within the RDC lead to improved social outcomes and recovery for persons suffering from schizophrenia.*

Key words: *rehabilitation - day center - social functioning - quality of life - schizophrenia*

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INTRODUCTION

Numerous studies confirm the efficacy of psycho-social interventions in treatment of person with schizophrenia, such as social skills training, case management, supported employment, psycho-education with families (Falloon 1999, Dixon et al. 2010, Bustillo et al. 2001) and for patients alone (Xia et al. 2011). These interventions are now recognised in to guidelines as a part of standard treatment (NICE 2009).

Despite extensive evidence on effective mental health practices for persons with severe mental illness, research shows that routine mental health programs do not provide evidence-based practices to the great majority of their clients with these illnesses (Drake et al. 2001). A low proportions of cases receive effective rehabilitation interventions which could influence the recovery of patients. The absence of a structured framework to formulate rehabilitation practices could be one of reasons (Pioli et al. 2006).

The new paradigm emphasizes helping people attain social outcomes such as independence, employment, satisfying relationships, and a good quality of life, so the measurement of treatment outcome emphasizes the quality of life, social functioning and, more recently, recovery (Drake et al. 2001, Sartorius 2009).

Although the World Health Organization recommends emphasis on the development of community mental health services (WHO 2005) such as rehabilitation day centres, there are not enough studies which evaluate the programs of those centres. According to two Cochrane reviews on the efficiency of day treatment programs (Marshal 2001, Shek et al. 2009) and a study of WHO (Marshal 2005) there is only limited evidence to justify the provision of a day treatment program and transitional day hospital care, and no evidence to support the provision of day care centres, so further research is recommended (Marshal et al. 2001, Shek et al. 2009, Marshal 2005). Day hospital care may help avoid inpatient care but data are lacking on a raft of outcomes that are now considered important, such as quality of life, patient satisfaction, healthy days, and cost (Shek et al. 2009). Overall there is insufficient evidence to determine whether any of the three types of day hospital care had substantial advantages over outpatient care (Shek et al. 2009). The task of day centres for people suffering from schizophrenia and related disorders is to offer an alternative to inpatient treatment, to shorten the length of stay in hospitals and to facilitate recovery and maintenance of health within the community (Marshal et al. 2005).

Three randomized studies included in the WHO review (Linn et al. 1979, Meltzoff et al. 1966, Weldon

et al. 1979) that investigated the efficacy of treatment in day centres compared with an outpatient treatment which included only medication therapy in one and research and psychotherapy in the others, found that there was no difference in outcome compared to standard treatment (Marshal 2005). The methods used in the above mentioned day centres were social inclusion, use of leisure time, and individual and group psychotherapy.

There are few studies that confirm the efficacy of rehabilitation programs composed of several psychosocial interventions (Pioli et al. 2006, Pan et al. 2011, Falloon et al. 2004, Štrkalj-Ivezic et al. 2009, Pioli et al. 2006) conducted research in 10 rehabilitation centres in Italy proved the efficacy of a rehabilitation program that was carried out based on a rehabilitation protocol, compared with treatment in a rehabilitation centre without the protocol. The program was based on the stress-vulnerability model, assessment of deficit and ability and an individual rehabilitation plan. The following psychosocial methods were used: recognizing the early relapse signs, improving strategies for coping with stress, and increasing adherence to medication by using motivational interviewing. Before beginning the research, staff involved in the rehabilitation program was educated about the approach. The results of the research were measured after 6-12 months, and showed that patients who had been involved in this program achieved better results in terms of improvement of symptoms and social functioning, as well as a low degree of acute exacerbation, and 40% were discharged from organized hostel type housing in order to live more independently. This study suggests that multi-centred controlled studies of complex psychosocial intervenetions in routine rehabilitation settings are challenging, but feasible. The study suggests that a structured approach to the assessment of rehabilitation needs, with specific goal setting and accountability to motivate workers to follow through with rehabilitation plans may encourage the application of evidence-based treatment approaches, and lead to improved social and clinical outcomes.

An international study (Falloon et al. 2004) has investigated the efficacy of rehabilitation programs that used the following methods: optimal antipsychotic treatment, education of patients and family members on strategies for coping with stress, assertive case management, social skills training and specific pharmacological and/or psychological strategies for special problems such as constantly present psychotic symptoms, negative symptoms, anxiety, anger, insomnia and others. This study found that, after 24 months, the majority of involved individuals who had been diagnosed with schizophrenia recovered.

A study in Croatia (Štrkalj-Ivezic et al. 2009) of a structured rehabilitation program that included an individual plan of rehabilitation, social skills training, psychoeducation of patients and family members and case management, showed the statistically significant influence of psychosocial methods on the quality of life and self-esteem.

Since the World Health Organization (WHO 2005) encourages the development of effective treatment programs for patients with mental disorders in the community, and considering the fact that there is a small number of evaluated outpatient rehabilitation programs being carried out in the day centre, and that existing evidence of efficacy of psychosocial methods are missing, we considered that the present study would be a significant contribution to the study of effective day center rehabilitation programs.

The study aims to evaluate the rehabilitation day centre program (RDC), i.e. to examine whether the patients suffering from schizophrenia involved in the RDC differ on the scales of social functioning, quality of life and self-esteem compared with a control group undergoing standard treatment which includes a visit to the psychiatrist on a monthly basis and medication.

METHODS

Sample

We performed a controlled evaluation study on the efficacy of a protocol based rehabilitation day program. The patients included in the experimental (N=50) and the control group (N=48) had been diagnosed with schizophrenia at least five years earlier. The diagnosis was confirmed by the psychiatrist before entering the rehabilitation program according to ICD 10 classification criteria.

The patients from the experimental group were treated within the RDC for a period of 6 months. The control group consisted of patients who were on the waiting list – they had been advised to be included in rehabilitation but had not been included due to a lack of place for rehabilitation. Both groups were also included in the standard treatment, which consisted of monthly visits to a psychiatrist and medication. The experimental and the control group were homogeneous by gender, age, education, employment and marital status. The basic demographic parameters of the subjects included 24 males in the experimental group and 27 males in the control group. The average age was 39,6 in the experimental group and 39,9 in the control group. Forty-three participants in the experimental group and 42 in the control group had a high school degree. There were 48 married and 2 single persons in the experimental group and 39 married and 9 single persons in the control group. In the experimental group 10 had a disability pension and 40 use the financial benefits from social care compared with 12 with a disability pension and 36 users of financial benefits from social care in the control group.

All patients in the experimental group were included in the same rehabilitation program which included the following psychosocial methods: social and life skills

training, relapse prevention program with psycho-education for patients and family, strategies for coping with stress, occupational therapy and participation in a therapeutic community. The program was conducted by a multidisciplinary team, which consisted of an occupational therapist, a social worker and a psychiatrist. The team underwent one week joint training before the program started. Continuous supervision was available on an everyday basis and as needed. No major change in psychopharmacological treatment was planned for patients in either group during the study period.

Inform consent has obtain form all patients participated in the study. Full ethical approval was obtained from Ethical committee of School of Social Work University of Zagreb.

Measures

Within the scope of study, we have applied the Manchester scale (MANSA) for measuring the quality of life, one of the most widely used instruments for assessing the quality of life of people suffering from schizophrenia in Europe (19). MANSA is a highly reliable instrument with Cronbach reliability coefficient α=0.74 and in this research α=0.842.

For measuring self-esteem we have applied the Rosenberg self-esteem scale (20) , which is widely used for assessing self-esteem and has been applied within the Croatian population before, and which proved to be a highly reliable measuring instrument α=0.81-0.84. (21). In this research α=0.801. For the assessment of social functioning we used Occupational Self-Assessment (OSA) (22). OSA was designed to show the importance of areas of functioning and to help the client identify priorities related to the change in their activities and encourage participation in setting treatment goals and strategies. In this research Cronbach reliability coefficient α=0.907.

Measuring of the quality of life, social functioning and self-esteem was conducted before joining the program, and after 6 months for the experimental and control groups. Measures were carried out by an independent assessor not included in the rehabilitation program.

Statistical methods

To determine whether there are statistically significant differences in the scores of the scales “before” and “after” rehabilitation, and to what extent these results are influenced by the very program of rehabilitation, we conducted several statistical tests. To determine whether there are statistically significant differences in scores on the scales OSA, MANSA and Rosenberg between the experimental group treated in the rehabilitation centre and the control group on the waiting list “before” the start of rehabilitation program we conducted the independent samples t-test.

In response to the assessment of achieved progress in terms of social functioning, quality of life and self-esteem in the group of patients who attended the rehabilitation program compared to the control group, the paired samples t-test was carried out. In terms of determining whether there is a difference in social functioning, quality of life and self-esteem with regard to the demographic characteristics of the patients (age, gender, education and marital status) and to compare social functioning, quality of life and self-esteem of people before and after the rehabilitation program, we used a simple analysis of variance with repeated measurements.

Table 1. Means and standard deviation on the OSA, MANSA and Rosenberg scales before and after the rehabilitation program

Descriptive data on the OSA, MANSA and Rosenberg scales before and after the rehabilitation program	Group	Situation	N	Arith. mean	Stand. error of the arith. mean	Stand. deviation	Minimum	Maximum
OSA – Occupational Self-Assessment Scale	E	before	50	41.6	1.45	10.24	22	65
		after	50	48.42	1.22	8.65	30	66
	K	before	48	38.9	1.03	7.15	26	52
		after	48	35.40	0.84	5.82	23	49
MANSA – Subjective Assessment of Quality of Life Scale	E	before	50	47.62	1.40	9.93	16	67
		after	50	55.50	1.06	7.52	42	81
	K	before	48	48.31	1.77	12.25	20	74
		after	48	43.15	1.49	10.32	22	60
Rosenberg - Self-Esteem Assessment Scale	E	before	50	19.16	0.63	4.46	11	30
		after	50	14.38	0.49	3.46	10	25
	K	before	48	18.50	0.56	3.89	11	28
		after	48	22.25	0.44	3.02	17	30

E - Experimental group, attending rehabilitation program; K - Control group, not attending rehabilitation program

RESULTS

The 98 participants (50 from the experimental group and 48 from the control group) were included in the evaluation study of the efficacy of a rehabilitation day program for person with schizophrenia and schizo-affective disorders. Means and standard deviation on the OSA, Mansa and Rosenberg scales before and after the rehabilitation program for experimental and control group are showed in table 1. Table 1 and figure 1 show that the experimental group after RDC in comparison with the control group treated by standard treatment (medications and once a month psychiatric examination) shows an improvement in social functioning, quality of life and self esteem. The trend in the control group was a worsening of social functioning, quality of life and self esteem in comparison with the first measurement.

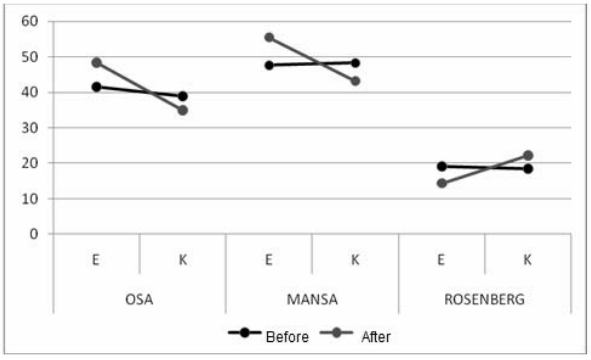

Figure 1. The results on OSA, MANSA i Rosenberg for the experimental and the control group in the situation before and after the rehabilitation program

At the beginning of the research, before the entering the RDC there was no statistical difference between the experimental and control group related to social functioning OSA - (t=1.56, df=96, p=0.49), quality of life MANSA - (t=0.31, df=96, p=0.99) and self esteem Rosenberg - (t=0.82, df=96, p=0.88).

Checking the progress achieved in the field of social functioning, quality of life and self-esteem in a group of patients who attended the rehabilitation program compared to the group that did not attend the program was conducted a simple analysis of variance with repeated measurements. Attending the program resulted in the experimental group having statistically better results than the control group in social functioning OSA ($F(1,96)=33.7$; $p<0.001$), quality of life MANSA ($F(1,96)=69.3$; $p<0.001$) and self-esteem-Rosenberg ($F(1,96)=84.5$; $p<0.001$).

Further, we conducted paired samples t-test in the experimental group to find out whether social functionning, quality of life and self-esteem of persons before and after the rehabilitation program differed.

Results show that attending the RDC produces a statistically significant improvement of social functionning (t=-4.32; df=49, p<0.01), quality of life (t=-5.8; df=49; p<0.01) and self esteem (t=6.9; df=49; p<0.01), on the other hand the control group which in the meanwhile had no such additional treatment showed a statistically significant decrease in the results for social functioning OSA (t=4.59; df=47; p<0.001, quality of life MANSA (t=6.86; df=47; p<0.001) and self-esteem Rosenberg (t=6.11; df=47; p<0.001).

In order to determine the influence of demographic characteristics on social functioning, quality of life and self-esteem an analysis of variance of the experimental group was conducted on the scales before and after the rehabilitation program with regard to gender, age, marital status and education. Age was not confirmed as a factor that statistically significantly affects the results of rehabilitation on all scales OSA ($F(1,48)=2.28$; $p<0.12$), MANSA ($F(1,48)=0.17$; $p<0.85$) Rosenberg ($F(1,48)=0.79$; $p<0.47$), as well as marital status OSA – ($F(1,48)=0.86$; $p<0.36$), MANSA - ($F(1,48)=0.59$; $p<0.45$), Rosenberg - ($F(1,48)=0.33$; $p<0.95$) and education OSA ($F(1,48)=0.72$; $p<0.41$),MANSA - ($F(1,48)=0.03$; $p<0.88$) Rosenberg - ($F(1,48)=0.14$; $p<0.72$). Gender has not been confirmed as a factor that significantly affects the results on social functioning (OSA - ($F(1,48)=1.35$; $p<0.26$), quality of life MANSA - ($F(1,48)=0.12$; $p<0.73$), but results of the Rosenberg scale for female patients showed a greater range of improvement, however this is due to the fact that the female subjects had a slightly higher (worse) results from the beginning. Rosenberg - ($F(1,48)=6.47$; $p<0.02$). This improvement is presented in Figure 2.

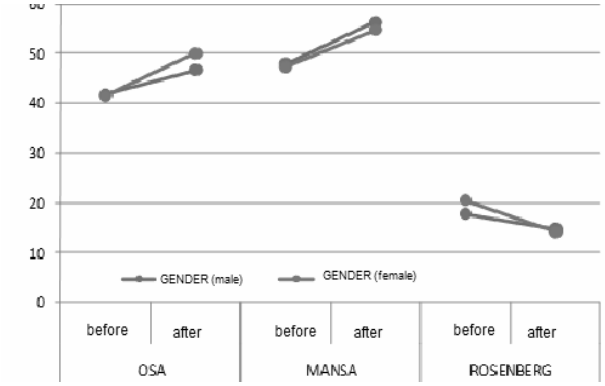

Figure 2. The results on OSA, MANSA and Rosenberg with regard to the gender

Gender was not confirmed as a factor that statistically significantly affects the results of rehabilitation on all scales: OSA - ($F(1,48)=1.35$; $p<0.26$), MANSA - ($F(1,48)=0.12$; $p<0.73$) Rosenberg - ($F(1,48)=6.47$; $p<0.02$).

DISCUSSION

The study examined the efficacy of protocol base rehabilitation programs for patients who have been diagnosed with schizophrenia. The rehabilitation program combines various psychosocial interventions such as social and life skills training, relapse prevention

program, family psychoeducation, occupational therapy and participation in a therapeutic community. The results show that the patients who attend the rehabilitation program achieve better results in social functioning, quality of life and self-esteem compared to the group that does not attend the program.

The results of our research on the efficacy of the rehabilitation day centre program are in line with research conducted by Falloon (2004), which determined that we can expect better results with the psychosocial evidence based interventions such as relapse prevention and social skills training as used in this study. The results of our research are also consistent with research of the rehabilitation program (VADO), conducted based on a structured protocol that is most similar to our study (Pioli et al. 2006) and where the stress vulnerability model, individual treatment planning, social skills training, early relapse signs, strategies for coping with stress and increasing adherence to medication were used. The results can also be compared with the results of the Community rehabilitation center of the Psychiatric Hospital Vrapce (Strkalj-Ivezic et al. 2009), which used a similar program with the exception that the patients had a case manager. The results presented in this paper are also consistent with the results of randomized controlled trials that confirmed that the participation in psychosocial programs with regard to the education about the disease, relapse prevention program and training skills to cope with the disease, leads to better results (Faloon et al. 2004) as well as with other research which confirmed the efficacy of psychosocial interventions (Pan et al. 2011) and the guidelines of WHO (2005) for effective mental health service in the community.

The results of research on the impact of demographic characteristics on social functioning, quality of life and self-esteem in our study did not show a significant correlation in relation to age, education, marital status and gender, except for self esteem for the female participants. It is important to note that a very small number of the patients were married, which is one of the limiting factors of the study. Also, the majority of the respondents had secondary education, so the connection between social functioning and quality of life with higher level of education could not be assessed. The gender was the only factor affecting significantly self-esteem, although it is important to note the statistically significant effect on the Rosenberg scale, which was due to the females patients showing a greater range of improvement (Figure 2).

The RDC in this study has proven to be effective for the social outcome of treatment and self esteem, which is inconsistent with the results of day centres performance analysis conducted by WHO (Marshal 2005) and to Cohrane reviews (Marshal et al. 2001, Shek et al. 2009) that determined that evidence on the effectiveness of day centres is still insufficient. Compared with the program of the centres studied, our program and the programs of similar studies with which we can compare was structured consisted of evidence base psychosocial methods administered by trained staff. We suggest that it is important to carefully identify and choose the psychosocial methods which should be included in the program to lead to recovery. Once the methods are chosen, it appears to us that fidelity to the program and thus the full implementation of the whole program with all its components by qualified and motivated staff is of the utmost importance in achieving the required outcomes. This may often not happen in practice, hence regular audit of the processes carried out by the RDC with adequate staffing levels to account for leave and sickness, so that every patient receives every appropriate evidence based intervention is managerially of great importance in achieving the expected outcomes. This audit will necessitate the measurement of the same outcome measures using instruments such as MANSA, OSA and Rosenberg for each patient in the same way as was done during the study which we have presented. This clearly also requires the adequate ongoing funding of the service.

Limitations of the study were associated with the exclusion of other factors that may affect the outcome of treatment, such as the relationship between patient and therapist, severity of symptoms, cooperation in terms of medication adherence, premorbid functioning, duration of untreated psychotic processes, insight into illness, the impact of stress and cultural factors and sustainability of changes, which should be taken into account in case of repeated study.

CONCLUSION

Research confirmed that the structure protocol based rehabilitation program in the day center consisting of a mixture of evidence based psychosocial interventions significantly contributes to the more favourable outcome of treatment by improving social functioning, self-confidence and quality of life of persons with schizophrenia. The study suggests that a structured rehabilitation program may encourage the application of evidence-based psychosocial treatment, and lead to improved social outcomes. We encourage the other researchers and practitioners to apply the evidence base psychosocial methods in everyday practice.

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Correspondence:
Prof. dr. sc. Slađana Štrkalj-Ivezić
University Hospital Vrapče
Bolnička cesta 32, 10000 Zagreb, Croatia
E-mail: sladjana.strkalj-ivezic@zg.t-com.hr