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Social functioning and support of addicts on methadone

Research Article

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Abstract: The study aimed to determine characteristics of addicts on methadone maintenance therapy (MMT), which are related to the level of social functioning, with emphasis on the role of social support. In a prospective study, opiate addicts (n=150) who were on MMT completed the Pompidou questionnaire, the Social Adaptation Self-evaluation Scale (SASS) and the Multidimensional Scale of Perceived Social Support (MSPSS). Statistical data processing was based on testing the difference between features that best distinguish subgroups of addicts who were dissatisfied, moderately satisfied and satisfied with their social functioning.
Opiate addicts up to 30 years of age had a statistically higher score on SASS scale than addicts over 30; addicts who are dissatisfied are mainly unemployed and have average or above-average family/community financial status; opiate addicts who were moderately satisfied with their social functioning were three years or longer on MMT; paradoxically, the highest mean value of score on MSPSS scale dominated among addicts who are dissatisfied with their social functioning. These results indicate that age, employment, financial status, duration of MMT are the characteristics of addicts which are related to the level of social functioning. Social support is most perceived by addicts who are dissatisfied with their social functioning.

Keywords: *Methadone • Social Adjustment • Social Support*

1. Introduction

Methadone maintenance treatment (MMT) as the most common form of substitution treatment of addiction is at the same time the most evaluated treatment worldwide [1-4]. Evaluation of successfulness of the treatment was primarily reflected in reduced rate of recurrence [2], crime [5] as well as through reduced drug-related morbidity [6,7] and mortality [8].

However, since the nineties more and more researches have been directed towards the study of the quality of life [9,10], i.e. the way addicts perceive their current health status and the way that reflects on their daily lives [11]. Examining Health-related quality of life (HRQoL) of addicts on methadone treatment, some studies have established an inverse association between HRQoL and age [12,13]. The results of other studies concerning the relationship between the addict's gender and HRQoL are largely inconsistent [12,14,15]. The influence of the severity of the clinical presentation of addiction on HRQoL remains unexplained [12,16]. It is believed that social support has the positive impact on HRQoL [17].

However, unlike HRQoL, which reflects the impact of the addict's health status on the quality of life [10], the results of a qualitative study on the Quality of Life (QoL) indicate that the central component of the quality of life seems to be the social inclusion of addicts [18]. Gearing and Schweitzer [19] found that the percentage of addicts who are socially productive (employment, school

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attendance or homemaker) increased from 36% to 76%, two years after starting MMT. On the other hand, a research in Lithuania, assessing the QoL of addicts 6 months after starting the methadone treatment, found significant improvement in the physical, psychological and environmental components of quality of life, but not in the social component of the QoL [9]. What are the factors that enhance or influence the social component of QoL of addicts on methadone is a question that only a small number of studies deal with [10], and which still remains under-explored.

The study aimed to determine characteristics of addicts on MMT, which are related to the level of social functioning, with emphasis on the role of social support.

2. Subjects and methods

2.1. Subjects

A prospective study included 150 addicts who were in MMT programme at the Center for the Extended Treatment of Addicts, Institute of Psychiatry at the Clinical Center of Vojvodina.

The sample consisted of 78.7% men, 21.3% women and the mean age was 31.84 years. Regarding education, 20.8% of the subjects completed elementary school, 58.4% finished high school while 20.8% attended college or university. 19.3% of the addicts on MMT were married, and the rest (80.7%) were either divorced or living with a common-law partner. Regarding parenthood and employment, approximately one-quarter of the subjects (24.7%) had children while 33.8% had a job. 96.7% reported that they lived in a family/community with below-average financial status. Regarding the duration of drug addiction prior to methadone treatment, 32.6% of the drug addicts had been using drugs for less than 5 years compared to 67.4% of addicts whose duration of addiction was 5 years long or more. In relation to the duration of methadone treatment programme, 26.6% were treated for less than 3 years and 73.4% of addicts for over 3 years. The main substance of the opiate addiction was heroin in 78% of patients. For most addicts (76.0%) this treatment with methadone was their first substitution treatment. In this sample 43.9% of the addicts said they were hepatitis C positive, whereas only 3.4% of them said they were hepatitis B positive.

2.2. Methods

Basic socio-demographic characteristics (age, gender, financial status, employment status, level of education, marital status and parenthood (if the subjects have children) and clinical determinants of opiate addiction (duration of addiction before treatment with methadone, the main substance of opiate addiction, presence of hepatitis, duration of methadone treatment) were obtained using a shortened version of Pompidou questionnaire [20].

The selection of the subjects was based on the following criteria:

- MMT programme should last at least one year;
- they do not suffer from any other mental disorder;
-they are aged between 25 and 45 years;
- they are not insufficiently mentally developed.

In order to determine the level of social functioning, a Social Adaptation Self-Evaluation Scale-(SASS) was used [21]. SASS is a scale that can be completed in 5 to 10 minutes. It consists of 21 items and four answer options to each item that are scored from 0 to 3 points. This scale examines the behavior and subjective perceptions, including satisfaction, personal perception and motivation to participate and keep in touch with family and friends, satisfaction with job, house and leisure activities and intellectual interest. The scale was tested on 3000 subjects of the general population and in more clinical studies it proved sensitive to changes. The range of values in healthy population was between 35 and 52 points.

For the purpose of this study, the scale was modified in terms of answer options and thereby range of possible values. Namely, to these 21 items, the subjects could answer with: dissatisfied (0 points), partially satisfied (1 point) or satisfied (2 points). In accordance with such scoring system, the highest possible score for the given 21 items was 40, as the first question could be answered with YES or NO and was not scored. In order to reach the range of values of such modified scale which would be considered normal, the ratio was set between the maximum number of points of the original scale (60 points) and the modified scale (40 points) on the one hand, and the highest value (52 points) of the normal range in healthy population on the other. Similar was also done in order to calculate the least value of the normal range. The obtained normal range of the modified Social Adaptation Self-Evaluation Scale was between 24 and 35 points. Based on the number of points won on the Social Adaptation Self-Evaluation Scale, for the needs of this survey, the respondents were divided into three groups:

- addicts on MMT dissatisfied with social functioning (0-11 points)
- addicts on MMT moderately satisfied with social functioning (12-23 points)
- addicts on MMT highly satisfied with social functioning (24-35 points).

Points that were used to divide the respondents into the above subgroups were obtained using a proportional formula in relation to the modified normal range (24-35 points). Within the formed subgroups, data on the given sociodemographic and clinical characteristics of the respondents were statistically analyzed and compared.

To assess the degree of perceived social support, Multidimensional Scale of Perceived Social Support – MSPSS was used. It consists of 12 items divided into three groups of factors of social support, i.e. three subscales - support from family members, support from friends and support from significant others. Instead of the original seven-level scale of possible answers, a five-level scale of possible answers was offered (scored from 1 to 5 points) [22].

The value of internal reliability in the original version of the scale expressed through Cronbach's α, was 0.88, while test-retest reliability was 0.85. Also, in the same version, test-retest reliability for each of the three subscales was 0.72 for the subscale of support from significant others, 0.85 for the subscale of support from family and 0.75 for the subscale of support from friends. Given that the scale measures the extent to which a person perceives that their needs for support are met by family, friends and by significant others, higher scores on the subscales examined were interpreted as a higher level of support.

Pompidou questionnaire was completed by a doctor who obtained data during the interviews with addicts on their first appearance at the Centre, which was a part of the regular protocol of the Center. On arrival at the Centre for prolonged treatment for addiction treatment, subjects were informed of all aspects of the study and after verbal consent, they filled out the questionnaires offered. The study was conducted respecting the requirements of the ethics of studying patients and approved by the Teaching Scientific Council of the University of Novi Sad, School of Medicine (No. 05-14/5-2007).

2.3. Statistical methods

Statistical data analysis was based on testing the differences between the characteristics (socio-demographic characteristics, clinical determinants of the underlying disease and level of social support) that best distinguish the aforementioned sub-groups (Student t-test, ANOVA) and Non-parametric tests (chi-square test). Statistical package SPSS (version 11.0) and Microsoft Office Excel 2003 were used.

3. Results

In relation to the number of points won on SASS scale, 21.3% of the respondents belonged to the group of addicts who are satisfied with their social functioning, 58.7% of the respondents belonged to the group of the moderately satisfied and 20.0% of the addicts belonged to the group of those who are dissatisfied with their social functioning (Table 1).

Results of statistical comparison of sociodemographic characteristics between the three subgroups of addicts (Table 2) indicate that the respondents under 30 years of age constituted a higher percentage in the group of addicts who are satisfied with their social functioning (χ^2=12,160, p<0,01) compared to the patients over 30 years of age; respondents who belong to the group of addicts who are dissatisfied with their social functioning are mainly unemployed (χ^2=15,220, p<0,01); the greatest percentage of those with college or university education are among the addicts dissatisfied with their social functioning (χ^2=9,795, p<0,05); the highest percentage of those who are married as well as those with children are in the subgroup of addicts who are moderately satisfied with their social functioning (χ^2=23,436, p<0,01 and χ^2=8,313, p<0,01); average and above-average financial status of families with statistical significance of p<0,01 (χ^2=9,975) is more common in those who belong to the group of addicts who are dissatisfied with their social functioning.

Statistical comparison of clinical determinants (χ2-test) between the three groups of addicts (Table 3) showed that there is a significant difference in terms of one feature only - length of the treatment programme. Specifically, among the addicts who are moderately satisfied with their personal social functioning with statistical significance (p=0,000 (χ^2=65,145) are mostly addicts who were on methadone treatment programme for three years or longer, while among addicts who are dissatisfied with their personal social functioning are mostly those who were on methadone maintenance programme for less than 3 years.

Table 1. Number of addicts in relation to the level of social functioning

Level of social functioning	N	%
Satisfied	32	21.30
Moderately satisfied	88	58.70
Dissatisfied	30	20.00
Total	150	100.00

N - number of participants
% - Percentage

Table 2. Socio-demographic characteristics of the patients under methadone maintenance treatment and the level of social functioning

	Satisfied	Moderately satisfied	Dissatisfied	p Value / Chi (χ^2)
Sex	**%**	**%**	**%**	**p>0.05**
Male	87.5	75.0	80.0	2.225
Female	12.5	25.0	20.0	
Age				**p<0.01**
Average age of				
to 30 years of age	81.30	46.60	46.70	12.160
over 30 years of age	18.70	53.40	53.30	
Education				**p<0.05**
Elementary school	28.10	21.80	10.00	
High school	56.30	62.10	50.00	9.795
College or University	15.60	16.10	40.00	
Marital status				**p<0.01**
Married	12.50	28.40	3.31	
Divorced / Common-law	87.5	71.6	96.69	23.436
Parenthood				**p<0.01**
Have children	9.40	33.09	16.70	8.313
No children	90.60	67.00	83.30	
Employment				**p<0.01**
Has a job	48.40	38.60	3.60	15.220
No job	51.60	61.40	96.40	
Financial status of family/community				p<0.01
Average / Above-average	60.00	59.10	90.00	9.975
Below-average	40.00	40.90	10.00	

% - Percentage
p Value - statistical significance
χ^2 - Chi square

Table 3. Clinical characteristics of the underlying disease in relation to the degree of social functioning of the addicts

	Satisfied	Moderately satisfied	Dissatisfied	Chi (χ^2)	P Value
Duration of addiction before MMT	**%**	**%**	**%**		
Up to 5 years	48.4	31.3	20.0	0.280	0.869
Over 5 years	51.6	68.7	80.0		
Period of treatment with methadone					
Up to 3 years	21.9	7.4	83.3	65.145	0.000
3 or more years	78.1	92.6	16.7		
Basic opiate substance in abuse through the period of addiction					
Poppy tea	18.8	20.5	13.3		
Heroin	78.1	76.1	83.4	0.762	0.943
Opium	3.1	3.4	3.3		
Previously treated with methadone					
Yes	20.7	19.5	40.0	5.338	0.069
No	79.3	80.5	60.0		
Hepatitis B					
Test negative	75.0	67.4	80.0		
Test positive	0.0%	4.7	3.3	-	-
Not tested	25.0%	27.9	16.7		
Hepatitis C					
Test negative	40.6	29.1	50.0		
Test positive	43.8	46.5	36.7	5.259	0.262
Not tested	15.6	24.4	13.3		

- Statistical significance could not be established.
% - Percentage
p Value - statistical significance
χ^2 - Chi square

The mean value of the scores achieved on subscales and the total MSPSS scale by the addicts from the studied subgroups is shown in Table 4. The results show that addicts dissatisfied with their social functioning, compared to the other two subgroups of addicts (moderately satisfied and satisfied), achieved the highest scores on the subscale of support from significant others (MSPSS significant others mean score =16.47±4:02 vs. 14.64±4.16 and 13.91±3.80, respectively), support from family subscale (MSPSS family mean score =18.50±3.84 vs. 15.48±5.29 and 16.94±3.31, respectively), and support from friends subscale (MSPSS friends mean score =14.97±4:34 vs. 13.32±4.61 and 11.31±5.47, respectively). Analysis of variance shows that there are statistically significant differences in the scores achieved on the aforementioned subscales among the three subgroups of addicts studied. Specifically, addicts dissatisfied with their social functioning perceive statistically significantly more support from significant others (p = 0.037, F=3.360), as well as support from family (p = 0.008, F=4.957), and friends (p = 0.011, F=4.608) than the addicts who are moderately satisfied and satisfied with their social functioning.

In relation to the total score on MSPSS scale, addicts dissatisfied with their social functioning also stood out with the highest score compared with the addicts who are moderately satisfied and satisfied with their personal social functioning (MSPSS total mean score =49.93±10.53 vs. 43.43±10.57 and 42.16±5.47, respectively). In ANOVA statistical model, this difference in scores proved statistically significant (p=0.005,

Table 4. The mean score values of the subscales and the total MSPSS comparing the observed subgroups of opiate addicts

Support from significant others	**x̄**	**SD**	**F**	**p Value**
Satisfied	13,91	3,80		
Moderately satisfied	14,64	4,16	3,360	0,037
Dissatisfied	16,47	4,02		
Support from family	**x̄**	**SD**	**F**	**p Value**
Satisfied	16,94	3,31		
Moderately satisfied	15,48	5,29	4,957	0,008
Dissatisfied	18,50	3,84		
Support from friends	**x̄**	**SD**	**F**	**p Value**
Satisfied	11,31	5,47		
Moderately satisfied	13,32	4,61	4,608	0,011
Dissatisfied	14,97	4,34		
Total social support	**x̄**	**SD**	**F**	**p Value**
Satisfied	42,16	9,552		
Moderately satisfied	43,43	10,570	5,416	0,005
Dissatisfied	*49,93*	*10,531*		

x̄ -Average value
SD - Standard deviation
F - Fischer value
p Value - statistical significance

F=5.416), implying that addicts who are dissatisfied with their social functioning perceive the overall social support to the greatest extent.

4. Discussion

Results of the study indicate that one-fifth of addicts on methadone treatment programme continues to feel dissatisfied as per social functioning. Other researches with a different methodological approach indicate that in all addicts on MMT programme can be seen improvement in social functioning [23-25].

In terms of socio-demographic characteristics of addicts on methadone treatment, those who are under 30 years of age are satisfied with their social adaptation, whereas addicts who do not have a job, have a college or university education or live in the area with above-average financial status are dissatisfied. In the available literature, an addict's level of education is given as a good or positive predictor of outcome [26]. Although in this study the high level of education gives the picture of a negative factor, the explanation can be found in the possibility that the highly educated are unemployed, which implies that the factor of unemployment leads to dissatisfaction with social adaptation. High proportion of unemployment among addicts who are on methadone maintenance is also mentioned by other authors [27] as well as its impact on the poorer outcome of the treatment itself [28]. Unexpectedly, above-average financial status of the family/area addicts live in showed as a factor that does not contribute to a high level of satisfaction with social functioning. Although this is at odds with most other studies [29,30], it is possible that the families of addicts expected from them to get a job after starting the methadone treatment, and thus contribute to the current financial situation. Provided that addicts cannot meet these expectations of the family, it is possible that the sense of dissatisfaction increases for that reason.

In an attempt to explain the degree of social functioning more closely with one of the clinical determinants of the underlying disease, the results of this study, with statistical significance, indicated the fact that addicts who are dissatisfied with their social functioning were on MMT for less than 3 years, i.e. between one and three years. On the other hand, after three or more years of treatment with methadone, most addicts perceive themselves as moderately satisfied with their social adaptation. Similar results were obtained by a study of some authors, pointing out the fact that although the characteristics of addicts before starting the treatment are bad predictors, patients who spend more time on MMT achieve a better outcome [31,32]. Considering that the results suggest duration of addiction as a clinical determinant of the underlying disease which is not significantly associated with the addict's level of social functioning whereas the length of methadone treatment is, in the future we may consider the possibility of an earlier commencement of the substitution treatment of addicts.

To what extent addicts perceive family or friends as an aid in social functioning has been indicated, in the last decade, by an increasing number of studies conducted by researchers and practitioners focusing on examining the role of social support in treating addiction [33]. Researches oriented towards examining the role of social support received by addicts under treatment with methadone, usually indicate its positive correlation with the longer duration of the programme and success in terms of treatment results [34-37]. Literature on addiction also suggests that positive social support is associated both with reduced risk in terms of recurrence and a better overall therapeutic response [38-44]. There is also a large number of studies that observed methadone therapy outcome (as measured through health, crime and employment) in relation to the impact of the social surrounding (parents and friends). Their findings indicate mainly the positive correlation, i.e. the better

social support, the better the outcome of the treatment [45-49]. Contrary to the above mentioned, the results of this study with a significant difference highlight that addicts who are dissatisfied with their social functioning have at the same time the highest social support from family, friends and significant others. A research conducted in China, albeit with a different methodological approach, states results similar to ours. It examined addicts on methadone during the first 3 months of treatment. Subjects filled out a questionnaire on QoL after one day, 30th day and 90th day of the programme, and on its basis was conducted further analysis. It was found that addicts improved their relations with the family and that they had better social support as observed in the period from the first to the 30th day, but the trend of the improvement of relations and support was not continued in further analysis, i.e. it even slightly declined. The explanation was found in the lack of awareness of family members in terms of the efficiency of the treatment itself in relation to the rehabilitation of the addicts. Specifically, each recurrence or criminal behavior was seen as the failure of the treatment and were moving away from the addicts, which resulted in the lack of their support and worsening of the improved relations [50]. One of the possible explanations for the results of this study may be a stronger and better orientation of family, friends and significant others to enrich social life and increase the productive potential of addicts. However, as the majority of addicts, although treated with methadone, still bear the burden of acquired damage due to opiate use [51], it seems perfectly understandable that they feel resentful in circumstances which stimulate normal life topics (new responsibilities at work, or new social challenges), which may result in dissatisfaction at the personal level of functioning.

Some limitations of this study should be taken into consideration. Specifically, the sample size (n=150) was relatively small. Therefore, the obtained results cannot be generalized for all addicts on methadone treatment. Also, a limitation may be a risk in terms of accuracy of the collected data. The results are based on self-assessment, which can often be the product of socially desirable responding. Nevertheless, previous studies have shown that self-assessment generates enough valid data for this type of research [52]. The study design itself can also present one of the limitations of the study. Namely, the study is designed so that there is no control group. On the other hand, differences in the size of the groups compared could be one of the limitations of the study. Also, the causality of the variables studied could not be analysed.

Beside the limitation of the study, the results of this work indicate that one-fifth of addicts on methadone treatment programme are dissatisfied with their social functioning, more than a half of them are moderately satisfied while slightly more than one-fifth are satisfied. Age, level of education, employment, financial status of the family/area as well as duration of methadone treatment stood out as characteristics of addicts that help provide a better determination of the level of social functioning. Support from family, friends and significant others is most perceived by addicts who are dissatisfied with their social functioning.

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