



REHABILITATION – RESOURCE TO IMPROVE OCCUPATIONAL FUNCTIONING OF PATIENTS WITH MUSCULOSKELETAL SYSTEM DISEASES

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ABSTRACT

Rehabilitation uses widely differentiated range of diagnostic and therapeutic strategies and approaches, taking into consideration the diversity of diseases, psychological aspects and the individuality of patients, as well as their physical and occupational functioning.

THE PURPOSE of the present study was to analyse and evaluate the effect of rehabilitation on occupational functioning of patients with lumbar intervertebral disc damage with radiculopathy. **MATERIALS AND METHODS:** The present study was conducted in Specialized Hospitals for Rehabilitation - National complex EAD, branches Hissar and Banite. The study includes 77 patients aged from 35 to 65 years (mean age 57.98 ± 0.87 years). Questionnaire IRES-3 validated by the authors for Bulgarian population was used to rate the self-assessment of rehabilitation effect. Assessments were performed at the beginning, at the end and three months after rehabilitation. Data were analyzed with statistical software SPSS v.17.0. using descriptive statistics (results are presented as mean \pm SEM) and paired samples t-test. **RESULTS:** Self-assessment of occupational functioning of the patients includes the following scales: *conditions at the working place, occupation-related troubles and satisfaction with occupation*. We found statistically significant improvement of the subjective score at the end of rehabilitation for *occupation-related troubles scale* (mean score before RH 6.17 ± 0.18 v/s after RH 7.47 ± 0.25 and 3 months after RH 6.39 ± 0.18). **CONCLUSIONS:** Intended focusing on problems of professional and occupational reality, appropriate targeting of existing strategies and further development of diagnostic and therapeutic procedures (modules) should become a concept of each medical facility, which provides rehabilitation services.

Key words: rehabilitation, self-assessment, occupational functioning, chronic diseases

INTRODUCTION

Rehabilitation aims at aiding people with chronic diseases or disorders cope with the disease and its consequences. All rehabilitation efforts are directed at improvement of the quality of life of

the affected, their functional abilities in everyday life and profession.

In our society profession is an important element of identity. From a medico-social point of view there is a strong relation between health and profession. The period of employment is characterized with exposure to different influences which may impair the physical and mental health. In psychology different theoretical models and conceptions for

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explanation of the interaction between work, stress factors and health have been discussed (1). The changes in the working environment in the last few decades have led to increase in the work-load – increased requirements for qualification and flexibility, decrease in the possibility for making decisions and the space for action and last but not least - threat of unemployment. The psychosocial consequences of such loading may be an overload of individual abilities and hinder

The active occupational integration from the point of view of economics and the people involved is the most promising approach for a long-term and efficient positive influence on diseases, disorders and participation in working and social life. Quite often some insignificant changes on the working place such as a change in the working procedures, the use of appropriate aids or a change in the individual attitude may assist in implementing this goal (2, 3).

The purpose of the present study was to analyse and evaluate the effect of rehabilitation on occupational functioning of patients with lumbar intervertebral disc damage with radiculopathy.

MATERIALS AND METHODS

The present study was conducted in Specialized Hospital for Rehabilitation- National complex

EAD, branches Hissar and Banite. It includes 77 patients aged from 35 to 65 years (mean age 57.98 ± 0.87 years). Questionnaire IRES-3 validated by the authors for Bulgarian population was used for measuring the subjective evaluation of rehabilitation effect (4). The questionnaire was designed for self-assessment of the rehabilitation effect considering physical status, associated with patient's chronic complaints, as well as psychological, social, professional and functional aspects of his health (5, 6). In the present study measurements were performed at the beginning, at the end and three months after rehabilitation.

Data was analyzed using descriptive statistics, Friedman test, Wilcoxon signed ranks test, χ^2 test and paired samples t –test with SPSS v.17.0 statistical software. The results are presented as mean and standard error (mean \pm SEM). The level of significance was accepted at $P < 0.05$.

RESULTS AND DISCUSSION

Self-assessment of occupational functioning of the patients includes the following scales: *conditions at the working place, occupation-related troubles and satisfaction with occupation.*

The mean scores in the different measurement time point of these scales are presented in **Table 1**.

Table 1. Mean scores of Occupational functioningscales at the beginning, at the end and three months after rehabilitation

Measurement Scales	Beginning of RH	End of RH	3 months after RH	Friedman test	P
	mean \pm SE	mean \pm SE	mean \pm SE		
Conditions at the working place	2.14 \pm 0.10	-	2.23 \pm 0.10	0.676	0.411
Occupation-related troubles	2.84 \pm 0.11	3.00 \pm 0.10	3.00 \pm 0.10	4.543	0.103
Satisfaction with occupation	2.49 \pm 0.07	-	2.45 \pm 0.07	1.684	0.194

Conditions at the working place

This scale includes some of the conditions which exert the most unfavourable influence on health condition: ‘... extended working time; noise; hard physical labour; uncomfortable position or

body posture; constant standing; rapid pace of work and shortage of time; frequent impediments and interruptions; pressure for quick decisions; strict control on work results’. The patients answered: “To what extent do you

feel under pressure by the following circumstances?" with one of the options- *greatly, considerably, moderately, a little, not at all*- in the beginning of rehabilitation and after three months.

Despite the slight increase in the requirements of the working place we did not report a statistically significant difference in the results of the two periods of survey (Table 1).

Occupation-related troubles

The scale concerns four aspects with respect to occupation-related troubles which are pointed as supplements to the question: 'How often have you thought that due to your health condition in the future...

- a) you would earn less because, for instance, you have to reduce your working hours?
- b) you would become unemployed?
- c) you would not make progress in your work?
- d) you would retire untimely?"

The possible answers are presented in a five-rank scale (*regularly, often, occasionally, rarely, never*). For the greater part of the patients these aspects were not probably part of the incessant thoughts of the patients since the prevalent answers were *sometimes* (27.3%), *rarely* (20.8%), *never* (41.6%) in the beginning and end of the rehabilitation which did not alter statistically significantly three months later ($\chi^2 = 2.23$, $df=6$, $P=0.90$).

Satisfaction with occupation

In order to make an objective assessment of the satisfaction with occupation in the questionnaire we included different aspects which regard the influence of the occupational activity on the physical and psychic state of the patients.

"My occupation gives me pleasure.

I cope well with my work.

I feel under pressure at work.

I have the feeling that my work interferes with my health.

The requirements at work are too high.

I can fully reveal my talents and abilities.

There is a pleasant work atmosphere in my firm.

I receive adequate payment for my work."

The patients evaluated their satisfaction with occupation by the answers *fully, almost, to a certain extent, hardly, not at all*, presented in a five-rank scale in the beginning of rehabilitation and after three months.

In the beginning of rehabilitation complete satisfaction from their work experienced 39% from the patients surveyed, followed by 27.3% *almost* satisfied patients. For 22.1% satisfaction was *to a certain extent* and *hardly* satisfied 9.1%. For 2.6% the work was *not at all* satisfactory.

Three months later the percent of *fully* satisfied (38.4%) and *almost* satisfied 27.4% from work patients remained unchanged. We recorded a slight, though insignificant, rise of satisfied *to a certain extent* (30.1%) and reduction in *hardly* satisfied (4.1%) ($\chi^2 = 3.63$, $df=3$, $P=0.30$). None of the patients had marked the answer *not at all* satisfied.

The majority of patients marked that they cope *perfectly* with their work (66.2%), *almost* (28.6%) and *to some extent* (5.2%). After three months there was a slight rise without statistical significance for those who cope *perfectly* (71.2%) and a reduction of those who *almost* (26%) and *to some extent* (2.7%) cope with their work ($\chi^2 = 0.43$, $df=1$, $P=0.51$).

Fully and *almost* under pressure were, respectively, 28.6% and 16.9% of surveyed. The highest percent are *to a certain extent* under pressure (39%). 9.1% were *not at all* under pressure. Three months after rehabilitation, a statistically significant change did not occur in regards to the evaluation on workload ($\chi^2 = 0.84$, $df=4$, $P=0.93$).

Regarding the question '...whether work interferes with health', for 7.8% work interferes *fully, almost* for 3.9% and *to a certain extent* for 42.9%. For 26% of the patients participating in the questionnaire work *hardly* interferes, and 19.5% answered *not at all*. These values maintained relatively three months after rehabilitation was carried out ($\chi^2 = 5.20$, $df=4$, $P=0.26$).

In connection with the conditions at the working place for 36.4% of patients they were very *high*, for 23.4% *almost* and *to a certain extent* high for 28.6% at the beginning of rehabilitation. These values were without statistically significant difference three months after rehabilitation ($\chi^2 = 0.91$, $df=3$, $P=0.82$). At the beginning of rehabilitation 41.6% of patients indicated that they can *fully* reveal their talents and abilities which gives them even greater satisfaction from work. Answers *almost* and *to a certain extent* have given, respectively, 28.6% and 27.3% of

the patients questioned. In this indicator we do not also record a statistically significant alteration three months after rehabilitation ($\chi^2=4.65$, $df=3$, $P=0.19$).

The atmosphere at the working place may exert significant influence on the physical health as well as on the psychic state of every person. For 28.6% of the patients the atmosphere at the work place at the firm was *completely* pleasant, *almost* pleasant for 27.3% and pleasant *to a certain extent* for 26%. Answers *hardly* and *not at all* have been given by 10.4% and 7.8%, respectively. The values did not also change

statistically significantly three months after the conducted rehabilitation ($\chi^2=0.91$, $df=4$, $P=0.92$). The majority of patients defined their work payment as *not at all* (19.5%), *hardly* (18.2%), *to a certain extent* (20.8%) and *almost* (24.7%) adequate. Only 16.9% of the patients answered that they receive a fully adequate payment for their work which did not change three months after the rehabilitation ($\chi^2=1.85$, $df=4$, $P=0.74$).

General score of Occupational functioning dimension

In table 2 the results from the general score of **Occupational functioning dimension** are presented.

Table 2. General score of Occupational functioning dimension

Score Measurements	mean±SE (n=124)	Comparing periods	t-test	P
Beginning of RH(t ₀)	6.17±0.18	t ₀ - t ₁	6.37	0.0001
End of RH (t ₁) *	7.47±0.25	t ₀ - t ₂	1.60	0.114
3 months after RH (t ₂)	6.39±0.18	t ₁ - t ₂	6.77	0.0001

* At the end of rehabilitation only the sub dimension professional care is evaluated

In principle the indicated aspects have influence on the health condition of each person. In our study we found out that the results at the beginning of rehabilitation and three months later are not influenced statistically significantly by the rehabilitation process. In the comparison between the periods of measurement at the end of the rehabilitation we recorded a considerable improvement with respect to occupational care. We account for this with the fact that they are 'absent' during rehabilitation. Returning to everyday life is again a prerequisite for their occurrence.

We did not ascertain a statistically significant difference between men and women for the **Occupational functioning dimension**, in the beginning, end and three months after the conducted rehabilitation ($P>0.05$).

CONCLUSIONS

Rehabilitation does not dispose of a widely differentiated variety of diagnostic and therapeutic strategies and approaches whereupon it takes into consideration the variety of diseases, psychological aspects and individualities of the patients as well as their personal and occupational life.

A preliminary condition within the framework of the rehabilitation process is a strategy which is aimed at working capacity. The conscious focusing on the occupational and working reality, the appropriate guidance of the existing strategies and the further development of diagnostic and therapeutic modules should be a conception for every healthcare institution which provides rehabilitation services.

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