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SELF-RATED HEALTH STATUS AFTER REHABILITATION IN PATIENTS WITH LUMBAR INTERVERTEBRAL DISC DAMAGE WITH RADICULOPATHY

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ABSTRACT

A series of subjective self-report measures are useful in assessing physical abilities, pain, functional ability, psychosocial well-being, general health status, and quality of life in patients with low back pain.

PURPOSE: The purpose of the present study is to analyze and evaluate health status of patients with lumbar intervertebral disc damage with radiculopathy after rehabilitation using self-administered questionnaire.

MATERIALS AND METHODS: The study was conducted in Specialized hospital for rehabilitation - National complex EAD, branches Hissar and Banite. It includes 124 patients - 34 men (27.42 %) and 90 women (72.58%) , aged from 35 to 85 (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. Measurements were performed at the beginning, at the end and three months after rehabilitation (RH). Data were analyzed using descriptive statistics, Friedman test, Wilcoxon singned 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±SEM).

RESULTS: The subjective evaluation of patients physical health included the following scales: *self-rated health status; symptom: heart –blood circulation; symptom: locomotory apparatus; satisfaction with health status.* We found statistically significant better scores at the end and three months after rehabilitation compared to the beginning of rehabilitation for all scales. Exception makes only the scale *symptom: heart-blood circulation*. Total mean scores of self-rated health status at the beginning of RH is 5.36±0.17, at the end of RH is 5.98±0.16 and three months after RH is 5.80±0.16.

CONCLUSIONS: We found statistically significant improvement of the self-rated health status after performed rehabilitation in patients with lumbar intervertebral disc damage with radiculopathy.

Key words: rehabilitation, self-rated health status, chronic diseases

INTRODUCTION

Self-rated health status is a complex health measurement, concerning physical, social and emotional perception of individuals for their health. When assessing their health, the individuals evaluate the presence or absence of diseases, functional and everyday life activities limitations (1, 2).

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MATERIALS AND METHODS

The present study was conducted in Specialized hospital for rehabilitation- National complex EAD, branches Hissar and Banite. It includes 124 patients, 34 men (27.42%) and 90 women (72.58%), aged from 35 to 85 (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 (3). 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 (4, 5). In the present study measurements were performed at the beginning, at the end and three months after rehabilitation.

Data were analyzed using descriptive statistics, Friedman test, Wilcoxon singned 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±SEM). The level of significance was accepted at $P<0.05$.

RESULTS AND DISCUSSION

Somatic health domain evaluation was formed by the following scales: *self-assessment of health status, symptom: heart – blood circulation, symptom: locomotory apparatus* and *satisfaction with health status.* The mean scores in the different measurement time point of these scales are presented in **table 1.**

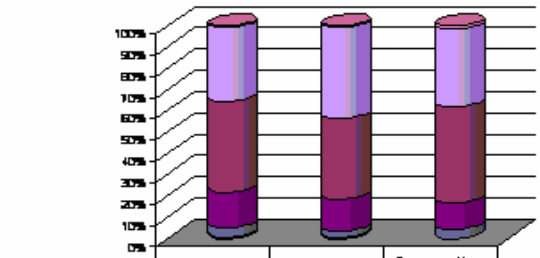
Table 1. *Mean scores of Somatic health scales at the beginning, at the end and three months after rehabilitation*

Measurement / Scales	Beginning of RH	End of RH	3months after RH	Friedman test	P
	mean±SE	mean±SE	mean±SE		
Self-assessment of health status	3.09±0.08	3.22±0.08	3.19±0.07	10.512	0.005
Symptom: heart – blood circulation	2.45±0.10	2.50±0.10	2.49±0.10	0.398	0.819
Symptom: locomotory apparatus	1.82±0.08	2.02±0.10	2.05±0.09	15.254	0.001
Satisfaction with health status	2.75±0.18	3.71±0.11	3.28±0.18	76.333	0.001

Self-assessment of the health status

Being asked the question "*How would you estimate your health status at the moment?"* the patients chose one out of six possible answers – *very good, good, satisfying, not so good, bad and very bad.*

At the moment of scoring before rehabilitation 35,5% of the responders estimated their present health condition as *good* and *very good* , 42,7% as *satisfying*, and 16,9% as *not so good*. 4,8% determined it even as *bad* and *very bad*. The measurement immediately after RH showed improvement in these assessments and this effect was preserved three months after rehabilitation (χ^2=11.75,df=6, P=0.06) **(fig. 1)**.



	Start RH	End RH	3 months after RH
very good	0,8	0,8	1,7
good	34,7	42,7	36,4
satisfying	42,7	37,9	45,5
not so good	16,9	15,3	12,4
bad	4	2,4	4,1
very bad	0,8	0,8	0

Fig. 1. Self-rated health status at the beginning, at the end and three months after rehabilitation

These results were confirmed by the rang analysis for comparing self-assessment of the health condition in the three measurement time point **(table 1).**

We found statistically significant improvement of the subjective score at the end of rehabilitation (Wilcoxon Signed Ranks Test=2.302, P=0.021). When analyzing self-assessment three months after rehabilitation we detected slight decrease compared to the measurement at the end of rehabilitation, which wasn't statistically significant (Wilcoxon Signed Ranks Test=0.693, P>0.05).

We didn't found statistically significant difference in self-assessment of health status between men and women and among different age groups at the beginning, at the end and three months after rehabilitation (P>0.05).

Symptom: heart-blood circulation

The participants were asked to describe what extent (*extremely, significantly, moderately, mildly, absent*) they experienced " …difficulties in breathing or chest pain during the following actions: climbing one flight of stairs with normal rate; walking up a slope or fast walking on flat area; climbing quickly over 3 flight of stairs and extreme physical activity for longer period".

The results didn't show statistically significant alteration in patients condition (table 1). These results could be explained by the fact, that the primary disease of the responders, requiring rehabilitation is lumbar intervertebral disk damage with radiculopathy.

Symptom: locomtory apparatus

The evaluation of scale symptom: locomotory apparatus was determined by the pain intensity, which the patients suffered: " while getting up after sitting for a long period; while bending, stretching and standing up for a long time; while walking for long time (about half an hour); while lifting or carrying heavy objects". The question "How intense muscle or joint pains have you experienced lately" had the following possible answers: *severe, significant, moderate, weak, absent*.

We found significant improvement of the status immediately after rehabilitation course and three months after rehabilitation again the results were significantly preserved **(table 1)**.

Health status satisfaction

Regarding the question "How satisfied were you from your health status?" at the beginning of rehabilitation the relative number of *moderately satisfied* patients was 21%, followed by *completely dissatisfied* – 20.2%. One of the main reasons is that most patients were admitted for rehabilitation in poor health condition, as some were experiencing constant pain.

At the end of rehabilitation the relative number of satisfied patients was significantly increased (χ^2=46.72, df=12, P=0.0001). There were no *completely dissatisfied* patients, despite their high percent (20.2%) at the beginning of rehabilitation **(fig. 2).**

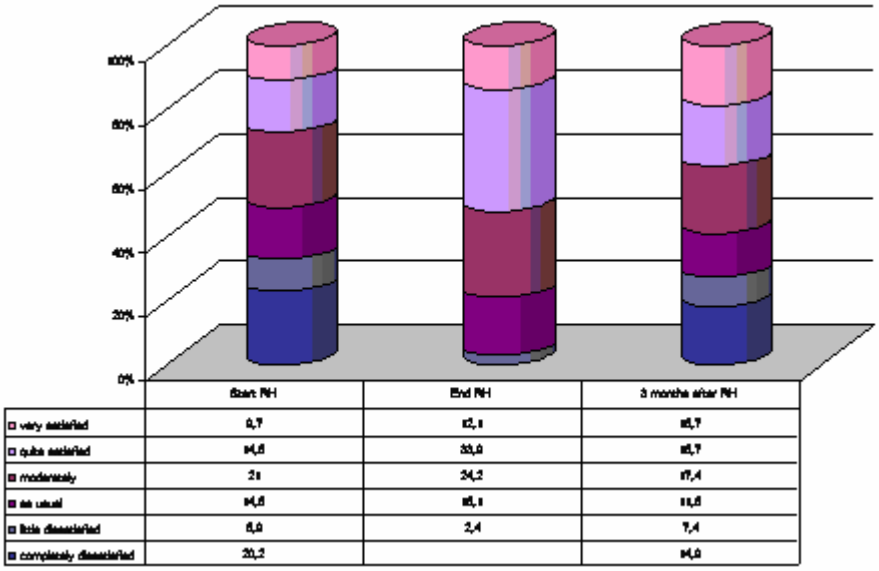


Fig. 2. Health status satisfaction at the beginning, at the end and three months after rehabilitation

Distribution of answers is concentrated on *moderately* (24.2%), *quite satisfied* (33.9%) *and very satisfied* (12.1%) patients.

Three months later results from the *completely dissatisfied* to *completely satisfied* were obtained again. We observed statistically significant difference compared to the end of rehabilitation (P<0.0001). However, we reported improved satisfaction rate compared to the beginning of rehabilitation.

At the beginning and at the end of rehabilitation the relative number of *completely satisfied* patients was preserved (11.3%) and increased up to 17.4% three months after rehabilitation.

The presented results were confirmed by rang analysis for comparing health status satisfaction during the three measurement time point **(table 1).**

The results analysis explicitly proves the positive effect of rehabilitation on somatic health. We observed significantly improved score at the end and three months after rehabilitation, compared to the beginning of rehabilitation **(table 2)**.

Table 2. *General score of Somatic health dimension*

Score / Measurements	mean±SE (n=124)	Comparing periods	t-test	P
Beginning of RH(t_0)	5.36±0.17	t_0 - t_1	8.37	0.0001
End of RH (t_1)	5.98±0.16	t_0 – t_2	4.35	0.0001
3 months after RH (t_2)	5.80±0.18	t_1 – t_2	2.33	0.022

This proves the permanent effect of rehabilitation regarding somatic health in patients with lumbar intervertebral disk damage with radiculopathy.

During our study we reported positive influence of rehabilitation for all scales of Somatic health dimension. Exception makes only the scale *symptom: heart-blood circulation*. Published results from similar studies also reported positive impact of rehabilitation in patients with chronic locomotory apparatus diseases (6-11).

CONCLUSIONS

Subjective assessment gives the patients an opportunity to take responsibility for their own health. The patients become active participants in the treatment and rehabilitation process. Subjective assessment influences favorably patient's motivation regarding the reduction of risk factors, associated with lifestyle and way of living; improving health culture; overcoming the disease etc. Studies of treatment satisfaction and rehabilitation success give the patients an opportunity to express their opinion regarding different aspects and thus to contribute to improving the quality of rehabilitation process.

REFERENCES

1. Idler, E., Benyamini, Y., Self-rated health and mortality: A review of twenty-seven community studies. J Health Soc Behav, 38(1): 21–37, 1997.
2. DeSalvo, KB., Bloser, N., Reynolds, K. et al., Mortality Prediction with a Single General Self-Rated Health Question. A Meta-Analysis. J Gen Intern Med, 21: 267– 275, 2006.
3. Bakova, D., Mateva, N., Reliability and Cross-cultural Validity of the Bulgarian Version of IRES-3. Folia Medica, 53(2): 51-56, 2011.
4. Bührlen, B., Gerdes, N., Jäckel, W.H., Etwicklung und psychometrische Testung eines Patientenfragebogens für die medizinische Rehabilitation (IRES – 3). Die Rehabilitation, 44:63-74, 2005.
5. Gerdes, N., Jäckel, W.H., Indikatoren des Reha-Status (IRES) – Ein Patientenfragebogen zur Beurteilung von Rehabilitationsbedürftigkeit und -erfolg. Die Rehabilitation, 31:73-79, 1992.
6. Keel, P., Wittig, R., Diethelm, U., Knüsel, O., Rudolf, T., Spring, H., Multizentrisches Interventionsprojekt zur funktionellen Wiederherstellung von Patienten mit lumbalen Rückenschmerzen durch ein integriertes, sportmedizinisch orientiertes Behandlungsprogramm.In P. Keel, C. Perini, D. Schütz-Petitjean (Hrsg.), Chronifizierung von Rückenschmerzen: Hintergründe,Auswege. Schlussbericht des

Nationalen Forschungsprogramms Nr. 26B. Basel: Eular, 1995.
7. Klenerman, L., Slade, P.D., Stanley, I.M., Pennie, B., Reilly, J.P., Atchinson, L.E., The Prediction of Chronicity in Patients With an Acute Attack of Low Back Pain in a General Practice Setting. Spine, 20: 478-484, 1995.
8. Hildebrandt, J., Pfingsten, M., Franz, C., Saur, P., Seeger, D., Das Göttinger Rücken-Intensiv-Programm (GRIP) - ein multimodales Behandlungsprogramm für Patienten mit chronischen Rückenschmerzen. Teil 1: Ergebnisse im Überblick. Der Schmerz, 10: 190-203, 1996.
9. Jäckel, W.H., Gerdes N. Medizinische Rehabilitation bei Rückenschmerzen - die Situation in Deutschland. In M. Pfingsten & J. Hildebrandt (Hrsg.),Chronischer Rückenschmerz. Wege aus dem Dilemma, Bern: Huber, 11-19, 1998.
10. Jäckel, W.H., Epidemiologie der Rückenschmerzen. Klinik der Gegenwart, Rheumatologie, 14: 1-19, 1998.
11. Kohlmann, T., Raspe, H., Zur Messung patientennaher Erfolgskriterien in der medizinischen Rehabilitation: Wie gut stimmen „indirekte“ und „direkte“ Methoden der Veränderungsmessung überein. Rehabilitation, 37: 530-537, 1998.