

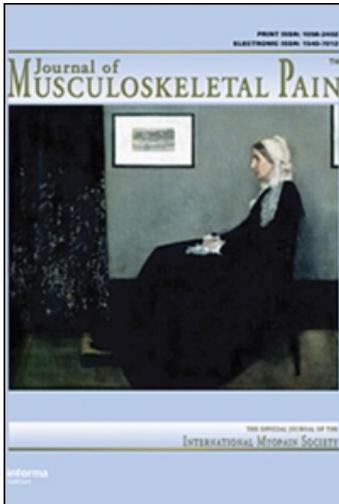
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ARTICLE

Health-Related Quality of Life in Patients with Myofascial Pain Syndrome: A Controlled Clinical Study

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ABSTRACT. Objectives: The aim of this study was to assess the health-related quality of life [HRQOL] in patients with the myofascial pain syndrome [MPS] and to evaluate the relation between this and various clinical parameters.

Methods: Patients with MPS, according to Travell and Simons (7), were recruited from the rehabilitation practice of the authors. Healthy normal controls were recruited from among relatives or friends of the patients. The duration and intensity of pain was noted and the Nottingham Health Profile [NHP] used to assess the HRQOL in both the groups.

Results: Thirty-seven patients with MPS and 40 healthy normal control volunteers were included in this study. Except for social isolation score, the mean scores for all parameters of the NHP were higher in the MPS group, which means a worse HRQOL. There was a correlation between NHP pain score and number of trigger points. However, no correlation was found between the NHP scores and other clinical parameters, such as age, duration of pain, and visual analog scale scores.

Conclusions: The results of this study suggest that MPS affects many aspects of HRQOL. Besides the clinical and laboratory evaluation, the emotional and physiological parameters should also be considered to define the health status of the patients and plan the appropriate treatment.

KEYWORDS. Myofascial pain syndrome, regional pain syndrome, health-related quality of life, Nottingham Health Profile

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INTRODUCTION

Myofascial pain syndrome [MPS] is prevalent in regional musculoskeletal pain syndromes (1). This disorder is characterized by the presence of one or more trigger points [TrPs], associated palpable taut bands in skeletal muscle, and specific pain referral patterns (2, 3). Patients with MPS in the upper part of the body, in the same way as those with other noninflammatory musculoskeletal pain disorders (4–6), suffer from such symptoms as pain and stiffness in the neck, headaches, insomnia, and dizziness sufficient to affect health-related quality of life [HRQOL] (7). HRQOL is determined by a patient's reaction to the difference between disability and normal functional capacity. It is an overall effect of the disease on the one hand and the patient's response to the treatment on the other. In order to assess the state of health of patients with noninflammatory musculoskeletal pain disorders, their signs and symptoms and laboratory findings need to be augmented by an evaluation of their psychological makeup and social status.

The Nottingham Health Profile [NHP] (8) has been devised for the purpose of assessing the health status of patients suffering from a wide range of diseases and comparing the outcomes of a number of different interventions (9, 10). The NHP is divided into two parts. The factors considered in part 1 reflect the patient's status in terms of energy, pain, emotional reactions, sleep, social isolation, and physical mobility. Factors in part 2 relate to occupational, social, recreational, sexual, and domestic matters.

In this study, we aimed to assess the health status of patients with MPS by comparing their NHP scores with those of healthy subjects, and to evaluate the relationship between HRQOL and such clinical factors as age, duration of pain, number of TrPs, and visual analog scale [VAS] scores.

METHODS

The diagnosis was based on criteria put forward by Travell and Simons (7). These include regional referred pain, TrPs in taut bands of muscle, and restricted movements. The controls were randomly chosen from the accompanying relatives or friends of patients who admitted to our outpatient clinic for any medical complaint.

All of the patients were evaluated by the same person [SB]. The duration, location, and onset of the pain together with details concerning previous treatments were noted. Excluded from the study were those who had any of the following: (1) American College of Rheumatology criteria for the diagnosis of fibromyalgia syndrome (11), (2) medical or physical therapy for MPS within the past 6 months, (3) signs and symptoms of cervical nerve root entrapment, (4) a history of trauma, and (5) presence of inflammatory, infectious, or malignant disease. In addition, any patient who proved to be uncooperative was excluded.

To ensure that MPS was the sole disorder, either computerized tomography or magnetic resonance imaging (MRI) of the cervical spine was carried out to exclude other diseases. Both the localization of the pain and the number of TrPs present were determined by means of a physical examination. The search for TrPs was carried out in all cases by the same person [SB]. The patient was asked to say "yes" when pain was felt (12). The range of motion was assessed and a neurological examination carried out. Pain intensity was measured on a 10-cm standard VAS scored from 0 [no pain] to 10 [unbearable pain].

Laboratory tests carried out to exclude other conditions included the erythrocyte sedimentation rate and a complete blood count. In addition, measurement of the serum thyroxin, Vitamin B12, and folic acid levels were included.

To assess the health status of subjects in the MPS and healthy normal control [HNC] groups, the NHP part 1 was completed by each of them without physician's help. This particular profile includes 38 items measuring six dimensions. These are pain [eight items], physical mobility [eight items], energy [three items], emotional reactions [nine items], sleep [five items], and social isolation [five items]. Each section has score range between zero and 100 with a higher score indicating more severely compromised health status. The reliability and validity of the Turkish version of NHP has been tested (13).

The Statistical Package for Social Sciences software, version 8.0 for Windows was used to perform all statistical analysis. Statistical significance of differences between groups was assessed by parametric student's *t*-test. For correlation between NHP scores and the clinical

TABLE 1. The Social and Demographic Data from the Myofascial Pain Syndrome Patient Group and the Healthy Normal Control Group

	MPS group N = 37	HNC group N = 40	<i>P</i> ^a
Age, years, Mean [SD]	37.7 [9.8]	37.0 [10.6]	0.765
Gender N [%]			
Female	30 [81.1]	27 [67.5]	0.175
Male	7 [18.9]	13 [32.5]	
Marital status N [%]			
Married	35 [94.6]	35 [87.5]	0.279
Others	2 [5.4]	5 [12.5]	
Education N [%]			
Elementary school	22 [59.5]	25 [62.5]	0.202
Secondary school	8 [21.6]	8 [20]	
High school, University	7 [18.9]	7 [17.5]	
Working status N [%]			
Currently working	18 [48.6]	23 [57.5]	0.437
Clerk	8	9	
Teacher	3	2	
Nurse	3	—	
Worker	2	5	
Technician	2	4	
Farmer	—	3	
Not currently working	19 [51.4]	17 [42.5]	
Housewife	18	15	
Retired worker	1	2	
Disease duration, Months, Mean [SD]	9.3 [13.2]	—	—

^aStudent's *t*-test for age, chi-squared test for gender, education, marital, and working status; MPS = myofascial pain syndrome group, HNC = healthy normal control group, SD = standard deviation.

measures of the disease Pearson correlation matrix was performed. A value of $P < 0.05$ was regarded as significant.

RESULTS

In all 37 patients [30 females, 7 males] with MPS were included in this study.

Forty healthy persons [27 females, 13 males] who did not meet diagnostic criteria for MPS and had no other chronic medical condition volunteered to be HNCs in this study. The MPS and the HNC groups predominantly consisted of females. The social and demographic characteristics of these two groups are shown in Table 1. They were similar in terms of age, gender, education, and marital and working status. The mean value of the VAS pain score in the study group was 6.1 ± 2.0 cm and the mean score of TrPs was 1.4 ± 0.9 [minimum 1, maximum 3]. The localization of TrPs was mainly in the upper part of the trunk. Twenty-seven patients [73 percent] had the TrPs in the trapezius muscle, six patients [16.7 percent] in the supraspinatus muscle, three patients [8.1 percent] in the infraspinatus muscle, and one patient [2.7 percent] in the semispinalis capitis muscle. The radiological and laboratory evaluations of the study group were in normal ranges.

The mean NHP scores in both control and study groups are shown in Table 2 and Figure 1. Except for social isolation score, the mean scores of all parameters of NHP, namely pain, energy, physical mobility, sleep, and emotional reactions, were significantly higher than the HNC group, which means a worse HRQOL. Although the mean score of the social isolation was higher than the HNC group, the difference was not statistically significant [$P = 0.066$]. There was

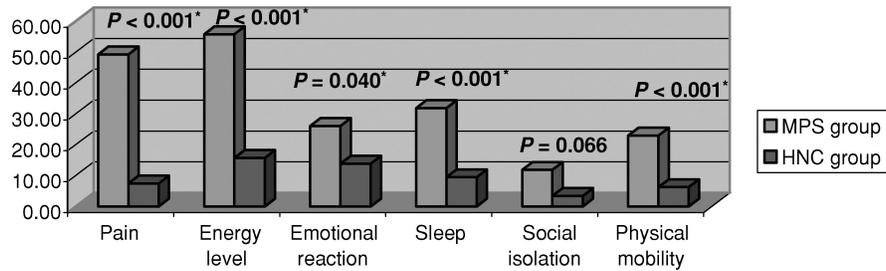
TABLE 2. The Mean and the Median Nottingham Health Profile Scores of the Myofascial Pain Syndrome Patient Group and the Healthy Normal Control Group

NHP Section	MPS group		HNC group		<i>p</i> ^a
	M [SD]	Median	M [SD]	Median	
Pain	49.3 [32.3]	37.5	7.5 [14.4]	0.0	<0.001
Energy Level	55.8 [39.3]	66.6	15.8 [27.2]	0.0	<0.001
Emotional Reactions	26.1 [29.2]	22.2	13.9 [22]	0.0	0.040
Sleep	31.9 [33.5]	20.0	9.5 [16.3]	0.0	<0.001
Social Isolation	11.9 [26.9]	0.0	3.5 [8.9]	0.0	0.066
Physical Mobility	23 [20.7]	12.5	6.3 [9.4]	0.0	<0.001

NHP = Nottingham Health Profile, MPS = myofascial pain syndrome, HNC = healthy normal control, M = mean, SD = standard deviation.

^aStudent's *t*-test.

FIGURE 1. The Mean Nottingham Health Profile Scores of the Myofascial Pain Syndrome (MPS) Patient Group and the Healthy Normal Control (HNC).



* $P < 0.05$.

a correlation between NHP pain score and the number of TrPs ($R = -0.36$, $P = 0.03$). However, no correlation was found between the NHP scores and clinical parameters, such as age, duration of disease, and VAS scores [Table 3]. All dimensions of the NHP were correlated with each other [$P < 0.05$].

DISCUSSION

The MPS is a common cause of pain in clinical practice. The definite diagnostic tool for MPS is lacking. Though diagnostic criteria defined by Travell and Simons (7) are still being used in the clinical practice, new and consensus-based diagnostic criteria should be made. The aim of the treatment in any chronic pain syndrome should not only be to improve symptoms and functional status but also the HRQOL. Recently, many valid, reliable, and reproducible

instruments have been developed to assess this in specific chronic diseases (14–17). The NHP, now frequently used tool because of its design, allows comparison of patient groups in such disorders (8).

In this study, HRQOL was measured in terms of energy, pain, sleep, physical mobility, emotional reactions, and social isolation. We found that patients with MPS have worse HRQOL than healthy individuals in terms of pain, energy, physical mobility, sleep, and emotional reactions. This result suggests that NHP is an appropriate instrument for distinguishing patients with MPS from healthy controls. Expectedly, energy and pain scale scores were very high in the MPS group, similar to scores in other chronic pain syndromes (18, 19). In our study, the social isolation scale was not very different from the control group. This result supports the findings of the study of Fitzpatrick et al. (18), investigating patients with rheumatoid arthritis. The reason

TABLE 3. Pearson's Correlation Analysis of the Dimensions of Nottingham Health Profile Scores and Some Clinical Characteristics

NHP Section	Disease Duration	Age	VAS	Number of TrPs ^a
Pain	$R = 0.176$	$R = 0.042$	$R = -0.026$	$R = -0.36$
	$P = 0.298$	$P = 0.806$	$P = 0.881$	$P = 0.031^b$
Energy Level	$R = 0.089$	$R = -0.020$	$R = -0.129$	$R = 0.11$
	$P = 0.602$	$P = 0.905$	$P = 0.448$	$P = 0.532$
Emotional Reactions	$R = 0.018$	$R = -0.97$	$R = -0.007$	$R = -0.08$
	$P = 0.915$	$P = 0.243$	$P = 0.969$	$P = 0.635$
Sleep	$R = 0.07$	$R = -0.15$	$R = 0.18$	$R = 0.01$
	$P = 0.703$	$P = 0.383$	$P = 0.299$	$P = 0.952$
Social Isolation	$R = -0.28$	$R = -0.01$	$R = 0.06$	$R = -0.16$
	$P = 0.089$	$P = 0.956$	$P = 0.745$	$P = 0.333$
Physical Mobility	$R = -0.16$	$R = 0.07$	$R = -0.16$	$R = -0.01$
	$P = 0.350$	$P = 0.670$	$P = 0.349$	$P = 0.563$

^aSpearman ranked correlation coefficient, ^b $P < 0.05$; NHP = Nottingham Health Profile, VAS = visual analog scale, TrPs = trigger points.

for this is that patients with MPS do not have problems relating to their social lives.

For the exact determination of HRQOL, social and demographic factors of the individuals must also be known. In a study of 565 elderly subjects, Grimby et al. (20) found that social and demographic factors had a major role in QOL status. To minimize this effect we selected our patient and control groups from the same community.

In many previous studies, authors reported strong correlation between the clinical measures of the disease and HRQOL scales of patients with rheumatoid arthritis (21, 22). However, in our study except for the correlation between pain scores of NHP and number of TrPs, NHP does not seem to correlate with some clinical measures including age, disease duration, and VAS scores. This may be due to lack of any objective disease-severity index in MPS.

In this study, we used NHP as an external objective criterion to describe the physical, psychological, and social life status of patients with MPS. Except for the social status, MPS has adverse effects on all parameters of HRQOL. This may provide a further insight for understanding the disease process and evaluating the patient.

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