Elustondo, Sofía Garrido et al. “Satisfaction of patients with mechanical neck disorders attended to by primary care physical therapists.” Journal of evaluation in clinical practice vol. 16,3 (2010): 445-50.

htpps://doi.org/10.1111/j.1365-2753.2009.01138.x

Satisfaction of patients with mechanical neck disorders attended to by primary care physical therapists

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Keywords
neck pain, patient satisfaction, primary health care

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Accepted for publication: 5 September 2008

Abstract

Objective To describe the satisfaction and expectations of the patients with neck pain with relation to the physical therapy received and to analyse the relationship between the patient's characteristics and his degree of satisfaction and expectation.
Design This study is performed in the setting of a random clinical trial.
Participants Subjects between 18 and 60 years of age with subacute mechanical neck disorders.
Main variables Patient's expectations and satisfaction with the received treatment (scale similar to Likert's Scale).
Other variables Pain intensity, episodes of previous neck pain, depression and anxiety symptoms (Goldberg Scale), age and gender, physical disability, general state of health, duration of the present episode of neck pain, regular exercise and regular consumption of medicines.
Results and conclusions A total of 90 patients were studied. The mean age was 40.1 years and 88.9% were female. Thirteen per cent of the subjects expected partial relief, 60% expected good recovery and 27% expected complete recovery. Those patients who have not suffered previous episodes of neck pain and those who have a higher score on the Goldberg Scale have a higher expectation of recovering after the treatment. About patients' satisfaction after the intervention, 2% totally unsatisfied, 1% very unsatisfied, 2% somewhat unsatisfied, 2% indifferent, 17% somewhat satisfied, 42% very satisfied and 30% totally satisfied. Those patients who experienced a greater decrease in pain were more satisfied. It would be interesting to study in depth the measurement of patients' satisfaction with the received physical therapy and to extend it to other pathologies.

Introduction

In recent years, important changes have taken place in management models in the realm of health care, converting the educational guidance of the users into one of its prime objectives. Today, user satisfaction is considered as a factor in the evaluation of the quality of health services [1].

Among the different psycosociological models that attempt to explain the concept of satisfaction, the one used most frequently [2] considers the degree of satisfaction as the difference between the perception of the result and what the user expected. In other words, satisfaction appears to be the result of the confirmation or non-confirmation of the patient's expectation in the different aspects of the medical attention (personal relationships, characteristics of the installations used, etc.) [3]. At the same time, the requirements of each aspect may vary depending on the type of disease or the treatment that has been used.

This fact implicates a cultural change in health professionals, that as providers of health service, they should not only identify the patients' expectations, but also measure their satisfaction [1].

In the Spanish National Health System, satisfaction surveys are annually performed on the patients attended to in primary care (PC) [4]. To carry out these surveys, information is gathered through personal interviews with the patients. This information is

in reference to accessibility, the personal treatment received, evaluation of the professionals by stratum, state of the centre, domiciliary and urgent attention, and a global evaluation of the assistance received.

In PC there are different types of professionals working: doctors, paediatricians, nurses, maternity nurses, physical therapists, etc. The patients who received physical therapy are obtained through PC doctors. In these surveys, there is no specific question aimed at evaluating the patient's satisfaction with the attention paid by the physical therapist.

Primary care is the central element of the public health system. Between 60% and 70% of the population aged more than 14 years visit the PC centre at least once a year [5]. Among the different health problems treated by PC doctors, neck pain is one of the most frequent, with an annual incidence of mechanical neck disorders occurring in 12 per 1000 subjects that visit the consulting room [6].

The objective of this study was to describe the satisfaction and expectations of the patients with neck pain with relation to the physical therapy received and to analyse the relationship between the patient's characteristics and his degree of satisfaction and expectation.

Material and methods

This study is performed in the setting of a random clinical trial that evaluates the effectiveness of manual therapy as opposed to electric stimulation in patients with mechanical neck disorders in PC. The method and preliminary results are described in another publication [7]. The study's population are subjects between 18 and 60 years of age with subacute mechanical neck disorders according to the classification of the Quebec Task Force for Spinal Disorders [8] attended to in PC centres of one of Madrid's areas that covers a population of 1 317 977 inhabitants. The study was performed between May 2005 and May 2007.

The patients who satisfied the criteria for inclusion were selected in a consecutive manner.

To measure the patient's satisfaction with the received treatment, a scale similar to Likert's Scale was used: totally unsatisfied, very unsatisfied, somewhat unsatisfied, indifferent, somewhat satisfied, very satisfied and completely satisfied. The expectations regarding the physical therapy treatment were measured with the same kind of scale: total recovery, good recovery, partial relief and no hope of relief.

Other variables were also gathered: age; gender; physical disability according to the Spanish translation of the *Neck Disability Index* [9]; general state of health according to the SF-12 Health Questionnaire [10], which after that was classified as above or below the reference population; episodes of previous neck pain, pain intensity, duration of the present episode of neck pain (days); Goldberg Anxiety and Depression Scale (GHQ) [11]; regular exercise (more than three times per week) and regular consumption of medicines (no consumption/consumption of some medication).

The pain intensity was measured in mm with a visual analogue scale (VAS), calculated as the mean values described at the actual moment, the average during the previous 2 weeks and the worst pain in the previous 2 weeks. To facilitate the interpretation, the pain intensity was classified as mild pain (<30 mm), moderate pain (31–54 mm) and severe pain (>55 mm), according to the criteria established by Collins *et al.* [12] and adapted to our area by Medina *et al.* [9].

Statistical analysis

Initially, a descriptive analysis of the characteristics of the patients included in the study was performed. A bivariate statistical test was also performed to evaluate possible associations between the patients' characteristics and the degree of satisfaction and expectations concerning the treatment. To perform this analysis, the χ^2-test was used classifying the satisfaction into three categories: unsatisfied, indifferent and satisfied. After this a multivariate analysis was performed using a multiple linear regression by steps (≤ 0.05 fits in and ≥ 0.1 is out). Satisfaction and expectations on the treatment were considered as dependent variables. Those variables that turned out to be significant in the bivariate analysis and those that could act as confusion factors or as modifiers were considered independent variables. The level of statistical significance used was the conventional value ($P < 0.05$).

Results

A total of 90 patients were obtained. The mean age was 40.1 [standard deviation (SD) = 10.7] years. They were mainly female (88.9%, $n = 80$). The patients' general characteristics can be seen in Table 1.

The mean score in the *Neck Disability Index* test was 32.9 (SD = 12.6) and the mean duration of the actual episode under study was 147 (SD = 250) days.

Thirteen per cent of the subjects expected partial relief, 60% expected good recovery and 27% expected complete recovery.

Table 2 shows the results of the patients' expectations related to the treatment depending on the variables studied. In the bivariate analysis, differences in gender and previous episodes of neck pain are observed. In the multivariate analysis, two associated variables

Table 1 Characteristics of the study's population (90 patients)

Characteristics	*n*	%
Gender		
Male	10	11.1
Female	80	88.9
Regular consumption of medicines		
Takes no medicines	57	63.3
Takes some medicine	33	36.7
Regular exercise (>3 weeks)		
Yes	28	32.2
No	59	67.8
Diagnosis of anxiety/depression (GHQ-28)		
Healthy	48	53.3
Anxiety/depression	42	46.7
General state of mental health (SF-12)		
Above reference population	32	35.6
Below reference population	51	61.4
General state of physical health (SF-12)		
Above reference population	20	24.1
Below reference population	63	75.9

GHQ-28, Goldberg Depression and Anxiety Scale.

Table 2 Patients' expectations regarding the treatment with relation to the variables studied

	Partial relief *n* (%)	Substantial recovery *n* (%)	Complete recovery *n* (%)	*P*-value
Consumption of medicines				
Takes some medicine	5 (16.7)	19 (63.3)	6 (20.0)	0.319
Takes no medicines	6 (10.9)	33 (60.0)	16 (29.1)	
Previous episodes of neck pain				
Yes	12 (16.5)	46 (63.0)	15 (20.5)	0.024
No	0	6 (46.2)	7 (53.8)	
Regular exercise				
Yes	5 (17.9)	15 (53.5)	8 (28.6)	0.660
No	7 (11.9)	37 (62.7)	15 (25.4)	
Gender				
Male	0	4 (40.0)	6 (60.0)	0.029
Female	12 (15.6)	48 (62.3)	17 (22.1)	
State of mental health				
Inferior	10 (19.6)	29 (56.9)	12 (23.5)	0.230
Superior	2 (6.5)	19 (61.2)	10 (32.3)	
State of physical health				
Inferior	7 (11.3)	39 (62.9)	16 (25.8)	0.230
Superior	5 (25.0)	9 (45.0)	6 (30.0)	
Diagnosis of anxiety/depression (GHQ-28)				
Healthy	8 (17.8)	29 (64.4)	8 (17.8)	0.130
Anxiety/depression	4 (9.5)	23 (54.8)	15 (35.7)	
Duration of episode (days)				
Less than 30	4 (16.0)	14 (56.0)	7 (28.0)	0.630
30 to 60	3 (23.1)	5 (38.4)	5 (38.5)	
61 to 90	1 (6.2)	12 (75.0)	3 (18.8)	
Over 90	4 (12.5)	20 (62.5)	8 (25.0)	
Age (years)				
Under 30	0	10 (58.8)	7 (41.2)	0.320
31 to 40	5 (22.7)	13 (59.1)	4 (18.2)	
41 to 50	3 (11.5)	16 (61.6)	7 (26.9)	
Over 50	1 (7.7)	9 (69.2)	3 (23.1)	
Pain during the first visit				
Mild	2 (18.2)	7 (63.6)	2 (18.2)	0.930
Moderate	3 (11.5)	15 (57.7)	8 (30.8)	
Severe	7 (14.3)	30 (61.2)	12 (24.5)	
Total	12 (13.3)	52 (59.8)	23 (26.9)	

GHQ-28, Goldberg Depression and Anxiety Scale.

are identified: previous episodes of neck pain and the score obtained in the Goldberg Depression and Anxiety Scale (GHQ-28). Those patients who have not suffered previous episodes of neck pain and those who have a higher score on the Goldberg Scale have a higher expectation of recovering after the treatment (Table 3).

According to the information obtained, the description of the satisfaction with the received treatment is the following: 2% totally unsatisfied, 1% very unsatisfied, 2% somewhat unsatisfied, 2% indifferent, 17% somewhat satisfied, 42% very satisfied and 30% totally satisfied.

Table 4 shows the results of the patients' satisfaction after the intervention according to the variables studied. In the bivariate analysis, there are differences in the pain variation after having finished the intervention. In the multivariate analysis, the pain variation after the intervention measured with VAS was identified as an associated variable. Those patients who experienced a

Table 3 Associated variables to the expectations for recovery after the treatment

Dependent variable: expectations regarding the treatment			
R^2: 0.131			
Associated variables:	**Coefficient**	**SE (coefficient)**	***P*-value**
(Constant)	2.1	0.27	<0.01
Previous episodes of neck pain	0.48	0.17	0.08
Score on the Goldberg Depression and Anxiety Scale	0.27	0.13	0.04

R^2, coefficient of determination; SE, standard error.

Table 4 Patients' satisfaction after physical therapy treatment according to the variables studied

	Unsatisfied *n* (%)	Indifferent *n* (%)	Satisfied *n* (%)	*P*-value
Consumption of medicines				
Takes some medicine	4 (12.9)	1 (3.3)	26 (83.8)	0.31
Takes no medicines	1 (1.9)	1 (1.9)	52 (96.2)	
Previous episodes of neck pain				
Yes	5 (7.0)	2 (3.0)	64 (90.0)	0.49
No	0	0	13 (100)	
Regular exercise				
Yes	2 (7.4)	0	25 (92.6)	0.57
No	3 (5.4)	2 (3.5)	51 (91.1)	
Gender				
Male	0	0	10 (100)	0.60
Female	5 (6.6)	2 (2.6)	69 (90.8)	
State of mental health				
Inferior	4 (8.0)	1 (2.0)	45 (90.0)	0.23
Superior	1 (3.3)	1 (3.3)	28 (93.4)	
State of physical health				
Inferior	4 (6.5)	2 (3.3)	55 (90.2)	0.70
Superior	1 (5.3)	0	18 (94.7)	
Diagnosis of anxiety/depression (GHQ-28)				
Healthy	4 (8.5)	1 (2.1)	42 (89.4)	0.50
Anxiety/depression	1 (2.6)	1 (2.6)	37 (94.8)	
Duration of episode (days)				
Under 30	0	0	25 (100)	0.63
30 to 60	2 (15.4)	1 (7.7)	10 (76.9)	
61 to 90	0	1 (6.7)	14 (93.3)	
Over 90	3 (9.4)	0	29 (90.6)	
Age (years)				
Under 30	0	0	16 (100)	0.69
31 to 40	1 (4.5)	1 (4.5)	20 (91.0)	
41 to 50	3 (11.1)	1 (3.7)	23 (85.2)	
Over 50	0	0	13 (100)	
Expectations				
Partial relief	2 (18.2)	1 (9.1)	8 (72.7)	0.13
Substantial recovery	3 (5.9)	1 (2.0)	47 (92.1)	
Complete recovery	0	0	21 (100)	
Intervention				
Manual therapy	2 (4.5)	0	45 (95.5)	0.29
TENS	3 (7.1)	2 (4.8)	37 (88.1)	
Difference in pain				
Under 20	5 (13.9)	2 (5.5)	29 (80.6)	0.05
Over 20	0	0	50 (100)	
Total	5 (5.7)	2 (2.4)	79 (91.9)	

GHQ-28, Goldberg Depression and Anxiety Scale; TENS, transcutaneous electrical nerve stimulation.

greater decrease in pain after the intervention were more satisfied (Table 5).

Discussion

A possible limitation of this study is the fact that interviewing the patients in the same environment where the treatment is provided could cause them to express higher levels of satisfaction and expectations than what they actually experienced.

In general, the patients express very high expectations (59.8% expect a good recovery and 26.9% expect a complete recovery). Those patients who have suffered previous episodes of neck pain

Table 5 Associated variables to the satisfaction with the treatment

Dependent variable: level of satisfaction with the treatment			
R^2: 0.28			
Associated variables:	**Coefficient**	**SE (coefficient)**	***P*-value**
(Constant)	5.4	0.18	<0.01
Pain variation after the intervention measured with VAS	0.03	0.005	<0.01

R^2, coefficient of determinationl; SE, standard error; VAS, visual analogue scale.

have lower expectations. The cause of this could be that those patients with previous episodes of neck pain may have received treatments with only short-term recovery. On the other hand, all the patients enrolled in the study expected to obtain some relief.

Another factor associated with the expectations is the GHQ-28 score. Those with a higher score have higher expectations regarding the treatment. We must take into consideration that neck pain is frequently associated with anxiety and depression. Those patients with higher anxiety levels are more receptive to the treatment. Those patients with higher scores have more anxiety, which possibly makes them more receptive to the treatment.

Regarding satisfaction, 92% of the patients are satisfied with the physical therapy treatment received. We consider this degree of satisfaction to be very high, similar to the one obtained in the last satisfaction inquiry performed on the PC patients, where 86% said to be globally satisfied with the attention received [4]. These results are similar to the ones obtained in other studies performed in hospitals [13,14]. Along the same line, the revision performed by Sitzia *et al.* concludes that in most studies published regarding the patients' satisfaction with the health services, a high proportion of patients are satisfied with the received attention. This observation is independent of the type of questionnaire and the applied method [15].

Regarding the factors associated to the patients' satisfaction, when the intervention is more effective the patients in this study are more satisfied, independently of the type of intervention used, manual therapy or electric stimulation, and of their previous expectations.

The effectiveness of the interventions has been identified in different studies as one of the most appreciated aspects of health care [16–18]. For this reason, it is important to continue working on offering the most effective treatments, based on scientific evidence, and in this way we will contribute to maintain high levels of satisfaction among our patients.

According to the results of this study, there is no association between satisfaction and age or gender. In the bibliography disparate results can be found. Monteagudo *et al.* [13] and Santiña *et al.* [19] have observed that being male acts as an associated factor to higher satisfaction with the health care received. Caminal has observed that patients aged 25–44 years are less satisfied [20]. On the other hand, the meta-analysis performed by Hall and Dornan [21], when studying the sociodemographic characteristics as predictors of satisfaction with the received health care, concludes that these barely predict the patients' satisfaction.

Because age and gender are not modifiable factors, their only interest in this study is to generate working hypothesis that will allow us to identify the reasons why some groups are less satisfied.

In a clinical trial performed by Klaber *et al.*, an association is found between the patients' preference for one treatment and the recovery obtained with the physical therapy received in patients with neck pain [22]. They recommend including the patients' preferences as a variable capable of having an influence on the results.

This study allows us to know the patients' opinion about physical therapy for a highly prevalent specific disorder, which is the mechanical neck disorder. It would be interesting to study in depth the measurement of patients' satisfaction with the received physical therapy and to extend it to other pathologies.

This measurement will allow us to identify specific aspects of medical care that result in less satisfaction, opening new lines of possible improvement. It would be desirable to implant a periodic evaluation, as is done in the rest of PC.

Acknowledgement

This study was supported by the following grant: Fondo de Investigación Sanitaria/Fondos Europeos de Desarrollo Regional (PI N°: 041320).

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