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Emotionality and Quality of Life in Patients with Musculoskeletal Disorders

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Abstract

Introduction: It is well-known that musculoskeletal conditions are related with pain and anxiety. Anxiety is a complex concept that involves a transient state caused by different factors, as well as a persistent mood.
Aim: The aim of the study is to reveal the associations between the discomfort caused by some musculoskeletal disorders and the emotionality (anxiety as a trait or a state) on the one hand and, on the other hand, the level of quality of life.
Material and method: The study was cross-sectional and was performed in a period of 6 months on an outpatient basis of 174 patients with musculoskeletal disorders. Thus, we have taken into consideration 5 groups of patients, according to the presented medical condition: low back pain, law back osteoporosis, hand osteoarthritis, knee osteoarthritis, coxarthrosis. We have administered two scales to all the patients: The State Trait Anxiety Inventory (STAI) form X1 (anxiety a s a state) and form X2 (anxiety as a trait) and the Quality of Life (QOL)
Results: For patients who were diagnosed with low back pain, quality of life was 60.71% of the maximum value. Anxiety by using the S.T.A.I. form X1 at an average value was 46.5, anxiety assessed by the STAI form X2 scale, indicates an average value of 39. In the case of osteoporosis, the value of their quality of life was 90.18%. Anxiety (form X1) was 36, and anxiety (form X2) was 52. For the patients diagnosed with hip osteoarthritis, respectively with knee osteoarthritis, the quality of life were 87.5% and 77.67%, anxiety (form X1) were 41 and 48, anxiety (form X2) were 47 and 61. For patients diagnosed with hand disorders, the quality of life was 81.25%, anxiety (form X1) was 62 and anxiety (form X2) was 47.
Conclusions: It was found that in the case of the low back pain, the quality of life had the lowest value (60.71% of the maximum value). In knee osteoarthritis it was found the highest value of anxiety as a trait was 61, and the highest value of anxiety as a condition was found in osteoarthritis of the hand as 62.

Keywords: *anxiety, quality of life, musculoskeletal disorders,*

I. INTRODUCTION

Any pathology at the musculoskeletal level involves pain and anxiety. There are also sympathetic vegetative phenomena: palpitations, sweating, difficulty in breathing and precordial pain. This condition can occur in the onset of a condition, so in this case we speak of anxiety as a condition. It can be a transient condition and it can happen to anybody. But there is also anxiety as a trait that occurs in time, it is less related to a stimulus, but it is based, above all, on the existing predisposition to feel fear.
Posttraumatic conditions and the carpal tunnel syndrome were discussed at the level of the hand**.** In tendon disorders of the flexors and/ or extensors of the hand are the following symptoms: pain, joint stiffness, muscle atrophy and low functional capacity (1). Sometimes these patients need a specialized surgical treatment (2) repeated and supplemented with the following recovery procedures: electrotherapy, massage, hydrotherapy, physical therapy (1, 3, 4).
The recovery treatment begins 4-6 weeks after surgery as the goal is to recover strength and endurance in the hand (5).
Postoperative scars need procedures that enable the vascularization of the affected area, the increased tissue elasticity and the stretching of the articular and periarticular elements. The correct application of the recovery program can avoid the occurrence of complications such as tendon adhesions that can block movement (4, 6). The recovery of the functionality at the level of the hand also implies the development of some occupational therapy activities through which the integration in the family, social and professional activity can be achieved much faster. The application of kinesiotherapy through proprioceptive facilitation techniques enables the acceleration of the voluntary motor response at the local level.

The hand is considered an important segment in gestures, functionality and in performing daily activities. The incidence of the carpal tunnel syndrome is about 0.125% - 1% /year, with a prevalence of 5-15%. It mainly affects females, whereas 80% of people with this pathology are over 40 years old. Carpal tunnel syndrome is considered a disability problem that has medical, social and economic consequences. Recovery is generally conservative and involves the use of laser, ultrasound (the use of low intensity and low - medium frequency), cryotherapy, physical therapy and orthosis, but there are also situations when surgery is required and then medical recovery. Therefore, any health condition for this segment influences the patients' quality of life, by their getting involved in daily activities and in the socio-professional insertion (7).

At the level of the spine, anxiety was assessed in people diagnosed with low back pain and osteoporosis (8, 9). Low back pain affects the young and adults; it is a public health problem where males are more prone to the disease. This pathology involves the living environment, mechanical, psycho-social and socio-demographic factors (10). Structural abnormalities are frequently identified by radiological examinations in patients who complain of back pain (11).

Ultrasound and physical therapy are used to improve these issues. Ultrasound was used due to thermal and non-thermal effects, according to the exposure parameters (intensity, power, pulse emission form, the duration of the action and the frequency of the repetition) (12, 13). Ultrasound applied by sonophoresis method (14) was used because it has a low risk of side effects but also for the administration of drugs at the skin level whereas the biological effects are especially at low intensities (15, 16). Physical therapy involved exercises to lengthen the iliopsoas and leg muscles, by toning the abdominal and paravertebral muscles.

Osteoporosis is a systemic disease that is characterized by low bone density and low bone strength by changing its structure and quality. Osteoporosis is considered a public health issue that needs early diagnosis to enable the optimal use of therapeutic strategies.

The treatment of this condition involves pharmacological treatment as well as a recovery program by physical therapy (17).

For peripheral joints, anxiety was assessed in people diagnosed with osteoarthritis of the knee and hips. People over the age of 55 have osteoarthritis, with radiological changes in joints, pain, instability in orthostatism and gait (18), which affects their functional capacity. The osteoarthritis diagnosis is currently conducted by assessing symptoms and by evaluating plain radiographs (19, 20)

The condition is chronic, degenerative, with higher frequency in hips and knees. Osteoarthritis is considered a public health problem with family, social and economic consequences (21, 22). The needed treatment is pharmacological (non-steroidal anti-inflammatory drugs, administered generally and locally), and non-pharmacological (low and medium frequency currents, ultrasound-sonophoresis, with the frequency of 1 MHz and a power of 0.3W / cm^2), and physiotherapy (isometric exercises for quadriceps and adductors) (23).

Coxarthrosis is a degenerative disease located at the level of the hip and registering a share of 2-4% in the elderly (24). This condition causes pain, by limiting the mobility of the joints, by reducing the walking perimeter, by affecting balance, stability and quality of life (25).

It is very important for these patients to have low body weight (26). In addition to pharmacological and non-pharmacological treatment, namely by electrotherapy (low and medium frequency currents, ultrasound), recovery involves hydrotherapy, massage and physiotherapy exercises to restore joint mobility, muscle strength and muscle balance between the action of agonists and antagonists.

The use of ultrasound reduces the pain, joint stiffness and muscle contracture, it increases local temperature (27). The local administration of Diclofenac by using ultrasound, along with muscle relaxants, massage and physical therapy is useful in the treatment of joint diseases (28), regardless of the stage of the acute, sub-acute and chronic disease (29, 30, 31)

Musculoskeletal disorders may coexist with other types of neurological disorders: Parkinson's disease, stroke, depression, Alzheimer's disease (32, 33, 34).

The aim of this paper was to assess anxiety for various musculoskeletal disorders.

Material and method

The study is cross-sectional and was performed in a period of 6 months on an outpatient basis. A number of 174 patients with musculoskeletal disorders in the hand, knee, hip and spine were studied. Thus, 5 groups were made according to the presented condition. The State Trait Anxiety Inventory (STAI) scale was used to assess anxiety, which includes 2 self-assessment scales to measure two distinct concepts of anxiety, namely anxiety as a state (STAI-X1) and anxiety as a trait (STAI-X2).

The QOL (Quality of life) scale was used to assess the quality of life, which includes 16 items and assesses the state of physical and mental health at a given time.

The 1st Group includes 42 patients diagnosed with low back pain, of which 20 are female and 22 are male. According to the age groups, the distribution is as follows:

Table no. 1 Distribution of patients by Group 1

Gender	Number of patients	Age group			
		41-50 years	51-60 years	61-70 years	>71 years
Female	20	17	16	7	2
Male	22				

The 2nd Group included 17 patients diagnosed with osteoporosis, distributed by age groups as follows: a person in the age group 41-50, 4 people in the age group of 51-60, 12 people in the age group of 61-70 and one person over 71.

Table no. 2 Distribution of patients by Group 2

Gender	Number of patients	Age group			
		41-50 years	51-60 years	61-70 years	>71 years
Female	17	1	4	11	1

The 3rd Group consisted of 33 people diagnosed with hip osteoarthritis, of which 18 were female and 15 were male.

Table no. 3 Distribution of patients by Group 3

Gender	Number of patients	Age group			
		41-50 years	51-60 years	61-70 years	>71 years
Female	18	12	8	10	3
Male	15				

The 4th Group included 56 people diagnosed with knee osteoarthrosis. Of these, 27 were female and 29 were male.

Table no. 4 Distribution of patients by Group 4

Gender	Number of patients	Age group			
		41-50 years	51-60 years	61-70 years	>71 years
Female	27	11	20	17	8
Male	29				

The 5th Group consisted of 26 patients with hand disorders (post-traumatic disorders and the carpal tunnel syndrome). Of these, 14 were male and 12 were female, distributed as follows:

Table no. 1 Distribution of patients by Group 5

Gender	Number of patients	Age group			
		41-50 years	51-60 years	61-70 years	>71 years
Female	12	10	10	5	1
Male	14				

Results

For patients who were diagnosed with spinal disorders, namely low back pain, their quality of life during the assessment was 60.71% of the maximum value on the QOL scale. Anxiety as a condition was assessed by using the S.T.A.I. form X1 at an average value of 46.5, which shows that the patient is slightly influenced by the disease. Anxiety as a trait, assessed by the STAI form X2 scale, indicates an average value of 39, which shows that patients with this condition sometimes feel certain conditions related to the surrounding stressors.

For patients diagnosed with osteoporosis, the value of their quality of life was 90.18% of the maximum value on the QOL scale. Anxiety as a condition, assessed by using the S.T.A.I. Form X1 had a mean value of 36, which shows that patients were slightly affected by the disease. Anxiety as a trait recorded 52, which explains the patients' moods, shown sometimes or often.

For degenerative diseases, the following can be found:

- for patients diagnosed with hip osteoarthritis, the quality of life was estimated at 87.5% of the maximum value. Anxiety as a condition had average values of 41 whereas patients were slightly influenced by the disease. Anxiety as a trait had an average value of 47, which means that from time to time these patients had special emotional moods.
- for patients diagnosed with knee osteoarthritis, the quality of life was estimated at 77.67% of the maximum value on the QOL scale. Anxiety as a condition had an average value of 48 and the patients were slightly influenced by the disease. Anxiety as a trait had an average value of 61 and the patients were often influenced by anxiety and fear.

For patients diagnosed with hand disorders, the quality of life was estimated at 81.25% of the maximum value. Anxiety as a condition had a mean value of 62 and the patients described the perceived anxiety in the condition as being felt enough. Anxiety as a trait recorded an average value of 47, although patients sometimes perceived certain anxiety and fear.

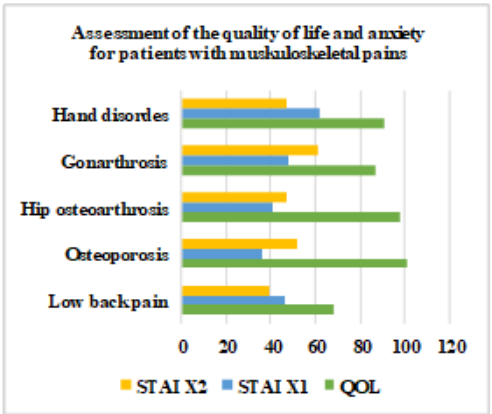

Chart no. 1 Assessment of the quality of life and anxiety for patients with muskuloskeletal pains

Discussions

Anxious patients who come to consultations may experience anxiety, helplessness, agitation, pale faces, even high blood pressure and tachycardia.

The measuring of anxiety or its assessment is considered an indicator of the ability to cope with stressors. There are many musculoskeletal disorders in which anxiety can be quantified as a condition or as a trait (35, 36).

The S.T.A.I. scale assesses the anxiety of patients with musculoskeletal pain, and it has two forms: one that assesses anxiety as a condition and the second that assesses anxiety as a trait. Form X1 contains 20 questions and assesses how patients feel at a given time. S.T.A.I. Form X2 also consists of 20 questions and assesses how patients feel in general. (37)

In our study, anxiety as a condition caused by the disease recorded mean values between 36 and 62. The lowest values were recorded in patients with osteoporosis whose anxiety caused by the disease was slightly perceived and the maximum value in patients diagnosed with hand diseases, this condition being quite felt.

Anxiety as a trait had an average value between 39 and 61. The lowest value was recorded in patients diagnosed with low back pain, who sometimes felt anxious, whereas the maximum value was recorded in patients with knee osteoarthritis, who were often afraid and anxious.

It is known that the maximum value for the QOL scale is 112 (38). In this study, the quality of life of patients with musculoskeletal disorders was between 60.71% for patients with low back pain and 90.18% for patients with osteoporosis.

Conclusions

Of all the chronic musculoskeletal disorders considered in our study, it was found that in the case of the low back pain, the quality of life had the lowest value (60.71% of the maximum value).

In knee osteoarthritis it was found the highest value of anxiety as a trait had an average value of 61, and the highest value of anxiety as a condition was found in osteoarthritis of the hand was 62.

Therefore, a low quality of life is related to the lower functionality that low back pain can induce compared to other conditions.

Regarding anxiety (state or trait) and the association with musculoskeletal conditions, however, the results reveal interesting results, some less sustained by scientifical basis, but this can be further verified by statistical studies containing these types of data.

Author contributions.

All the authors had the same contribution.

Accordance to ethics standards.

The study complies with the rules of ethics and deontology according to the legislation in force.

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