



## Quality of life, functional and physical capacity of fibromyalgia patients

### Qualidade de vida, capacidade funcional e física de pacientes com fibromialgia

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#### **ABSTRACT**

**Introduction:** Fibromyalgia is a syndrome that manifests itself with the symptomatology of pains spread throughout the body (tender points), directly affecting the quality of life of the patient, as it compromises functionality, physical and psychological well-being. **Objective:** The aim of the present study was to evaluate the quality of life, functional and physical capacity of patients with fibromyalgia. **Methodology:** This is a quantitative, exploratory and descriptive research, where 12 patients were interviewed, 3 from the city of Nanuque/MG, 4 from the city of Ecoporanga/ES, 3 from the city of Ponto Belo/ES and 2 through google forms, from May 18, 2023 to June 7, 2023. **Result:** When asked about the interference of fibromyalgia in the ability to perform tasks daily, we obtained the following results in the never-before-class category: vacuuming on the carpet (83%), walking several blocks (75%) and working outside (58%). The following symptoms were verified: intense pain (83.33%), tiredness (83.33%), rigidity (50%), tension (66.67%), and depression (50%), in addition to changes in sleep quality (33.33% have moderate sleep, and 66.67% have a very poor sleep). **Conclusion:** It is concluded that due to the intense pain presented in fibromyalgia, there are important limitations in the lives of patients, since it alters functionality, interpersonal relationships, and psychological state. However, physiotherapy has a fundamental role, as it aims to treat symptoms such as pain, muscle shortening, muscle weakness, among others, thus promoting a better quality of life.

**Keywords:** Fibromyalgia, Physical activities, Depression, Anxiety, Quality of life.



## 1 INTRODUCTION

Fibromyalgia is a very complex pathology, because it is difficult to diagnose it, and this is recognized by clinical criteria, where the pain spread throughout the body in specific points, the so-called tender points, and the presence of symptoms such as non-restorative sleep, depression, anxiety, and fatigue are evaluated.

The most used non-pharmacological treatment is physiotherapy. It aims to reduce the symptoms of patients, who present diffuse pain through the musculoskeletal system, resulting in a decrease in functional capacity, psychosocial alteration, depressive and anxiety conditions, as well as changes in sleep quality.

The interpersonal relationship of the patient with fibromyalgia is totally modified because he avoids being in society because many people do not believe when they report sensitivity to pain, that is, they are not understood by those who live together, causing them to exclude themselves.

It is of paramount importance to understand the complexity of the pathology, and which areas of life it interferes, so that the patient with fibromyalgia is understood, especially when they report being unwell due to the symptoms of the disease, and not judged with disdain telling them that they are inventing. In addition, with the knowledge acquired in the present study, it is possible to perceive the need to guide the fibromyalgic individual to seek resources that contribute to well-being and the reduction of symptoms.

Thus, this research aimed to evaluate the quality of life, functional and physical capacity of patients with fibromyalgia.

## 2 THEORETICAL BACKGROUND

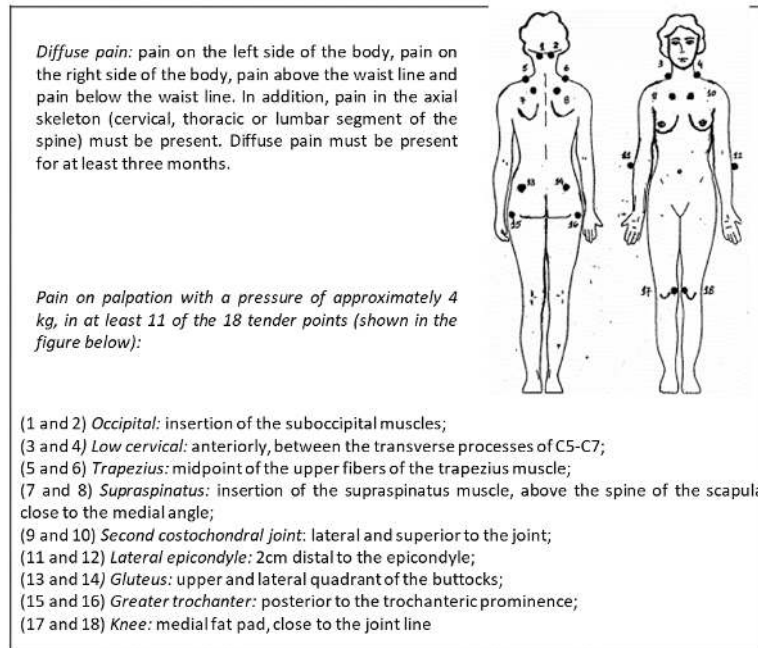
### 2.1 INTRODUCING FIBROMYALGIA: CONCEPT, SYMPTOMS AND DIAGNOSIS

Fibromyalgia is a non-inflammatory rheumatic syndrome, originating from the central nervous system, which is characterized by chronic pain spread through the musculoskeletal system. It is not known its origin, however, studies indicate that there is a correlation with metabolism, and oxygenation of muscle fibers, in addition to an alteration in serotonin and endorphin levels, and in the perception of pain by the peripheral nervous system (SILVA *et. al*, 2012). To diagnose it it is necessary to perform an anamnesis and detailed physical examination, and the treatment consists of mitigating the symptoms (BUENO *et. al*, 2012).

For a person to be diagnosed with fibromyalgia, the American College of Rheumatology (ACR) in 1990 stipulated that diffuse pain must be present in three body quadrants in the last three

months, in addition to painful reaction to palpation in pre-established places, in 11 of the 18 points (CARDOSO *et. al*, 2011).

Figure 1- Fibromyalgia classification criteria established in 1990 by the American College of Rheumatology (MATSUTANI, 2003, apload Figure adapted from Okifuji et al. A. standardized manual tender point survey. J Rheumatol. 1997; 24: 377-83)



Although the pains spread through the musculoskeletal system (tender points) are primordial symptoms for the diagnosis of fibromyalgia, most patients report that they also feel tired, rigid muscles at dawn, poor quality of sleep, because they wake up several times during the night, thus making it difficult to induce sleep, depressive symptoms, anxiety, difficulty concentrating, psychological changes that lead to criticism of oneself for not being able to perform the daily tasks with perfection due to pain, among others (JUNIOR *et. al*, 2012).

About 2 to 4% of the world population (2% in women and 0.5% in men), is diagnosed with fibromyalgia, being its predominance in people of the age of approximately 35 to 60 years (FERRARI and KOLOGI, 2021).

### 3 QUALITY OF LIFE, FUNCTIONAL CAPACITY AND PHYSICAL ASPECTS

Fibromyalgia is a disease with chronic symptoms, that is, that persist throughout life, these symptoms interfere in the patient's daily life, limiting the performance of activities of daily living (ADLs), reducing the production in jobs, changing the relationship with family, friends, and colleagues, thus influencing the quality of life (TOSSINI *et. al*, 2017).



Most of the time, the person with fibromyalgia isolates himself, by having the feeling of guilt and invalidity, since he needs help to perform certain tasks. There needs to be a lot of understanding from family and friends, as well as collaboration and help with household chores, encouragement to perform physical activities, and emotional support during crises (DA MOTA *et. al*, 2021).

The emotion is directly linked to the perception of physical pain, so this emotional change causes the decrease of positive feelings, generating the modulation or increase of the perception of pain (DOS SANTOS and BOGGIO, 2019).

According to Pedro Ângel *et. al* (2012) the individual with fibromyalgia has a decreased physical capacity, since compared to other people they exercise less due to the pain picture. This situation makes it extremely difficult for them to perform basic day-to-day activities, such as walking, standing up, moving objects from side to side and elevating their upper limbs to different positions.

#### **4 METHODS AND TECHNIQUES USED TO TREAT FIBROMYALGIA**

Treatment may be drug (pharmacological), such as muscle relaxants, anti-inflammatories, antidepressants, and analgesics; and non-medication, which is the case of physiotherapy. Physical therapy has presented many benefits, and aims to control the influence of the symptoms of the syndrome in the daily life of patients (CARBONARIO, 2006).

It consists of reducing the symptoms, reinserting the individual into society in a more functional way and without painful symptoms. However, for a good prognosis, it is necessary the contribution of the patient, the same must collaborate with the treatment, and want to have an improvement with the therapy (CATALAM *et. al*, 2022).

There are several techniques in the area of physiotherapy that can be applied to patients with fibromyalgia, since they require physical exercises, such as aquatic physiotherapy, cardiovascular physiotherapy, massage, among others (DA SILVA and FERREIRA, 2021).

##### **4.1 HYDROTHERAPY**

Hydrotherapy is a technique that uses the physical properties of water for treatment. In this modality it is possible that the exercises are done more easily, since in the water there is a decrease in body weight. This type of therapy improves venous return, in addition to promoting pain reduction, muscle stretching, release of tension, due to water being heated (PEREIRA *et. al*, 2014).



## 4.2 PHYSICAL EXERCISES

The patient with fibromyalgia needs physical exercise, because the pathology causes a decrease in muscle strength, and this causes the patient to have fatigue and weaknesses, and consequently an impaired quality of life (SANTOS and SANTOS, 2018).

### 4.2.1 Aerobic exercises

Aerobic exercises cause hormones of well-being to be modified, so it helps in physical improvement, pain reduction, and relaxation, which improves the quality of sleep (PEREIRA *et. al*, 2014).

Aerobic exercises are very beneficial for treatment, as it will cause a decrease in anxiety, muscle tension, pain and improvement in physical conditioning (DE FARIA ARANTES *et. al* , 2018).

## 4.3 MASSAGE

Massage is a technique that brings a sense of relaxation and psychic well-being, because it has as its basic principle the release of tension from the muscles, improving blood perfusion of tissues, thus increasing oxygenation and nutrition (GONDIM and ALMEIDA, 2017).

## 4.4 STRETCHING

The stretching caused by stretching allows the patient to be guided as to the proper movement for the musculature. In addition to improving the integrity, posture of the individual, and the function of the muscle fibers, it returns to the ideal size of the fiber. Thus, the patient performs daily activities with a lower restriction of movement and with a lower limitation, since stretching reduces the pain, making the individual more functional (MARQUES *et. al*, 2007).

## 5 METHODOLOGICAL PROCEDURES

This is a quantitative, exploratory and descriptive research, where the quality of life, functional and physical capacity of patients with fibromyalgia was studied, using a validated and modified structured questionnaire.

The research was conducted through the application of the modified fibromyalgia impact questionnaire (FIQ), which has as its main objective to evaluate the quality of life, specifically of patients with fibromyalgia, in addition to seeking to evaluate the functional, emotional and



physical capacity, professional situation, psychological disorders and quality of sleep. It was composed of 15 questions, the first consisting of 09 alternatives.

The sample consisted of 12 patients, 3 from the city of Nanuque/MG, 4 from the city of Ecoporanga/ES, 3 from the city of Ponto Belo/ES and 2 through google forms. The questionnaire was applied from May 18, 2023 to June 7, 2023.

The inclusion criteria were questioned active and non-active patients diagnosed with fibromyalgia from the municipal physiotherapeutic clinics of the municipalities of Ecoporanga-ES, Ponto Belo-ES, and the Assistance Center of UNEC-CASU, campus Nanuque/MG. Patients who were not present on the date described, or who for some reason refused to participate in the research, were excluded.

All respondents completed the free and informed consent form that contains the necessary information in relation to the research. The respondents are protected by the secrecy of professional ethics required by COFFITO (Federal Council of Physical Therapy and Occupational Therapy).

## 6 RESULTS AND DISCUSSION

The Impact of Fibromyalgia (FIQ) questionnaire was applied to 12 patients, 3 from the city of Nanuque/MG, 4 from the city of Ecoporanga/ES, 3 from the city of Ponto Belo/ES and 2 through google forms. The survey took place between May 18, 2023 and June 7, 2023.

When asked about the interference of fibromyalgia in the ability to perform tasks on a daily basis, we obtained the following result: shopping (8.33% always, 16.67% often, 58.33% occasionally and 16.67% never); washing and extending clothes (16.67% always, 50% occasionally and 33.33% never); cooking (25% always, 25% often, 25% occasionally and 25% never); washing dishes (25% always, 50% occasionally and 25% never); vacuum the carpet (16.67% occasionally and 83.33% never); making the bed (16.67% always, 25% often, 25% occasionally and 33.33% never); walk several blocks (25% occasionally and 75% never); visiting friends (91.67% occasionally and 8.33% never); work outside (16.67% always, 25% occasionally and 58.33% never)

Table 1- Interference of fibromyalgia in the ability to perform day-to-day tasks

TASKS	Always (%)	Often (%)	Occasionally (%)	Never (%)
a) Shopping	8,33%	16,67%	58,33%	16,67%
b) Washing and extending clothes	16,67%	-	50%	33,33%
c) Cooking	25%	25%	25%	25%
d) Washing the dishes	25%	-	50%	25%

e) Vacuum cleaner on carpet	-	-	16,67%	83,33%
f) Making the bed	16,67%	25%	25%	33,33%
g) Walk several blocks	-	-	25%	75%
h) Visiting friends	-	-	91,67%	8,33%
i) Working outside	16,67%	-	25%	58,33%

Source: Research Fados, 2023

Pain has a great influence on physical capacity, since muscle strength and flexibility will be decreased, thus making it difficult to perform daily tasks (TOMAS-CARUS *et. al*, 2015).

Fibromyalgia affects people who are in the productive age group, that is, who are active. When affected by the disease the execution of tasks are difficult, since they present fatigue and weaknesses, making them unfit to perform routine activities (VITA, 2021).

Due to the functional limitation of patients with fibromyalgia, they have a lower quality of life, thus changing their social relationship, in addition to mental status, developing anxieties and depression (MATSUTANI, 2003).

In table 2, the results show that when asked how many days of the week they felt well, 16.67% answered that on no day, 8.33% said on only one, 25% on two days, 41.67% on three days and 8.33% said they felt good on seven days of the week.

Regarding the intensity of pain of the patients, 16.67% reported having moderate pain and 83.33% reported feeling very severe pain. Regarding the intensity of tiredness, 16.67% say they have moderate fatigue and 83.33% say they feel very tired. The survey revealed that when waking up in the morning 33.33% wake up a little tired and 66.67% wake up very tired. And when asked about the symptom of stiffness, 16.67% reported that they feel a little stiffness, 33.33% feel a moderate stiffness and 50% feel a lot of stiffness.

Table 2- Fibromyalgia Symptoms

How many days of the week did you feel good?	(%)
None	16,67%
One	8,33%
Two	25%
Three	41,67%
Four	-
Five	-
Six	-
Seven	8,33%
How has the intensity of the pain been	(%)
No pain	-
Mild pain	-
Moderate pain	16,67%
Very severe pain	83,33%
How has been the intensity of your tiredness	(%)
No fatigue	-

Little tiredness	-
Moderate tiredness	16,67%
Very tired	83,33%
<b>How it feels when you wake up in the morning</b>	<b>(%) n</b>
Okay deal	-
I wake up a little tired	33,33%
I wake up very tired	66,67%
<b>Feels stiff</b>	<b>(%)</b>
I don't feel stiff	-
A little stiffness	16,67%
Moderate stiffness	33,33%
Lots of stiffness	50%

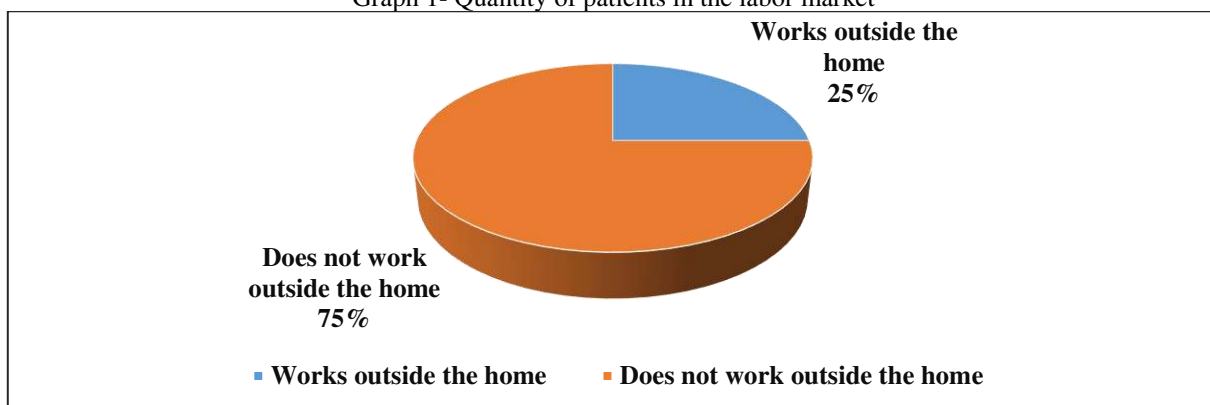
Source: Research Data, 2023

The picture of pain in fibromyalgia is presented by the musculoskeletal system, interfering directly in the quality of life of the patient, since it causes malaise, and limitations both physical, psychological and social, causing there to be changes in the individual's coexistence in society and in the performance of routine tasks (OLIVEIRA *et. al*, 2014).

The symptom of tiredness presented by the patients is due to the fact that the muscle at rest produces less nitric oxide, causing vasoconstriction, causing increased pain, which prevents individuals from having a quality sleep, and reaching the REM phase. Thus, the patient will not have a restful sleep, and consequently there will be no restoration of energy, resulting in fatigue, especially when he wakes up in the morning (ALMEIDA FILHO *et. al*, 2013 ) (RODRIGUES and FRITOLLI, 2022).

In graph 1, it can be observed that of the 100% of the interviewees, 25% perform some type of work outside the home and 75% do not work outside the home.

Graph 1- Quantity of patients in the labor market



Source: Research Data, 2023

There is a large percentage of unemployment among patients due to fibromyalgia disease, since they will find it difficult to perform activities, and productivity will be decreased. Thus, some

individuals resign, and those who remain in the labor market, gradually decreases the efforts required for the charges (NOVAES, 2014).

According to De Medeiros *et. al* (2012) fibromyalgia is not considered as a pathology that leads to lack of ability to perform work activities, however, it can be taken into account the distancing from work for a short period of time, in case the symptomatology of fibromyalgia is significant.

In table 3, of the patients who work outside the home, 66.67% did not need to miss any day of the week at work because of fibromyalgia, however, 33.33% needed to miss the five days of the week.

When asked about the interference of pain or other symptoms of fibromyalgia in the ability to work 33, 33% stated that there is interference in a moderate way, 33.33% say that it interferes a lot and 33.34% reported that it interferes extremely.

Table 3- Influence of fibromyalgia at work

How many days of the last week missed work because of fibromyalgia	(%)
None	66,67%
One	-
Two	-
Three	-
Four	-
Five	33,33%

Continuous...

At work, how much pain or other symptoms of fibromyalgia interfere with the ability to work	(%)
Not at all	-
A little	-
Moderately	33,33%
Very	33,33%
Extremely	33,34%

Source: Research Data, 2023

Individuals who suffer from fibromyalgia have no way to prove the pain they are feeling, since there is no visible injury, this contributes to the people involved in the work environment (colleagues, bosses) doubt them, requiring that there is no change in productivity or in the pace of work, even if this is high. This situation makes the patient feel in a complicated situation, since he needs to keep working, even with the pain intensifying (MATTOS and LUZ, 2012).

This disbelief causes these individuals to be emotionally affected, since they avoid exposing what they are feeling for fear of not being understood, which causes a modification in the relationship with family, friends, and with the society in which they live. The symptoms of

fibromyalgia can make it difficult to perform both simple and more complex activities, causing a decrease in the autonomy of fibromyomitic individuals (SILVEIRA, 2004).

Many patients miss days of work, or take time off from professional activities through medical certificates, or informal arrangements. However, this situation can increase the feeling of incapacity (SILVEIRA, 2004).

Table 4 analyzes the socio-emotional issues of patients with fibromyalgia. It can be observed that when asked if they feel tension, nervousness or anxiety, 33.33% answered that they have moderate tension and 66.67% feel a lot of tension. When asked if they feel depressed or sad, 25 percent said they feel a little depressed, 50 percent say they have moderate depression, and 25 percent have a lot of depression. They were also asked how much of the time physical health or emotional problems interfered with social activities, such as visiting friends, relatives, etc., 50% said they interfered most of the time, 33.33% said they interfered some part of the time, and 16.67% answered that they interfered a small part of the time.

Table 4 - Socio-emotional aspects of patients with Fibromyalgia

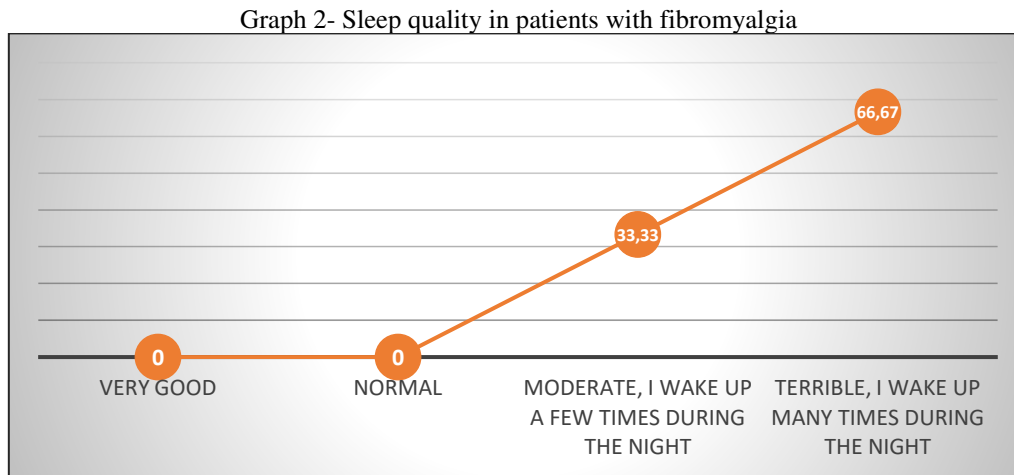
<b>Feels tension, nervousness, or anxiety</b>	<b>(%)</b>
No voltage	-
A little tension	-
Moderate voltage	33,33%
Too much tension	66,67%
<b>Feels depressed or sad</b>	<b>(%)</b>
No depression	-
A little depression	25%
Moderate depression	50%
Too much depression	25%
<b>During the last 4 weeks, how much of your time your physical health or emotional problems have interfered with your social activities (such as visiting friends, relative, etc.)</b>	<b>(%)</b>
All the Time	-
Most of the time	50%
Some part of the time	33,33%
A small part of the time	16,67%
No part of the time	-

Source: Research Data, 2023

The feeling of joy promotes a relaxation in the muscles, allowing the person to have the feeling of well-being, however, the patient with fibromyalgia, keeps the feelings to himself, causing an entrapment of what they are feeling, and consequently causing greater tension. This situation causes the individual to be more sore, mainly due to the greater sensitivity to pain present in them. Thus, there will be a greater emotional exhaustion, since they deprive themselves of moments of pleasure (DA SILVA CAMPOS and PAPALÉO, 2019).

The feeling of depression alters the quality of life because the individual isolates himself, excluding himself from the society in which he is inserted (DOS SANTOS and BOGGIO, 2019).

Graph 2 verified the sleep quality of patients with fibromyalgia. It can be observed that 33.33% reported having a moderate sleep, because they wake up a few times during the night, 66.67% say they have a terrible sleep, because they wake up many times during the night.



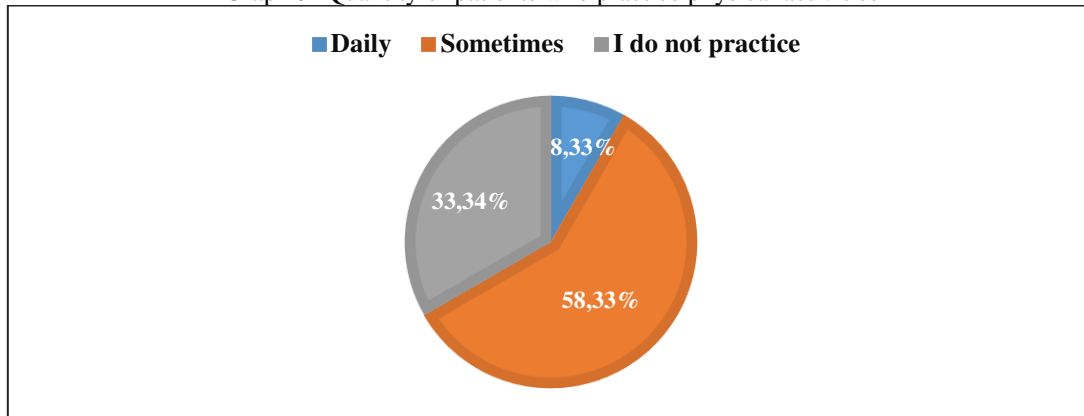
Source: Research Data, 2023

Poor sleep directly interferes with the quality of life of patients, as it causes tiredness, insomnia and migraines, in addition to worsening the symptoms of fibromyalgia. Most patients report that they are slow to initiate sleep, and that they wake up several times during the night, preventing them from having restful sleep and energy recovery. Usually these multiple awakenings are related to pain (MORO et. al, 2014) (PIRES et. al, 2021).

A poor quality of sleep causes major consequences for an individual. The deprivation of the same will alter the social and mental health of the patient, in addition to harming in the activities of the day to day (MORO et. al, 2014).

In graph 3, the interviewees were asked if they practiced physical activities, 8.33% answered that they practice daily, 58.33% reported that they practice sometimes, and 33.34% say that they do not practice.

Graph 3- Quantity of patients who practice physical activities



Source: Research Data, 2023

Due to the symptoms presented, such as pain and fatigue, many patients perform physical activity in a limited way, not persisting in the execution of the same. However, physical activity done daily contributes to a better mood, and consequently a better quality of life (MATSUDO and LILLO, 2019).

Participants who reported practicing physical activities daily or sometimes were asked if they thought it influenced the improvement of fibromyalgia symptoms. 50% think it influences a little, 12.5% moderately, and 37.5% think it influences a lot.

Table 5- Influence of physical activity in patients with fibromyalgia

Do you think that the practices of physical activities influence the improvement of your fibromyalgia symptoms	(%)
Not at all	-
A little	50%
Moderately	12,5%
Very	37,5%
Extremely	-

Source: Research Data, 2023

The treatment of fibromyalgia without physical activities is inefficient, because when performing exercises the patient will have strength gain, improving conditioning, thus changing the sensitivity to pain (PAULA and RABELLO, 2015).

The practice of regular physical activities contributes to the improvement of the symptomatology of fibromyalgia because it in addition to allowing the patient to maintain physical conditioning, promotes a sense of well-being (BREDA *et. al*, 2013).

Aerobic activities with moderate intensity contribute positively to depressive symptoms, and in the decrease of tender's points. The exercises also promote improvement in physical capacity, helping the patient to perform day-to-day activities, keeping him active (BUENO *et. al*, 2012).



## 7 CONCLUSION

It is concluded that patients with fibromyalgia have an affected quality of life due to the symptoms presented. The patients interviewed reported that they are unable to perform activities that require greater physical effort, and that they feel pain, fatigue upon waking up and rigidity, which ends up interfering with their functionality and social relationships. This causes the feeling of incapacity, causing them to have depressive pictures. Thus, physiotherapy contributes positively to the treatment, as it aims at analgesia, muscle strengthening, muscle stretching, among others, promoting physical and mental well-being, thus improving the quality of life of the fibromyalgic patient.



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