

## Chronic pain due to low back pain and public policies focused on the health area



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### ABSTRACT

When analyzing one of the most recurrent types of pain, low back pain is one of the most common complaints related to the musculoskeletal system and affects a large part of the population at some point in their lives. In the context of the Unified

Health System (SUS), pain is a significant concern. Chronic pain can have a negative effect on individuals' lives, affecting their ability to work, perform daily activities, and enjoy a full life. Thus, this text explores the epidemiological profile of these patients, including information on prevalence, risk factors, associated comorbidities and demographic properties. Chronic low back pain is most common in people between the ages of 30 and 60. It is evident that the incidence and prevalence are higher in females and lower in males. Advanced age, obesity, sedentary lifestyle, smoking, heavy physical labor, and a family history of low back pain are factors that can increase an individual's likelihood of developing this condition. Certain occupations can increase the risk of developing chronic low back pain. Thus, in addition to the direct costs associated with health services, chronic low back pain also generates indirect costs. It is crucial to adopt effective prevention and management strategies to minimize the burden of chronic low back pain for the State, investing in health education programs inside and outside the work environment and promoting the reintegration and adequate professional rehabilitation of affected individuals, bringing benefits both to patients and to the economy in general.

**Keywords:** Musculoskeletal pain, Chronic pain, Public Policies, Occupational Health.

## 1 INTRODUCTION

Pain is a response of the nervous system that has the function of alerting the body about possible damage to the body, characterized as an unpleasant sensory experience. Low back pain, or low back pain, has several causes that can be modified according to the biopsychosocial of the individual, having a higher prevalence in industrialized societies. Pain can be differentiated into acute, when it is temporary, or chronic, when it persists for a prolonged time (Corgozinho et al., 2020; Valadares, 2020).

In the Unified Health System (SUS), pain is a concern, especially when it comes to chronic pain, which can bring harm to the professional and social life of the individual who lives with it, and



is also related to mental health problems, recognizing the importance of treating and addressing this theme through the development of strategies and policies focused on the theme (Andrade, 2022).

The SUS considers pain as one of the priorities in the lines of care of the Network of Attention to People with Chronic Diseases, which through articulations between the various levels of health care, aims to accompany the patient with chronic diseases, including low back pain, in a continuous and integrated way. The system recognizes the need to address pain in a multidimensional way, considering the physical, emotional, social and psychological aspects. Thus, the treatment of low back pain in the SUS involves an integral approach, with the participation of different health professionals (Brasil, 2013).

Understanding the epidemiological profile of patients with chronic low back pain is essential to identify risk factors, improve diagnosis, plan preventive interventions and provide more appropriate care to affected individuals. Thus, this review explores the epidemiological profile of these patients, including information on prevalence, risk factors, associated comorbidities, and demographic properties (Martins et al., 2022).

Public policies aimed at chronic low back pain should be developed in a participatory and transparent way, involving health professionals and service users, and it is essential that they have an updated scientific basis (Santos and Jakobsen, 2020).

Pain is an unpleasant sensory and emotional experience associated with an injury or potential tissue injury. It is a response of the nervous system that has the function of alerting the body about possible damage or health problems. Pain can be acute, when it is temporary and usually related to a specific injury, or chronic, when it persists for a prolonged period, often beyond the expected healing time (Corgozinho et al., 2020). Based on the text of Corgozinho et al., (2020, p. 250) "it is directly related to the quality of life and, depending on its severity, can lead those who suffer from it to ask for their own death."

While suffering is seen as a vast, universal, existential feeling, pain can be described as a physiological process. It can be, however, physical or emotional, related or not to some "real" wound. The word that designates it originates from the Latin *dolor*; usually defined as an unpleasant or painful impression, resulting from some injury or contusion, or from an abnormal state of the organism or part of it (Corgozinho et al., 2020, p. 250).

This sensation is perceived through specialized receptors called nociceptors, which are present throughout the body. These nociceptors are activated in response to harmful stimuli such as intense heat, excessive pressure, irritating or inflammatory chemicals, and tissue lesions. These signals are transmitted to the central nervous system (CNS) through nerve fibers, where they are processed and interpreted as a painful sensation (Aalmeida and Kraychete, 2017). January (2017, p. 15) points out that "its complexity requires an equally complex classification. Therefore, to classify pain you have to take into account the duration, the location and the eventual association with some pathology."



Also titled algia, it can be classified into different types, based on its duration, location and origin. Acute pain is short-lived and usually occurs as a result of a specific injury, such as a bone fracture, a burn, or a cut. According to January (2017, p. 15) acute pain is defined as "pain of recent onset and probable limited duration, with a temporal and/or causal definition". Likewise, Corgozinho et al., (2020, p. 250) point out that "acute pain is one of the main reasons for seeking emergency services, being a valuable symptom in the investigation and definition of the patient's diagnosis."

Thus, the data say that "at least 37% of the Brazilian population, or 60 million people, report feeling pain in a chronic form, one that persists for more than three months, according to a study by the Brazilian Society of Pain Studies (SBED)" (Albuquerque, 2018, s.p). The evaluation is performed based on a combination of patient report, aspects of pain, physical examination, and complementary tests. The physician assesses the intensity of the pain, its location, duration, pattern of occurrence, triggering and relieving factors, in addition to considering the emotional and psychosocial aspects involved (Aguiar et al., 2021).

Pain management may involve different approaches, depending on its cause and characteristics. Analgesics, such as nonsteroidal anti-inflammatory drugs (NSAIDs), opioids, anticonvulsants, and antidepressants, may be prescribed to relieve pain. When analyzing one of the most recurrent types of pain, low back pain, which is a term used to describe a type of pain that occurs in the lumbar region of the spine of the human body, is one of the most common complaints related to the musculoskeletal system and affects a large part of the population at some point in their lives (Bento et al., 2020).

Low back pain implies a symptom and not a disease. It is classically defined by the location of pain, typically between the margins of the last rib (XII) and the inferior gluteal fold. It is commonly accompanied by pain in one or both lower limbs. Some people with low back pain have associated neurological symptoms (progressive loss of strength and progressive loss of sensation) in the lower limbs (Andrade, 2022, p. 25).

Low back pain can be classified into two main types: acute and chronic. Acute low back pain refers to a recent pain, which usually lasts up to six weeks. It is commonly caused by muscle injuries, twists, lifting heavy objects, sudden movements or improper posture. Chronic low back pain is characterized by persistent pain that lasts more than three months. It may be a result of underlying conditions such as herniated discs, osteoarthritis, spinal stenosis, or inflammatory diseases. In the words of Oliveira, Kanas and Wajchenberg (2021, p. 604) "the characteristics of pain, the symptoms presented on physical examination, changes in imaging tests and the duration are criteria used to classify low back pain".

The symptoms of low back pain can vary in intensity and duration. Patients may experience pain in the lower back that can spread to the buttocks, hips, thighs, and even to the legs (Carvalho et al., 2020). The pain may be throbbing, sharp, constant, or intermittent, and may be accompanied by muscle stiffness, limitation of movement, and a feeling of weakness in the legs. In more severe cases,



low back pain can affect quality of life, making daily activities, such as lifting objects, walking, or sitting for long periods, extremely uncomfortable and difficult to perform (Cargnin et al., 2019).

Low back pain (LBP) or low back pain is defined as a pain between the lower margin of the 12th rib and the lower gluteal line. It causes pain, discomfort, fatigue or muscle stiffness in the lower third of the spine with variable duration and intensity. Its etiology is not well established and about 30 to 40% progress to Chronic Low Back Pain (CLBP), lasting at least three months. Only 10% of low back pain has a specific cause, being in most cases classified as nonspecific, in which there is an imbalance between the effort required in the activity and the capacity for its execution (Cargnin et al., 2019, p. 708).

In the context of the Unified Health System (SUS), pain is a significant concern. Chronic pain can have a negative effect on individuals' lives, affecting their ability to work, perform daily activities, and enjoy a full life. What's more, chronic pain can be associated with mental health issues such as anxiety and depression, and requires a comprehensive care approach (Andrade, 2022). The SUS recognizes the importance of addressing pain as a public health problem. Pain treatment is considered a patient's right, and the system seeks to offer services and care to alleviate suffering and improve the quality of life of people affected by pain (Aguiar et al., 2021).

Therefore, the SUS develops strategies and policies to deal with this problem in a comprehensive way. The Federal Constitution establishes comprehensive care, with priority for preventive activities, as one of the guidelines in the field of public health, according to article 198, II, of the Federal Constitution. The National Policy of Integrative and Complementary Practices (PNPIC) of the SUS, established by Ordinance No. 971/2006, recognizes the importance of non-pharmacological approaches in the treatment of pain, including low back pain. This policy incorporates practices such as acupuncture, manual therapies (such as chiropractic and osteopathy), body practices (such as yoga and tai chi chuan), and other complementary therapies aimed at promoting comprehensive care and pain relief (Chueiri et al., 2014)

In the same vein, the system also considers pain as one of the priorities in the lines of care of the Network of Attention to People with Chronic Diseases. This network aims to promote the continuous and integrated follow-up of patients with chronic diseases, including those suffering from chronic pain, such as low back pain. This involves the articulation between different levels of health care, from primary care to specialized care, to offer comprehensive and multidisciplinary care. In the lessons of Silocchi and Junges (2017, p. 600) "NCDs are attributed 80% of consultations in primary care and 60% of hospital admissions. They are currently the biggest cause of disability."

A relevant issue to be considered in public policies aimed at chronic low back pain is the social inclusion of affected individuals, which should be developed in a participatory and transparent way, involving both health professionals and users of the system. Chronic pain can have a significant impact on people's lives, limiting their daily activities and their social participation. Thus, it is important that



psychosocial support actions are developed, such as the promotion of self-care and self-knowledge, as well as the creation of support groups for individuals with chronic low back pain.

The promotion of dialogue and collaboration between the different actors is fundamental for the development of effective and sustainable actions in the fight against chronic low back pain. It is essential that public policies focused on the health area are based on up-to-date scientific evidence, and it is necessary to invest in research that contributes to the knowledge and understanding of chronic low back pain, as well as to the development of more effective prevention and treatment strategies (Santos and Jakobsen, 2020).

It is important to emphasize that the SUS recognizes the need to address pain in a multidimensional way, considering not only the physical aspects, but also the emotional, social and psychological aspects. Thus, the treatment of low back pain in the SUS involves an integral approach, with the participation of different health professionals, such as doctors, physiotherapists, psychologists, among others, working collaboratively to offer effective and personalized care to patients (Brasil, 2006; Brazil, 2013).

With the advancement of science, technology and modern medicine, new approaches to the treatment of low back pain have emerged. In the twentieth century, physical therapy techniques, such as muscle-strengthening exercises, stretching and therapeutic manipulations, were incorporated into treatment plans, as well as the use of analgesic and anti-inflammatory drugs to relieve pain and reduce inflammation became common. According to Araújo, Lusiane and Liberatori (2012, p. 59) "through physiotherapy it is possible to obtain considerable improvements for low back pain [...] it can be verified with the guided exercises (stretching, walking, among others) that there was a decrease in subacute and chronic low back pain".

The introduction of imaging tests, such as radiographs, CT scans and MRIs, allowed a better visualization of the structures of the spine and aided in the diagnosis of underlying conditions that can cause low back pain (Salveti et al., 2012). Technological advances have also had a significant result in the treatment of low back pain. Likewise, Carvalho and Lima (2019, p. 136) expose that "studies show that auriculotherapy has a significant role in reducing pain, reducing the use of medications and improving the quality of life of patients."

Understanding the epidemiological profile of patients with chronic low back pain is essential to identify risk factors, improve diagnosis, plan preventive interventions and provide more appropriate care to affected individuals. Thus, this text explores the epidemiological profile of these patients, including information on prevalence, risk factors, associated comorbidities and demographic properties. Epidemiological studies have contributed significantly to understanding who is more likely to develop chronic low back pain and what are the patterns of occurrence of this condition (Martins et al., 2022).



According to Vieira and Alcântara (2013) chronic low back pain can affect people of all ages, but it is more common in young and middle-aged adults, people between 30 and 60 years are often the most affected, and the prevalence tends to decrease after 60 years.

In the studies developed by Bento et al., (2019) there was an incidence of low back pain of 39.0% in men and 60.9% in women, of the selected population, already in the researches of o Loureiro, Inumaru and Barreto (2017) prevalence of chronic low back pain in females was 97% in relation to 3% of males.

A study by Cargnin et al., (2019) showed that women are more likely to develop chronic low back pain. This may be related to biomechanical, hormonal, or gender-specific psychosocial factors. In addition, Vaz et al., (2017) point out that the prevalence of low back pain in women is higher. This fact can be explained by psychological and physiological factors, such as lower bone and muscle mass, and by the fact that the musculoskeletal system of women is more exposed to the loads associated with pregnancy, maternity tasks and double working hours.

The prevalence of chronic low back pain varies widely in different studies and populations. It is estimated that about 10% to 30% of the world's population suffer from this condition at some point in their lives. The annual incidence of chronic low back pain is approximately 5%, which indicates a significant repercussion on public health (Bento et al., 2019). The prevalence of age, in the findings of Martins et al., (2022) are from 46 to 60 years (reaching the level of 19.8% of the sample that was constituted of 131 patients). Importantly, chronic low back pain most often affects middle-aged and elderly adults, being less common in children and adolescents (Mundin et al., 2020).

Another profile is people who have had injuries or previous episodes of acute low back pain may be more susceptible to developing chronic low back pain. There are also indices of psychosocial factors, such as high levels of stress, anxiety, depression and job dissatisfaction, can also influence the development of chronic low back pain or aggravate symptoms in patients who already have the condition. Some evidence suggests that chronic low back pain may have a genetic predisposition in some cases, in addition, chronic low back pain is a multifactorial condition, that is, its occurrence may be influenced by a combination of several factors (Trombim, Andrioli and Longer, 2021).

Several risk factors are associated with the development of chronic low back pain. Advanced age, obesity, sedentary lifestyle, smoking, heavy physical labor, and a family history of low back pain are factors that can increase an individual's likelihood of developing this condition. The presence of psychological disorders, such as anxiety and depression, is also associated with a higher risk of developing chronic low back pain (Lima et al., 2022). In the ideas of Oliveira et al., (2020) "aging is an important risk factor for chronic low back pain. As we age, the structures of the spine can undergo wear and tear and degeneration, leading to the emergence of chronic pain in the lower back."



The lack of regular physical activity and the weakening of the core and back muscles contributes to the loss of strength and flexibility, making the lumbar region more susceptible to injury and chronic pain increasing the risk of chronic low back pain (Kipel, 2019). Cumulatively, excess weight places an additional burden on the spine and intervertebral discs, increasing the risk of chronic low back pain. Excess adipose tissue can cause systemic inflammation, which can contribute to pain. In this follow-up, according to Loureiro, Inumaru and Barreto (2017, p. 50) "the bones, muscles and joints are obliged to sustain, causing changes in the biomechanical balance of the spine and, consequently, increases the risk of low back pain in overweight and obese people".

Certain occupations that involve weight lifting, repetitive movements, improper postures, or vibrations can increase the risk of developing chronic low back pain. Construction workers, nurses, truck drivers, and those who perform heavy or repetitive work are more likely to develop this pain. The studies by Cargnin et al., (2019, p. 708) "prevalence of LD of 69.6% among nurses showed that the chances of developing any musculoskeletal pain were significantly higher in those with the perception of working for long periods in inadequate positions."

Regarding comorbidities, several studies have shown associations between chronic low back pain and other health conditions. For example, patients with chronic low back pain have a higher prevalence of sleep disorders such as insomnia and sleep apnea (Martins et al., 2022). Apart from that, the presence of diseases such as osteoporosis, arthritis, herniated disc and musculoskeletal conditions is also reported more frequently in patients with chronic low back pain. In the lessons of Araújo, Lusiane and Liberatori (2012) "pain can be caused by many factors, such as obesity, sedentary lifestyle, incorrect posture, excessive weight lifting, low back trauma, osteoporosis, etc."

Persistent pain in the lower back can notoriously affect daily activities, functional capacity, sleep quality, and emotional well-being (Kipel, 2019). Patients with chronic low back pain often report limitations in professional, recreational and social activities, which can lead to an increase in disability and a considerable economic impact for the State, as will be shown below.

Chronic low back pain results in a significant demand for health services. Costs associated with the diagnosis, treatment, and management of chronic low back pain include medical visits, imaging, medications, physical therapy, occupational therapy, surgical procedures, and other medical interventions. These costs can overwhelm the health system, especially in countries where treatment is subsidized by the state (Magalhães et al., 2019). According to Bento et al., (2020, s.p):

Of the 291 health conditions surveyed in the 2010 Global Burden of Disease study, low back pain was the biggest contributor to overall disability and ranked sixth in terms of global burden of disease measured by disability-adjusted life years.

Chronic low back pain can lead to absenteeism at work, resulting in missed work days. Moreover, even when individuals are present, pain and physical limitation can reduce their productivity



and efficiency. This can have direct consequences on companies and the economy as a whole, with production losses and impact on financial results (Andrade, 2022). In severe cases of chronic low back pain, individuals may become incapacitated for work and be forced to retire early. This results in additional costs to the state in the form of early retirement benefits and other social security programs.

Between January 2019 and December 2020, more than 10 million formal workers obtained some kind of benefit granted linked to some pathological condition. The number of benefits granted was greater than the number of benefits denied. Non-specific low back pain, represented here by ICD-10 M54.5, was responsible for 49,491 of these benefits in the 24 months studied (Andrade, 2022, p. 79).

In addition to the direct costs associated with health services, chronic low back pain also generates indirect costs. This includes transportation expenses for medical treatments, additional health care costs related to other conditions that may arise due to prolonged physical inactivity, and impact on caregivers and family members of patients who may need to take time off work to provide care (Magalhães et al., 2019). For those who are unable to return to their previous occupations due to chronic low back pain, it may be necessary to invest in vocational training and rehabilitation to help them reintegrate into the labor market in roles tailored to their physical limitations. This entails additional costs for the state, both in terms of rehabilitation programs and financial support during this transition period (Vieira et al., 2022).

Given these economic and financial implications, it is crucial to adopt effective prevention and management strategies to minimize the burden of chronic low back pain for the State (Magalhães et al., 2019). Investments in awareness programs about proper posture, promotion of physical activity, ergonomics in the workplace, and health education can help reduce the incidence and costs associated with this condition. Policies that promote the reintegration and adequate professional rehabilitation of affected individuals can bring benefits both to patients and to the economy in general (Bento et al., 2020).

Low back pain is highly prevalent in the Brazilian population. It is estimated that up to 80% of people experience at least one episode of low back pain at some point in their lives (Lima et al., 2022). Chronic low back pain is a persistent and recurrent condition in many cases, which generates many affected people. It is one of the main causes of medical consultations and hospital admissions in Brazil. This puts significant pressure on the healthcare system, increasing the demand for medical services, imaging, medications, and specialized treatments such as physical therapy and occupational therapy. The treatment of chronic low back pain requires a multidisciplinary and continuous approach, which can pose challenges for the health system (Marioto, Adame and Teixeira, 2023).

The period of the Industrial Revolution, which occurred from the end of the eighteenth century, brought with it profound socioeconomic transformations and directly influenced the health and well-being of workers. The factories were unhealthy environments, with long working hours, poor hygiene,





overcrowding, inadequate ventilation, and exposure to toxic substances. In fact, there was no safety at work, resulting in frequent accidents and dangerous conditions, affecting the health of workers in a harmful way. (Porto and Martins, 2019). Strong (2002, p. 08) points out that:

The futuristic dream of the twentieth century, decreeing the end of drudgery and unsatisfactory work, in which people would have more and more time for leisure and pleasurable activities, seems to be today a distant and unattainable utopia.

The mental health of workers was affected by the inhumane working conditions. Repetitive work, lack of autonomy, and the oppressive environment of the factories contributed to the emergence of occupational and mental illnesses, such as anxiety and depression. The exploitation and misery resulting from strenuous working hours and low pay also had harmful results on workers' quality of life (Santos and Jakobsen, 2020).

Currently, people work more and more, either to ensure the maintenance of salary levels, prestige and professional recognition, or to ensure the maintenance of their own work (Santos and Jakobsen, 2020). The new productive processes that emerged, mainly, in the last half of the twentieth century, allied to the use of electronics, mechatronics and information and communication technologies have replaced the human workforce, so that those who remained employed needed to work more hours to maintain their employability (Pinto, Pinto and Amorim, 2021).

It was only over time, through the struggles and demands of the workers and the emergence of the workers' movement, that significant changes occurred in working conditions and in the protection of workers' health. Social and political pressure led to the implementation of labor laws, regulating the working day, establishing safety and hygiene standards, and guaranteeing basic labor rights (Porto and Martins, 2019). According to Porto and Martins (2019, p. 01) "assume the emergence of workers' health as an attempt to rupture and advances in relation to both occupational medicine and occupational health."

Thus, in the current era, new diseases related to physical and psychosocial exhaustion have emerged due to the high level of demand of workers, imposing better results and long working hours. New diseases have become true epidemics, requiring professional efforts to understand them and reduce their effects on the health of workers, on Social Security networks and, especially, on the lives of affected individuals and their families. In the studies developed by Pinto, Pinto and Amorim (2021, p. 45):

The globalization of the economy and the current strengthening of neoliberal thought bring as a consequence the weakening of the Social State and, consequently, of citizenship, of the Democratic State of Law.

Chronic low back pain is one of the consequences in the health of the worker, the relationship between low back pain and the health of the worker is significant, since this condition can cause



anomalies in health and general well-being, in addition to influencing the ability to perform work tasks which becomes an economic problem to be analyzed. The prevalence of low back pain is high in industrialized countries, estimated at approximately 70%, in the United States, low back pain is a medical and socially expensive problem, costing 1,400 days of work lost per thousand inhabitants per year. In Europe, it is the most common reason for limitation in people under 45 years of age and the second most common reason for medical consultation (Vieira and Alcântara, 2013).

Low back pain can be classified into three spheres: nonspecific low back pain that is not associated with a specific cause, such as an identifiable injury or medical condition. It usually occurs due to muscle, ligament, joint, or postural problems. Symptoms can range from mild to severe and may be aggravated by physical activity, repetitive movements, or improper postures. Treatment usually involves conservative measures such as rest, strengthening exercises, physical therapy, and analgesics (Carvalho et al., 2020).

Root low back pain, also called and known as sciatica, occurs when a nerve root in the lumbar spine becomes compressed or irritated, resulting in pain that radiates to one or both legs. The pain may be accompanied by tingling, numbness, or muscle weakness in the affected area. The most common causes of root low back pain are herniated discs, spinal stenosis, or compression of the sciatic nerve. Treatment may involve analgesics, physical therapy, corticosteroid injections or, in severe cases, surgery (Rocha, 2015).

Finally, specific low back pain refers to low back pain caused by an identifiable medical condition or injury. This can include vertebral fractures, spinal infections, tumors, inflammatory diseases such as ankylosing spondylitis, or other specific conditions. Treatment depends on the underlying cause and may involve a multidisciplinary approach with medications, physical therapy, surgery, or treatment targeted at the specific condition (Martins et al., 2022).

Low back pain in workers is one of the main topics discussed in public health and economic management, as there is a high rate of absenteeism, resulting in lost work days (Andrade, 2022). What's more, even when workers are present, low back pain can affect their ability to perform tasks efficiently, resulting in a decrease in productivity. They assert about some of the main causes of low back pain Vaz et al., (2017, p. 02) that "occupational reasons, lack of work skills, anti-ergonomic postures, discontent with the work environment, exacerbation of hours in the same position, and transfer of loads".

The consequences of occupational low back pain "arise at the moment when the activities developed by the patient in his job become triggers for the onset of pain", and can cause constant discomfort and limitations in daily activities, affecting the quality of life of the worker. This can lead to emotional problems such as anxiety, depression and stress (Pereira and Reis, 2021, p. 184). This problem can result in significant medical expenses, including doctor visits, physical therapy



treatments, medications, and possible surgeries. This increases costs for both the worker and the employer in terms of health insurance coverage and related benefits (Vieira and Alcântara, 2013).

We can cite as the main occupations with the highest prevalence of occupational low back pain the class of domestic servants, carpenters, car mechanics, janitor, hairdresser, construction workers and nurses, which does not ensure that the other professions are not also included in the high rates of involvement. The precariousness of work has been determinant for the emergence of musculoskeletal complaints and within this context the physical, psychosocial demands and difficulty in planning tasks become the main allies for the illness of these workers (Rocha, 2015, p. 08)

Low back pain can compromise workplace safety. When a worker has low back pain, a reduction in concentration and reaction time may occur, increasing the risk of accidents and occupational injuries. It can lead to a sedentary lifestyle, since physical activity can cause discomfort and additional pain. Lack of proper exercise and movement can have as consequences the weakening of the back muscles and an increased risk of recurrence of low back pain (Paula, et al., 2016). Based on the text of Pereira and Reis (2021, p. 192) "indicates a relationship between the appearance of chronic low back pain and the activities developed at work, given the characteristics of the labor market in developing countries."

It is observed that in Brazil, in the socioeconomic context it is possible to identify a large portion of workers who have Work-Related Musculoskeletal Disorders (WMSD), which according to Soares et al., (2019, p. 416) "represent the main causes of morbidity in workers. These disorders can be understood as a set of work-related signs and symptoms, such as pain, paresthesia, fatigue, and limitation of range of motion."

The prevalence of musculoskeletal symptoms in workers is an important topic in the field of occupational health and ergonomics, and are: the pains, discomforts and problems related to the muscles, bones, tendons, ligaments and joints of the body. Such symptoms can be caused or aggravated by work activities and are often associated with repetitive movements, inadequate postures, intense physical exertion, vibrations and other factors related to the work environment. Vieira and Alcântara (2013, p. 53) "among them, the complaints and chronic pain related to the spine stand out. These pains have deserved to be highlighted by the others, when associated with the working class, for their disabling characteristic."

The occurrence of musculoskeletal symptoms in workers can have a significant impact both on their quality of life and on the productivity of companies. In addition, these symptoms can lead to absences from work, sick leave, and even early retirement (Strong, 2002). Studies by Soares et al., (2019) show that some professions have a higher risk of developing these symptoms than others. Workers who perform repetitive activities are more susceptible to musculoskeletal problems compared to other occupations.



In addition, workplace ergonomics is a key factor in preventing musculoskeletal symptoms. Ergonomics aims to adapt the work to the worker, ensuring that the tasks are carried out with the least possible physical overload. Adjustable furniture, proper tools, regular breaks, and training in correct postures are some of the ergonomic interventions that can help reduce the incidence of musculoskeletal symptoms and low back pain. Other determinants can also influence the prevalence of these symptoms, such as the time of exposure to work, the weekly workload, the type of employment contract and the level of social support in the work environment (Porto and Martins, 2019).

It is essential that employers, workers and health professionals are aware of the importance of identifying and preventing the symptoms of chronic low back pain and musculoskeletal pain in the workplace. Occupational health programs, awareness campaigns, and ergonomic training can be effective in reducing the impact of these problems and promoting a healthier, more productive work environment. In this sense, Lima et al. (2022) demonstrate that the prevalence of musculoskeletal symptoms in workers is a public health challenge that requires attention and integrated actions to promote the health and well-being of workers, improving quality of life and productivity in the work environment.

To mitigate these sequelae, it is important to adopt prevention and health promotion measures in the workplace, such as teaching workers to adopt proper postures and to use ergonomic equipment can help reduce the risk of work-related low back pain. Encouraging regular breaks during work and promoting stretching exercises can help relieve muscle tension and improve blood circulation. The studies of Trombim, Andrioli and Longer (2021, p. 57) conclude that this mode is:

The best way to intervene with these individuals, in order to minimize the consequences of chronic low back pain on their health status and quality of life and the impact it has on health services.

Implementing workload management policies in order to properly distribute tasks, limit overwork, and support performing heavy tasks can reduce physical overhead and the risk of low back pain. In this sense, one should also encourage a healthy lifestyle, with regular physical activity, balanced diet and stress management, can help strengthen the health of workers and reduce the risk of low back pain (Simas, et al., 2020).

Low back pain, as a common condition of low back pain, may be related to the Sustainable Development Goals (SDGs) established by the United Nations (UN). The SDGs are global goals that aim to promote sustainable development in a number of areas, including health and well-being. Thus, with regard to SDG 3 that aims to ensure a healthy life and promote well-being for all, at all ages, low back pain results negatively in the healthy condition of people's lives and can lead to restrictions on daily activities, affecting physical and emotional well-being. When facing low back pain, it is



necessary to ensure access to adequate health services, promotion of healthy habits and effective treatment to improve the health and well-being of individuals (Bento et al., 2020).

Similarly, SDG 8, which aims to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, may have low back pain as a problem, as it is one of the main causes of disability and absence from work. The adoption of appropriate coping strategies, such as effective treatment, rehabilitation and prevention of low back pain, can contribute to reducing the economic and social impact, ensuring the productive participation of people in the labor market (Lima et al., 2022).

## 2 FINAL CONSIDERATIONS

Chronic pain in the lumbar region can have a negative effect on the lives of individuals, affecting the performance of their daily activities, their functional capacity, sleep quality and emotional well-being. It is often related to limitations in professional, recreational and social activities, which can increase disability and lead to an economic impact for the state.

In addition to being one of the possible causes of professional limitation, low back pain can also be caused in the professional scope of the individual, being one of the consequences on the health of the worker.

This shows that the working conditions and health of the professional are significant, since this condition can cause anomalies in health and general well-being, in addition to influencing the ability to perform work tasks, which becomes an economic problem to be analyzed.

Thus, the treatment of low back pain should be strongly reinforced in the SUS, involving an integral approach, with the participation of different health professionals, such as doctors, physiotherapists, psychologists, among others, working collaboratively to offer effective and personalized care to patients.

Implementing work management policies can benefit the population and reduce the risk of low back pain incidence. In addition, encouraging a healthy lifestyle, with regular physical activity, balanced diet and stress management, can help strengthen the health of the citizen.

The prevention and treatment of low back pain can be related to the Sustainable Development Goals established by the UN, due to ensuring a healthy life and promoting well-being, favoring sustained, inclusive and sustainable economic growth, providing full and productive employment, as well as decent work for all.



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