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Research Article

Assessment of Low Back Pain A etiology and Prevention Strategies in Adult Libyan Patients

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Abstract

One of the most common problems seen in the office of a primary care physician is low back pain. Backache can have a variety of causes. The aim of this study is to assess the various etiological, occupational, and risk factors for low back pain, as well as its correlation with the patient's age, sex, and lifestyle. Materials and methods: This study collected patients from private clinics and hospitals in Libya between September and November 2024, admitted them, and treated them in the orthopedic department. Many people suffer from low back discomfort, which can be challenging to diagnose. In conclusion, orthopedists must acknowledge the diagnostic uncertainty that often accompanies this illness. The occurrence of incapacitating back pain can be significantly reduced by identifying the etiological and risk factors, the type of occupation, the origin of the pain, implementing preventive measures, and assisting patients in their recovery.

Keywords: low back pain, patients, risk factors, and etiological factors

Introduction

Global LBP surveys show a 1-month prevalence of 19–43% and a point prevalence of 15–30%. The frequency of LBP is estimated to be between 51 and 85% worldwide. For clinicians, it can be difficult and contentious [1]. Acute low back pain affects most people at some point in their lives. For both men and women, LBP is the primary reason for activity limitation. Typically, the first episode happens between the ages of 21 and 40. Moderate to severe pain can be incapacitating [1]. More than 500 million people worldwide suffer from low back pain (LBP), a prevalent medical problem. In terms of years lived with a disability, it comes in first place worldwide. Most individuals recover in 12 weeks after an acute episode of LBP [2,3].

The various causes of CLBP are addressed by multidisciplinary biopsychosocial rehabilitation (MBR). They incorporate patient education, psychosocial therapies, and active physical therapy. A comprehensive analysis of randomised, controlled clinical trials has confirmed that MBR programs are superior to standard care or physical therapy treatment [3,4]. Most patients recover in 12 weeks after an acute episode of LBP [2]. Nevertheless, 10–20% of individuals have persistent, chronic LBP that lasts longer than 12 weeks [5,6]. Chronic low back pain (CLBP) is predicted by a number of factors, including psychological (depressive symptoms and fear-avoidance beliefs), lifestyle (low levels of physical activity), social (low educational attainment and job dissatisfaction), and symptom-related (previous episodes and back pain intensity) [6].

One of the most prevalent complaints among adults is chronic back pain, which can lead to disability, decreased functionality, and missed work. This ailment comprises low back pain, sciatica, neck pain, and chest pain. The most common causes of these pains include radiculopathy, spondylosis, intervertebral disc abnormalities, and various musculoskeletal diseases [7].

The lifestyle (such as weak muscles, lack of exercise, smoking, and obesity) and occupational (such as bending, stooping, heavy lifting, twisting, extended sitting, and occasionally uncomfortable posture at work) risk factors are changeable. Having children, growing older, having experienced LBP in the past, and having significant spinal abnormalities are among the risk factors that cannot be changed [1]. The goal of a comprehensive history of pain is to collect characteristics of cLBP that can be utilised to guide the physical examination, ask appropriate questions, and look into additional co-morbid diseases that might affect treatment. In many cases, onset will involve recording a specific inciting incident, if one happened. For example, pain that began following a car accident or a fall at work, as opposed to pain that began without trauma or a particular injury/event [8]. Exams, academic

pressure, demanding work schedules, and heavy job duties are some of the circumstances that lead to the usage of specific medications [9].

The aim of study:

is to assess the many a etiological, occupational, and risk factors for low back pain, as well as its correlation with the patient's age, sex, and lifestyle.

Materials and methods:

This study collected patients from private clinics and hospitals in Libya between September and November 2024, admitted them, and treated them in the orthopedic department.

This study was the target number 100 patients with low back pain from private clinics and hospital in Libya. Information about the patients' occupation, education, smoking, obesity, diabetes, alcohol use, TB, osteoporosis, osteoarthritis, and traumatic history was gathered. The patient's age, sex, length of symptoms, residence, and the reason for their low back pain were recorded on a proforma. Additionally, a thorough neurological evaluation of the lower limbs was performed. The outcomes were examined and documented. Then the data were used in simple statistical.

Results:

100 patients with low back pain were followed and treated in orthopedic departments at various hospitals and clinics in Libya. These patients ranged in age: 16% between 20-30 years old, 21% between 31-40, 22% between 41-50 years old, 27% between 51-60 years old, and 14% > 60 years old. The majority of patients were 56% female and 44% male (Table 1).

Variable	N (%)
Age group	
20-30	16
31-40	21
41-50	22
51-60	27
>60	14
Gender	
Female	56
Male	44

Table 1: Distribution of low back pain with age and gender

The distribution of risk factors for patients with low back pain: 54% had obesity, 30% were smoking, and 24% had diabetes (Table 2).

Risk factors	N (%)
Obesity	54
Smoking	30
Diabetes	24
Alcohol Consumption	0

Table 2: Distribution of risk factors

The distribution of etiological factors of patients with low back pain: 2% had tuberculosis, 19% osteoporosis, 31% osteoarthritis, 20% depression (Table 3).

A etiological factors	N (%)
Tuberculosis	2
Osteoporosis	19
Osteoarthritis	31
Depression	20

Table 3: Distribution of a etiological factors

The distribution of physical risk factors with low back pain: 79% had heavy physical work, 13% bad posture, 58% prolonged sitting / standing, 36% history of fall/trauma, and 10% unknown (Table 4).

Physical risk factors	N (%)
Heavy Physical work	79
Bad posture	13
Prolonged sitting / standing	58
History of fall/trauma	36
Unknown	10

Table 4: Distribution of physical risk factors

The common causes were lumbar spondylosis, lumbar spinal stenosis and spondylolisthesis of patients with low back pain: 10% female and 3% male from lumbar spondylosis, 25% female and 16% male from disc prolapse, 9% female and 5% male from spondylolisthesis, 22% female and 12% male from lumbar spinal stenosis, 13% female and 20% male from fractures, 1% female from tuberculosis (Koch`s) spine, 10% female and 5% male from others (Table 5). We used chi square, the p-value is 0.0048, (significant at $p < 0.01$).

Causes	Female N (%)	Male N(%) P value 0.005
Lumbar Spondylosis	10	3
Disc Prolapse	25	16
Spondylolisthesis	9	5

Lumbar spinal stenosis	22	12
Fractures	13	20
Tuberculosis (Koch`s) spine	1	0
Others	10	5

Table 5: Common causes were lumbar spondylosis, lumbar spinal stenosis and spondylolisthesis

Discussion:

About 80 to 90 percent of all occurrences of low back pain presumably result from the interplay of biological, psychological, and social variables [10]. There are two types of low back pain: nonspecific (pain and other symptoms resulting from certain pathophysiological mechanisms of nonspinal or spinal origin) and specific [10].

In this study we found the most patients ranged in age between 31-60 years old, and almost all were female because these were related to many categories that they got low back pain. A 1966 study that indicated that in a general practice setting, the cause of cLBP could not be determined in 79% of males and 89% of females served as the basis for the phrase "nonspecific low back pain" [8]. LBP is now the third most common cause of work disability in France and the main reason why people under 45 are excluded from the workforce [11]. Women are more likely than men to experience low back discomfort, according to several research. In 2017, the Global Burden of Disease Study found that the most common cause of disability for women globally was low back pain. Anatomical variations, pregnancy-related alterations, and hormonal changes during menstruation could all be contributing factors to this higher frequency in women [12].

For the distribution of risk factors in this study, we found the most patients had obesity, diabetes, and smoking. Compared to non-diabetics, osteoarthritic cartilages in diabetics are more sensitive to pro-inflammatory stress [13]. Patients with diabetes may exhibit an inflammatory phenotype as a result of persistent hyperglycemia and interleukin-1 beta (IL-1β) stress, which damages insulin target receptors and beta cells [13]. Obesity, or the buildup of excess fat, is closely associated with diabetes and has a number of negative impacts on patients' health. The link between obesity and chronic joint pain is well documented because obesity increases mechanical stress and pro-inflammatory responses [13]. The perception of pain may rise with increased nicotine exposure. Additionally, smoking raises the amount of pro-inflammatory cytokines in the blood, which communicate with the central nervous system and may intensify pain. Additionally, it has been proposed that smoking exacerbates inflammation [14].

For the distribution of etiological factors for this study, we found most patients had osteoporosis, osteoarthritis, and depression. A person's risk of developing osteoporosis is increased by a number of factors, including uncontrollable ones like a family history of the disease, ageing, female gender, menopause, small stature, and controllable ones like alcohol, cigarettes, a low body mass index, a sedentary lifestyle, a lack of calcium and vitamin D intake, high levels of sodium, protein, and caffeine, as well as medical and pharmaceutical factors like long-term corticosteroid use, and illnesses like rheumatoid arthritis, thyroid, and parathyroid disorders [15]. Conversely, depression is characterised by a depressed, emptied-out, or agitated mood. A person's ability to operate can be greatly impacted by the physical and cognitive changes that accompany both anxiety and depression [16].

For the distribution of risk factors of this study, all or almost all patients had heavy physical work, prolonged sitting/standing, a history of fall/trauma, bad posture, and unknown. These factors increase the risk factor of low back pain

for patients. Ergonomics is a known risk factor for lower back pain, and the majority of occupational risk factors are associated with the kinds of tasks carried out at work. These elements consist of uncomfortable postures, manual material handling, and other [17]. highlighting the impact of additional individual traits like age, gender, height, weight, etc. The first point of view's proponents consider a variety of issues, including prolonged sitting and bad posture, to be more detrimental to people's health than others. On the other hand, even contends that bad posture doesn't exist [18]. Examined in detail the physical demands of both job and play as risk factors for back discomfort. Back discomfort risk factors included manual handling, bending, twisting, and heavy physical labour. There was no evidence for sports, sitting, standing or walking, or overall physical activity during leisure time. However, physical load exposure is not restricted to a single back-threatening action; rather, it includes a variety of motions such lifting, carrying, flexion, rotation, and tugging [19].

For common causes were lumbar spondylosis, lumbar spinal stenosis and spondylolisthesis in this study found more clear. For a long time, several activities have been linked to disc production. According to retrospective research, the following factors raise the risk and severity of spondylosis: body mass index (BMI), incident back trauma, everyday spine loading (twisting, lifting, bending, and prolonged nonneutral postures), and whole body vibration (such as driving a car). [20]. The chronology of pain, pain radiation, and precipitating events should all be covered in this history. Previous trauma occurrences should be carefully considered by the clinician. Leaning forward or sitting down can help decompress low-grade slips and stenotic spinal canals. Because the spinal column is in forward flexion during everyday activities like pulling a grocery cart or walking upstairs, it is important to take note of patient comments like less pain [21].

Conclusion:

Many people suffer from low back discomfort, which can be challenging to diagnose. Orthopaedists have to acknowledge the diagnostic uncertainty that frequently comes along with the illness. The occurrence of incapacitating back pain can be significantly decreased by identifying the etiological and risk factors, the type of occupation, the origin of the pain, putting preventive measures in place, and assisting patients in recovering. Female patients who present with back pain and an associated pelvic inflammatory disease complaint ought to have any underlying gynaecological pathology looked into and treated.

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