

The Silent Epidemic: Why low back pain is rising among young adults and how we can prevent it

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ABSTRACT

According to the records, 80 to 90% of people suffer from LBP. It is becoming increasingly common among young adults and it is spreading and becoming a public health concern. It is increasing day by day just because of a poor and sedentary lifestyle, a lack of physical activity, obesity, and poor posture. It can be prevented by managing lifestyle, improving daily habits, regular exercise, and a healthy diet. Basically, LBP is a discomfort between the lower ribs and the glutes. It can feel like a dull ache or a sharp sting, and it makes moving or standing straight hard. LBP causes include disc injuries, impaired posture, muscular weakness, and some other diseases like arthritis, osteoporosis, spondylitis, etc. Early diagnosis and management can save us from chronic pain; non-specific LBP can be managed with manual therapies (heat, massage, acupuncture, spinal adjustment through chiropractic techniques) and exercise therapies, rest, and medication.

Keywords: Epidemic, low back pain, adults

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Introduction

Low back pain (LBP) is a highly prevalent condition affecting the muscles, bones, and joints that causes disability and affects millions of people across all age groups. It is becoming a major public health concern because it affects physical activities, work productivity, and quality of life. LBP is the pain that occurs in the area between the lower ribs and extending toward the buttocks with or without pain radiating to the legs. The leading condition related to disability is pain in the lower back. LBP is the leading cause of impairment throughout the world that can affect routine work. Most probably, people who suffer from LBP may face emotional distress due there diminished well-being and they face difficulties in engaging themselves in daily work and community engagement. Approximately 85–90% of individuals with LBP have no identifiable specific anatomical pathology source; therefore classified as having nonspecific LBP. It is generally considered as osteomuscular in origin, often arising due to overexertion, strain, or injury. Most individuals report an episode of LBP at least once during their lifetime [1,12].

World Health Organization (WHO) classifies people aged 45 to 59 years as middle-aged; the yearly burden of LBP is estimated to be around 30–40%. This is considerably higher than among adolescents aged (10–19 years), where the prevalence is about 10-15%, and young adults aged (20–44 years), where it ranges from 20-25%. Among adults aged 60 years and older, the prevalence is slightly higher, at approximately 30-50% [2]. Although LBP is mostly attributed to middle-aged and older adults, its prevalence among young adults is also increasing day by day because of their sedentary lifestyle, over screen time, poor posture, lack of physical activity, obesity, and mental stress [3].

What is low back pain (LBP)?

LBP is an indication of pain felt in lower part of the back, generally between the lower end of the rib area and the gluteal region. The pain may sometimes extend into one leg or both legs, and in few cases, may occur along with neurological symptoms [2].

Several factors can increase the risk of developing LBP including age, body weight, weak muscular strength, psychological well-being, occupation, and daily activities.

Causes of low back pain

LBP arises from different conditions rather than representing a single disease. Its underlying causes may be categorised into intrinsic, extrinsic, and temporary causes [4].

Intrinsic causes

Intrinsic causes arise due to structural or conditional changes occurs in the human body that may include;

1. Mechanical causes: These causes involve problems that affect our spine and our body structure such as trauma, fractures, muscles or ligament sprains, disc degeneration, disc herniation, spinal stenosis, spondylosis, scoliosis, spondylolisthesis, facet joint disorder.

2. Organic causes: LBP may also occur as a result of these diseases such as tumor, infectious disease, ankylosing spondylitis, tuberculosis, degeneration, osteoarthritis, metabolic disorders, osteoporosis.

Extrinsic causes

Many cases of LBP are related to external factors of spinal structures that may include muscular diseases, internal organ diseases, vascular conditions, and psychological problems [5].

Temporary causes

Temporary conditions may be produced for short-term or temporary LBP like; pregnancy, menstrual cramps, and back pain associated with labor.

Symptoms of low back pain

LBP starts from the lumbar region and radiates to the legs, front, side, or back, or may be limited to the lower back. Mostly the symptoms appear like stiffness, muscle spasm, and poor posture; due to this, the pain becomes worse with activity, at night or with long-term sitting. Compression of any nerve of the lower limb causes numbness in the leg; due to this, the foot loses the ability to flex downward. Because of this, the person loses the ability to stand on toes due to first sacral nerve compression. Other example is difficulty in raising the big toe due to fifth lumbar nerve compression [4]. Psychological factors like emotional strain, depression, or anxiety add further complexity making diagnosis and treatment difficult. It is believed that 80 to 90 % of cases of LBP are non-identifiable, and other cases are linked with specific pain generators [6].

Why is low back pain increasing in young adults?

Now a days number of cases of LBP is seen in young individuals, with the highest frequency that is maximum in ages 20-29 years worldwide. There are multiple contributing factors, such as obesity, smoking, family history, stress, physical inactivity, heavy backpacks and improper lifting, sports and gym-related injuries, mental health, poor sleep habits, work and academic pressure [7].

Three adjustable predisposing factors that play a role in the worldwide challenge of LBP are occupational ergonomic factors, cigarette smoking, and elevated BMI. Among these, work-related ergonomic factors play an important role; nearly a quarter of LBP cases are linked to job-related strain. Risky occupational patterns include physical effort, awkward postures, recurrent motions, vibrational exposure, heavy lifting, kneeling, squatting, and climbing and studies connect heavy labor directly to LBP progression. Ironically, as more jobs shift toward sedentary work styles, this shift may unexpectedly increase the occurrence rate of chronic LBP. Much of the existing research draws on Global Burden of Disease data sources to analyze the worldwide prevalence changes over time through occupational ergonomic factors specifically remain under study [8].

How do manual therapies treat LBP?

Manual therapy is a notable non-surgical approach for treating LBP. These therapies include hands-on techniques such as chiropractic techniques, traditional acupuncture techniques, spinal mobilization, and soft tissue

massage performed by healthcare professionals. These techniques may help in reducing pain, improving movement, and help in restoring function, specifically when combined with exercises, patient education, and safety measures.

For acute LBP, spinal manipulation therapy has shown only modest short-term gains in pain and function up to 6 weeks, with short-term mild bone and muscle damage. Many doctors depend on NSAIDs, opioids, and neurotropic drugs, or steroid injections and surgery, largely because these feel easier and more effective as their main approach. Since possible or clear chance related to these tools over drug-free approaches, considered to have less harmful effects. In previous years, many studies have investigated chronic LBP; these options include spinal manipulation therapy, behavioral therapy, exercise therapy, TENS, interferential current therapy, low-level laser therapy, yoga, and surface heat therapy [9].

Impact of exercise therapy on LBP

Exercise therapy, a structured physical activity aimed at improving fitness, takes a different approach in reducing pain and restriction through movement rather than passive treatment. Common types include muscle strengthening, stretching, core work, mobility and flexibility and mobilizing training, aerobic exercises, functional restoration, Pilates, resistance training, McKenzie therapy, and yoga. Exercise therapy should be tailored to the patient's situation and progressed gradually under a professional therapist [10]. Artificial intelligence, with the creation of smart mobile applications and wearable devices, helps monitor daily movement and provide immediate feedback, promoting safe, independent, home-based recovery [11].

LBP can also be prevented by maintaining our healthy weight that reduces pressure on vertebrae, by strengthening abdominal, hip, and back muscles, by safely lifting weights, and by warming up before any physical activity or sport.

Conclusion

LBP is a common health problem that is no longer limited to older adults; it is also affecting young adults. This is common among the young generation just because of their poor posture, their sedentary lifestyle, long hours of sitting, lack of physical activity, obesity, stress, improper weight lifting, and also eating unhealthy foods instead of taking proper dietary

sources. Although LBP stands as a major cause of pain and functional impairment around the world, it should not be considered a normal part of daily life. Early diagnosis and timely management of LBP save us from chronic and prolonged back pain, and it reduces the impact on work and life quality.

Fortunately, many cases of LBP with early diagnosis can be managed through simple lifestyle changes. Regular exercise for back strengthening is enough to manage or prevent LBP.

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