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### **Prevalence of low back pain in college students: A cross sectional study**

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#### **Abstract**

Low back pain is a very common health problem worldwide and a major cause of disability-affecting performance at work and general well-being. Low back pain can be acute, sub-acute, or chronic. Though several risk factors have been identified (including occupational posture, depressive moods, obesity, body height and age), the causes of the onset of low back pain remain obscure and diagnosis difficult to make. Back pain is not a disease but a constellation of symptoms. The subjects will be enrolled by convenience sampling of students from college. The data collected will include demographic data such as Name, Age, Sex, Contact information. Clinical data will include height, weight and BMI. Other clinical data are collected as subjective and objective measures. Out of 50 male college students 12 members had regular back pain & out of 50 female college students 10 members had back pain. In the present study, commonest risk factors associated with lower back pain are lack of physical activity followed by depression, smoking and alcohol.

**Keywords:** Low back pain, cross-sectional study, college students

#### **Introduction**

Low back pain is a very common health problem worldwide and a major cause of disability - affecting performance at work and general well-being. Low back pain can be acute, sub-acute, or chronic. Though several risk factors have been identified (including occupational posture, depressive moods, obesity, body height and age), the causes of the onset of low back pain remain obscure and diagnosis difficult to make. Back pain is not a disease but a constellation of symptoms. In most cases, the origins remain unknown. Low back pain affects people of all ages, from children to the elderly, and is a very frequent reason for medical consultations. The 2010 Global Burden of Disease Study estimated that low back pain is among the top 10 diseases and injuries that account for the highest number of DALYs worldwide <sup>[1]</sup>.

It is difficult to estimate the incidence of low back pain as the incidence of first-ever episodes of low back pain is already high by early adulthood and symptoms tend to recur over time. The lifetime prevalence of non-specific (common) low back pain is estimated at 60% to 70% in industrialized countries (one-year prevalence 15% to 45%, adult incidence 5% per year). The prevalence rate for children and adolescents is lower than that seen in adults but is rising <sup>[2, 3]</sup>. Prevalence increases and peaks between the ages of 35 and 55. As the world population ages, low back pain will increase substantially due to the deterioration of the intervertebral discs in older people. Low back pain is the leading cause of activity limitation and work absence throughout much of the world, imposing a high economic burden on individuals, families, communities, industry and governments <sup>[4]</sup>.

Several studies have been performed in Europe to evaluate the social and economic impact of low back pain. In the United Kingdom, low back pain was identified as the most common cause of disability in young adults, with more than 100 million workdays lost per year. In Sweden, a survey suggested that low back pain accounted for a quadrupling of the number of work days lost from 7 million in 1980 to 28 million by 1987. However, the authors state that the existence of social compensation systems in Sweden might account for some of this increase. In the United States, an estimated 149 million work days are lost every year because of low back pain, with total costs estimated to be US\$ 100 to 200 billion a year (of which two-thirds is due to lost wages and lower productivity).

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At present low back pain is treated mainly with analgesics. The causes of lower back pain are rarely addressed. Alternative treatments include physical therapy, rehabilitation and spinal manipulation. Disc surgery remains the last option when all other strategies have failed, but the outcomes are disappointing.

### Objective

This cross-sectional study was undertaken to identify the prevalence of low back pain among college students.

### Methodology

The subjects will be enrolled by convenience sampling of students from college. The data collected will include demographic data such as Name, Age, Sex, Contact information. Clinical data will include height, weight and BMI. Other clinical data are collected as subjective and objective measures.

### Results

**Table 1:** Age and Sex wise distribution of cases

Age group	Male		Female	
	With back pain	Without back pain	With back pain	Without back pain
18-20 years	5	15	4	16
21-22 years	4	11	3	12
23-25 years	3	12	3	12
Total	12	38	10	50

Out of 50 male college students 12 members had regular back pain & out of 50 female college students 10 members had back pain.

**Table 2:** Risk Factors

Risk Factors	Number of cases
low levels of physical activity	13
poor self-related health	11
psychological distress	9
Smoking & alcohol	7
dissatisfaction with employment	4
Overweight	7
Over height	4

In the present study, commonest risk factors associated with lower back pain are lack of physical activity followed by depression, smoking and alcohol.

### Discussion

Out of 50 male college students 12 members had regular back pain & out of 50 female college students 10 members had back pain. In the present study, commonest risk factors associated with lower back pain are lack of physical activity followed by depression, smoking and alcohol.

Intervertebral discs undergo age-related degenerative changes that contribute to some of the most common causes of impairment and disability for middle-aged and older persons. Aging is an evolutionary and dynamic process that results in degenerative changes, not only in the intervertebral discs, but also in ligaments and bones, accounting for most diseases and disorders of the aging spine. Kirkaldy-Willis and co-workers described the pathogenesis of degenerative changes in the aging spine, entailing three phases, beginning with dysfunction and progressing to unstable and stabilizing phases, in the context of a three-joint complex that describes

the articulation between two vertebrae as changes within each member of this joint complex will result in changes in others [5]. Bernick and colleagues [18] investigated the age changes of the annulus fibrosus in human intervertebral discs and reported that age changes in the annulus were first observed in the vertebrae of persons aged 41 to 60 years and became progressively severe through advanced age (60 to 83 years). Increasing age has been associated with an increase in musculoskeletal symptoms. A US national survey of physician visits among patients age 75 or older revealed that back pain is the third most frequently reported symptom in general and the most commonly reported in the musculoskeletal system. In another study, 17% of total back problem visits occurred in the 65-years-and-older age group. A Canadian epidemiological report ranked back problems as the third leading cause of chronic health problems in the 65-years-and-older age category for women and the fourth leading cause of such problems for men in the same age category [6].

Health statistics routinely demonstrate that women have a higher morbidity from acute and nonfatal chronic diseases. Indeed, in most epidemiological pain research, women are more likely than men to report a variety of temporary and persistent pains, in addition to moderate or severe pains from menstruation, pregnancy and childbirth. However, only small gender differences were reported in the majority of epidemiological investigations of the prevalence of low back pain. While many studies reported higher rates of incidence of low back pain in women, some studies found that men reported more low back pain at the time of the interview than women [7].

A number of studies have shown that there is a relationship between the prevalence of low back pain and height. The evaluations implicated height's contributing to higher-than-average risks of low back pain, which claim a clear-cut, direct relation between body height and the risk of sciatica from a herniated lumbar intervertebral disc, even though tallness does not seem to predict other types of low back pain. Higher incidences of disc protrusions were also reported in taller children. However, some authors have reported no such correlation [8].

Obesity is a serious medical problem that is increasing in prevalence, affecting millions, and of great interest to the public. To articulate the burden of obesity, investigators have used indicators such as prevalence economic cost and association with risk factors and diseases [9].

Smoking of tobacco is considered as the single most preventable cause of death and disease in the United States. Even though the negative health consequences associated with cigarette smoking and the health benefits of quitting smoking are well established, approximately 26% of all adults in the United States continue to smoke and recent estimates suggest that prevalence is increasing in youth.

Postural deformities such as scoliosis, kyphosis, hyperlordosis and leg-length discrepancy do not seem to predispose to low back pain in general. Scoliosis, which was most vigorously investigated, showed no hard evidence of true association with low back pain, except in curves of 80 or more. Similarly, lordosis showed no correlation with the incidence of low back pain. There have been numerous attempts to discover causative factors associated with low back pain resulting from unequal leg length.

Among the factors most commonly suspected of accelerating degenerative changes in the discs are various occupational and leisure time physical-loading conditions. However, Porter

raised a different view that hard work could prevent disc protrusion by an adaptive increase in annular and ligamentous strength. It is also a common belief of physicians, as well as the general public and patients that inactivity and lack of exercise increase the level of back pain, as well as disability.

### Conclusion

Considering all these factors and their relation to LBA, prevention of LBA and disability is strongly related to the endurance and physical activity. Hence we can reduce the incidences of LBA or Disability at a very early age by good physical exercises. Back strengthening exercises can build up strength and increase the endurance levels. Depression, Anxiety and Stress has also been a significant factor for LBA and it can be prevented by meditation and spending some time away from stressful work. And persistence of these factors causes chronic LBA and disability in the younger population hence prevention in the early age group can significantly reduce the disease burden and the days lost to disability.

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