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Prevalence, Associated Risk Factors of Low Back Pain and its Impact on the Activities of Daily Living Among College Students: A Descriptive Study

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***Abstract*: College students are at a high risk of low back pain (LBP) for a multitude of reasons, including mechanical, physical, behavioral, and psychological factors. Low back discomfort in students is caused by anthropometric traits, gender, computer use, classroom furnishings, and ergonomic issues, particularly sitting position. Long periods of sitting have been linked to the development of low back discomfort. The goal of this study was to find out how common low back pain is among college students, as well as its related risk factors and influence on everyday activities. In a selected nursing institution in Bhilai, Chhattisgarh, a descriptive study was done on 60 easily recruited college students aged 18 to 24 years. The researchers employed a structured questionnaire including questions about demographics, prevalence, risk factors, and the Roland Morris Disability Questionnaire (RMQD) to find the impact of low back pain. Out of the 60 students who were questioned, 48 (or 80%) said they were suffering from low back pain. Point, 12-month and lifetime prevalence were 45.8%, 41.7% and 12.5% respectively There were 24 people who reported moderate pain (50%) and 20 people who reported mild pain (41.65%). Correct posture, prolonged sitting hours, psychosocial factors like stress, individual factors like no milk intake and less exposure to sunlight, and clinical activity-related factors like standing for more than 4 hours while on clinical duty and poor body mechanics while performing nursing interventions were found to be the most common risk factors for low back pain. 18 (37.5%) had a mild disability in performing daily activities, 12 (25%) had a moderate disability, and 6 (12.5%) had a severe disability in doing daily activities. The majority of nursing students (45.8%) missed college due to low back pain. According to the findings, there is a high frequency of LBP among college students.**

***Keywords*: Low back pain, prevalence, risk factors, impact**

1. Introduction

Low back pain (LBP) is a common form of ache that affects almost everyone on the world. It's become a major health concern. It is also the main cause of years of disability all over the world. The rate of increase is faster in low- and middle-income countries.

Low back pain (LBP) is defined as "pain in the area on the posterior aspect of the body from the lower border of the twelfth ribs to the lower gluteal folds with or without pain referred into one or both lower limbs that lasts for at least one day" according to Global Burden of Disease study. In a survey of 1089 children and adolescents aged 10 to 19 years old from the southeast of Poland, 830 (76.2%) reported back pain (Kedra A et al 2013). Back pain was mostly reported in the lumbar region (74.8 %). Mild aches and pains made up 44.7 percent of the total. Back discomfort was considerably more common in girls than in boys (52.2% versus 47.8%).

De Vitta A et al (2011) indicates that despite these numbers a definitive diagnosis on the possible causes of LBP is not made in 90 to 95 percent of cases due to the complex nature of the condition. Some authors, on the other hand, link the existence of LBP to a variety of factors, including sociodemographic, health, lifestyle, and occupational factors. One of the most common causes of back discomfort in students is sitting in an inappropriate position when studying or attending lectures for long periods of time. Students frequently stoop to ensure that they can focus better on their books and laptops. This causes the spine to expand out of its usual position, resulting in back pain.

LBP is precipitated by studying for >5 hours on an average a The LBP prevalence was 42.4% per year and 22.8% per week of coaching institutes of Indian Administrative Service aspirants and medical postgraduate aspirants in Delhi from August to November 2014 (Ganeshan S et al 2017). Nursing is a vocation with an increased risk of developing low back pain. Healthcare professionals are particularly susceptible to lower back pain due to the nature of their work. Low back pain in adolescent nurses is caused by a variety of physical and psychosocial risk factors. Among the main causes of low back pain in nurses are activities that require heavy lifting, such as transferring and carrying patients as part of nursing care.

The investigator during her experience while teaching in nursing college have found that the colleges tend to have

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demanding curricula, making students prone to a sedentary lifestyle and possibly increasing the risk of Low back pain. Lifestyle factors, including lack of physical exercise, and short sleep hours, are also considered to be risk factors of Low back pain. The investigator observed that many mechanical, physical, behavioral, and psychological factors have a role in the development of low back pain. Adolescents' anthropometric features, gender, time spent on computer, school furniture, and ergonomic problems, including sitting position, are the risk factors for the occurrence of low back pain. It was also observed that the students during clinical posting while doing interventions on patients fail to maintain proper body mechanics. They assumed various wrong positions like keeping the back curved or twisted which contributed to low back pain. Keeping in view all the above the investigator decided to assess the prevalence, risk factors of low pain in college and its impact on their daily activities.

Moreover, very few statistics are available on the prevalence of LBP in India. Further, there is a paucity of studies of LBP and its associated risk factors among younger age groups, including medical and nursing students. The social impact of LBP in terms of cost and impairment can be properly measured and solutions created if the real prevalence rate is established.

2. Methodology

This is a cross sectional study and the subjects were chosen using convenient sampling. It was conducted on 60students of nursing college at Durg Chhattisgarh. The duration of the study was one month. Self-administered questionnaires with consent form were distributed to all the participants. Participants were asked to complete the questionnaire and returned to the concerned person. Both gender of undergraduate nursing students aged between 18 to 24 years were included in the study Each student was required to complete an anonymous questionnaire that asked about their demographic characteristics (age, gender, and place of residence, among other things), the prevalence of LBP (lifetime, 12-month, and point prevalence), and the impact of pain on daily functioning (as measured by the Modified Roland Morris Disability Questionnaire). LBP was described as discomfort between the inferior edge of the 12th rib and the inferior gluteal folds in students. The lifetime prevalence was calculated as the percentage of respondents who had ever experienced LBP in their lifetime. The 12-month prevalence referred to LBP in the previous year, while the point prevalence referred to LBP in the previous month.

3. Results

1) Prevalence of Low Back Pain

The findings reveal illustrates that out of 60 students, 48 (80%) experienced low back pain, with 22 (45.8%) reporting LBP in the previous month (point prevalence), 20 (41.7%) reporting LBP in the previous year (12-month prevalence), and 6 (12.5%) reporting LBP at some point in their lives (life time prevalence). Female nursing students had considerably greater lifetime, 12-month, and point prevalence of LBP than male nursing students. The average age of the participants in the study was 22.46 years. The majority of the students 30(62.5%) felt nonspecific low back pain.

2) Pain population characteristics

The pain population consisted of 48 individuals. The pain was assessed using 10-point numerical pain scale. It was found that 24(50%) reported moderate pain,20(41.65) had mild pain and 3(6.25%) experienced severe low back pain .24(50%) college students had low back pain associated with leg pain. Over the counter painkillers were used by 18(37.5%) to manage low back pain.

3) The risk factors associated with back pain

In the following study individual risk factors, physical risk factors, clinical activity related risk factors and psychosocial risk factors for low back pain was assessed. The findings related to related to individual risk factors of low back pain reveals that 26(43.3%) never had the habit of drinking milk which is the source of calcium for bone and 18(30%) do not have the habit of exposure to sunlight.

The physical risk factors associated with low back pain shows that 44 (73.3 %) of students chose bad postures in class (body leaning over desk or sitting on the edge of the chair, with one foot on the chair, or body drooping into the chair). They reported a higher prevalence of pain when compared to students who maintained good posture in the classroom (back well supported in the chair and feet flat on the floor). 34 students (56.7%) sat in class for more than 4 hours, suggesting that they were present for extended periods of time. 24 students (40%) stated that they like to study in bed.

Clinical activity related risk factors indicates that 36(60%) spent 3-4 hours standing during clinical duty.48(80%) do not sit during clinical duty.28(46.6%) of students do not maintain body mechanics while doing bedside interventions. In psychosocial risk factors of low back pain, it was found that 54 (90%) experience stress at studies and 58(96.7%) take stress during exam. Psychosocial factors are considered to be a contributing factor of nonspecific low back pain in college students. 42(70%) feel restless and anxious over things

Regarding impact of low back pain on daily activities, table 1 reveals that out of 48 nursing students who reported low back pain 18(37.5%) had mild disability in doing their activities of daily living,12 (25%) had moderate disability, 6 (12.5%) showed severe disability in performing their daily activities. Most of the nursing students 22(45.8%) missed their college due to low back pain.

Table 1
Impact of low back pain on activities

Level of Impact	Frequency	Percentage	Man, SD and mean% of over al score (24)
No disability	12	25	Range: (0-18), Mean =6.37, SD=3.71, Mean %=26.5%
Mild disability	18	37.5	
Moderate disability	12	25	
Severe disability	6	12.5	
Total	48	100	

4. Discussion

In this study investigating the prevalence of low back pain and factors affecting low back pain in a nursing college, the incidence of low back pain was found to be 48(80%). AlShayhan FA and Saadeddin M in their study among health science students found that lifetime prevalence of LBP was 56.6%, 12-month prevalence 48.8%, and point prevalence 21.2%. In this study 22(45.8%) reported presence of LBP in the last month (point prevalence), 20(41.7%) in the last 12 months (12-month prevalence), and 6(12.5%) of them suffered from LBP at some point in their lives (life time prevalence).

It was found that 24(50%) reported moderate pain,20(41.65) had mild pain and 3(6.25%) experienced severe low back pain in the present study. The similar findings were reported by Kędra A et al (2017) among adolescents in which 43.4% had mild low back pain. Sial S, (2020) also shows 50% of engineering students respond that they had mild pain intensity and 2% of participants respond that they had severe pain intensity

Mitchell et al. (2010) reported that a variety of physical and psychological factors (e.g., increased physical activity, higher stress, decreased back muscle endurance, greater posterior pelvic rotation in slump sitting, and more accurate spinal repositioning in sitting) were linked to new onset low back pain. High stress, poor posture, and prolonged sitting were all identified to be risk factors for low back pain in the following study. Tanaka et al. [22] discovered that medical students' stress and coping methods were linked to severe exhaustion. High stress levels in studies and exams were also identified as factors contributing to low back pain in this study.

Clinical activity among nurses shows that prolonged standing hours (60%) and poor body mechanics (46.6%) are factors affecting low back pain, which is supported by Lokesh Raj Joshi, who conducted a study on nurses and found that prolonged standing for 5-6 hours (73.1%) and failure to maintain good posture (58.1%) were factors affecting LBP.

According to Pellise F (2009) a person with LBP symptoms is frequently and temporarily impaired in their ability to do everyday tasks, which has a negative influence on QoL and underscores the need of assessing the resulting functional impairment. The RMDQ (Roland Morris Disability Questionnaire) was used to assess the degree of functional disability in the current study, which revealed mild to moderate (37.5% and 25%, respectively) disability in those who had LBP.

5. Conclusion

According to this study, nursing students are at a somewhat significant risk of low back discomfort. As a result, initiatives to prevent this serious public health issue among the next generation of nursing students must be prioritized. As a result, more information regarding the prevalence of LBP is still needed in order to comprehend the extent of the pain's impacts and, as a result, build better preventive and management strategies.

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