

PREVALENCE OF LOW BACK PAIN AMONG STUDENTS AT SHAHEED MOHTARMA BENAZIR BHUTTO MEDICAL UNIVERSITY, LARKANA

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ABSTRACT

Background: Low back pain (LBP) is a prevalent musculoskeletal disorder among university students, particularly those in medical fields. It is influenced by multiple factors, including prolonged sitting, poor posture, academic stress, and lack of physical activity, which can impact students' academic performance and quality of life. **Objective:** This study aimed to assess the prevalence of LBP among students at Shaheed Mohtarma Benazir Bhutto Medical University (SMBBMU), Larkana. **Methods:** A cross-sectional study was conducted from February to May 2024, involving 260 students from different departments of SMBBMU. Participants were selected using a simple random sampling technique. Data were collected through an online questionnaire assessing demographic characteristics, lifestyle habits, and academic impact. Statistical analysis was performed using SPSS version 22. **Results:** The prevalence of LBP among students was 88.5% (n=230). LBP was more common in females (68.5%) than males (31.5%). Key contributing factors included prolonged sitting (>6 hours daily, 50.4%), poor posture (51.9%), frequent use of electronic devices (76.2%), and academic stress (52.5%). Additionally, 68.8% of students reported that LBP negatively affected their academic performance. **Conclusion:** LBP is highly prevalent among SMBBMU students, particularly in females. The primary contributing factors include prolonged sitting, poor posture, academic stress, and lifestyle habits. Preventive strategies such as ergonomic awareness, physical activity promotion, and stress management

interventions should be implemented to reduce LBP and its impact on students' academic performance.

KEYWORDS: Low back pain, prevalence, medical students, academic stress, risk factors, posture, ergonomics.

INTRODUCTION

Low back pain (LBP) is defined as pain localized below the costal margin and above the inferior gluteal folds. Sometimes, it can affect the legs as well which mainly depends upon the severity of pain or level of injury. LBP is one of the most common health problems among students. It affects students across various age groups, particularly those who are involved in activities that involve prolonged sitting, heavy backpacks, or poor posture, such as adolescents and young adults. Globally LBP is one of the leading causes of disability with profound impact on quality of life.^[1,2]

It has been found that, the Risk factors for Low back pain are non-modifiable and modifiable.^[3,4] The modifiable risk factors are poor posture, lack of exercise or physical activity, stress (academic pressure), sedentary lifestyle, prolonged sitting or standing (5-6 hours), and poor ergonomics, obesity, and smoking.^[5,6] Whereas the nonmodifiable factors are age, family history, gender. There is high prevalence of LBP among medical students ranging from 30% to 45%.^[7,10] The incidence of low back pain among medical students is also reported to increase with academic progression, with the highest rates reported in the later years of medical college. This high prevalence of LBP among medical students can be due to stress, sedentary lifestyle, and spending a lot of time in hospitals which affects them badly and makes it hard for them to focus and attend classes, ultimately affecting their academic performance.^[11]

Objective: The aim of this study was to assess the prevalence of Low back pain (LBP) among students of Shaheed Mohtarma Benazir Bhutto Medical University (SMBBMU).

MATERIALS AND METHODS

Study design, setting and duration

A cross-sectional descriptive study was conducted from February to May 2024, and data was collected from different departments of Shaheed Mohtarma Benazir Bhutto Medical University (SMBBMU), Larkana such as Institute Of Physical Therapy and Rehabilitation

Sciences, Chandka Medical College, Bibi Asifa Dental College, Institute Of Pharmacy, and Benazir College of Nursing at SMBBMU, Larkana, Sindh.

Sampling

For the study, a Simple Random Sampling Technique was used among 260 students who were willing to participate. The study included students of both genders (male & female) who were aged between 19 to 25 years.

Data Collection Tool

To gather the necessary information for the study, an online questionnaire form was employed. The questionnaire comprised of various questions, including demographic characteristics such as age, gender, and department. Additionally, the questions aimed to assess the knowledge of the participants regarding LBP, the posture of students, ergonomics of the work environment, experience of pain due to study stress, onset of pain, and the effects of pain on their academic performance. This approach allowed for a comprehensive analysis of the factors that contribute to LBP among students.

Data Collection Procedure:

A self-constructed survey form was circulated among the students of SMBBMU LARKANA using various social networking platforms.

Data Analysis:

The data was analyzed by using Statistical Package for Social Sciences version 22.

Inclusion and Exclusion Criteria:

The study included students from various departments of SMBBMU who expressed their willingness to participate. However, individuals who had any systematic disease, a history of trauma, or were not willing to sign the informed consent were excluded from the study. In addition, participants from other universities, faculty, and staff were also considered for exclusion. This selection process was carefully designed to ensure the safety and well-being of the participants and to ensure the accuracy of the study's findings.

Ethical Approval: The study followed an ethical framework wherein the Review Committee of the Institute of Physiotherapy & Rehabilitation, SMBBMU, Larkana provided their approval. Permission was obtained from the respective heads of the departments for data collection. The students were given informed consent prior to the data collection, clarifying

that participation is voluntary, their responses will be kept confidential.

RESULTS

The table:1 displays the demographic characteristics of participants which include age, gender, and department. Total sample size was 260. (n=178, 68.5%) were the females and (n=82, 31.5%) were males. The age of the study sample ranged between 19 to 25 with mean age 22 ± 2 years. Meanwhile, departments included were DPT in which participants were, (n=87, 33.5%), MBBS (n=60, 23.1%), BDS (n=49, 18.8%), PHARMACY, (n=40, 15.4%) and NURSING (n=24, 9.2%).

Table: 1 Demographic characteristics of participants.

TABLE.1 GENDER		
Characteristics	Frequency	Percentage
Female	178	68.5
Male	82	31.5
Total	260	100.0
AGE		
	Frequency	Percentage
19 to 21	93	35.8
22 to 24	138	53.1
24 to 25	29	11.15
Total	260	100.0
DEPARTMENT		
	Frequency	Percentage
DPT	87	33.5
MBBS	60	23.1
BDS	49	18.8
PHARMACY	40	15.4
NURSING	24	9.2
TOTAL	260	100.0

As shown in table:2 (n=230, 88.5%) reported the low back pain. (n=30, 11.5%) did not report any low back pain, LBP was more prevalent in females (n=178, 68.5%) meanwhile, majority of the students (n=107, 41.2%), reported back pain frequently. While (n=97, 37.3%) engaged in physical activity, those who did not engage in physical activity were (n=82, 31.5%). (n=131, 50.4%) spent more than 6 hours in sitting while those who spent 4 to 6 hours were (n=93, 35.8%), (n=198, 76.2%) responded that they used the electronic devices [Laptops, smartphones]. Furthermore, the students who took sleep less than 6 hours were (n=65, 24.9%). Additionally, (n=135, 51.9%) maintained the posture sometimes while studying or working on the other hand, those who never maintained posture were (n= 27, 10.4%). As

shown in table:2 (n=136, 52.5%) experienced the stress related to the academic studies those who did not experience LBP related to the academic stress were (n=13, 5%). Meanwhile, back pain affected the academic performance of (n=179, 68.8%) while participants those whose academic performance was not affected were (n=81, 32.2%).

Table 2: Relationship Between Stress, Academic Performance, and prevalence of Low Back Pain.

Response	Stress Related to Academic Studies (Frequency)	Low Back Pain (Frequency)
No	13	40
Sometimes	111	
Yes	136	220

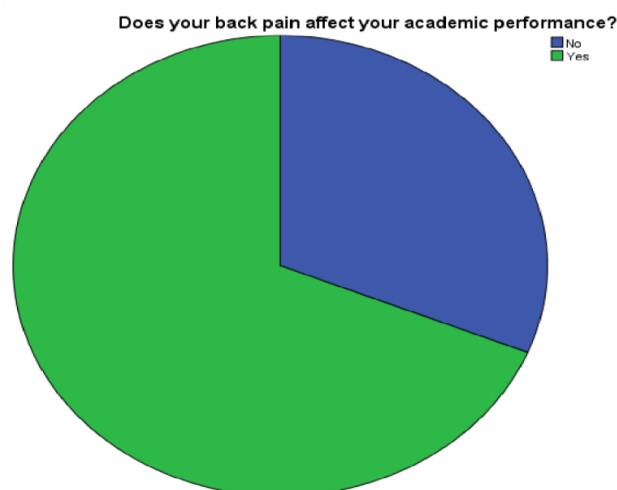


Figure 3: Shows the pie chart showing the academic performance affected by Low back pain.

DISCUSSION

This study highlights high prevalence of lower back pain (LBP) among medical university students, affecting 88.5% of participants. Consistent with previous research, our findings reinforce that LBP is a widespread issue among students in rigorous academic programs. Notably, females were more affected (68.5%), aligning with existing literature that has consistently reported a higher prevalence of LBP in female students, possibly due to anatomical, hormonal, and lifestyle-related factors.^[12,13]

The frequent occurrence of back pain among students is alarming, with 41.2% reporting recurrent episodes. This is particularly worrisome given its potential impact on academic performance and overall well-being. Our study found that 68.8% of participants experienced

academic difficulties due to LBP, supporting previous research that highlights how pain-related discomfort can impair concentration, reduce sleep quality, and limit physical activity—ultimately leading to decreased academic performance and increased stress levels¹⁴. Additionally, missing classes, clinical rotations, and exams due to LBP can significantly affect students' professional growth and career prospects.^[14]

Several modifiable lifestyle and psychological factors emerged as key contributors to LBP in our study. Prolonged sitting (>6 hours), reported by 50.4% of participants, was the most commonly identified aggravating factor, reinforcing previous findings that associate excessive sitting with musculoskeletal strain¹⁴. Poor posture, experienced by 51.9% of students, further exacerbates the issue, highlighting the need for better ergonomic awareness.^[8] Academic stress also played a significant role, with 52.5% of participants linking their pain to study-related pressure.^[9] Stress, anxiety (29.8%), and inadequate sleep (<6 hours in 24.9% of participants) are known to contribute to muscle tension and pain perception, further intensifying LBP symptoms.^[14]

These findings align with existing literature that underscores the complex interplay between physical, psychological, and lifestyle-related factors in the development and persistence of LBP.

Given the demanding nature of medical education, students often prioritize academic responsibilities over their health, inadvertently increasing their risk of musculoskeletal disorders. Addressing this issue requires a proactive approach, including ergonomic interventions, physical activity promotion, stress management strategies, and education on posture correction.

CONCLUSION

According to this study majority of the students of SMBBMU, Larkana were suffering from Low Back Pain. LBP was more prevalent in females. The factors related to LBP were academic stress, usage of electronic devices, lack of physical activity, prolonged sitting during study and clinical wards, and inadequate sleeping. In last, Future studies must be conducted to assess the further risk factors pertaining to low back pain and future research directions, such as longitudinal studies to track changes over time.

Recommendations

To address the high prevalence of low back pain among students at SMBBMU, several practical steps can be taken. Educational workshops on posture correction, ergonomics, and stress management can help students develop healthier habits. Encouraging physical activity through short movement breaks during lectures and promoting simple daily exercises can reduce prolonged sitting. Universities should also improve study spaces by providing ergonomic seating and raising awareness about proper screen usage. Mental well-being initiatives, such as counseling services and mindfulness programs, can help manage academic stress. Additionally, policy-level changes, including integrating health awareness into the curriculum and promoting student-led wellness initiatives, can create lasting improvements in student health and academic performance.

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