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Frequency of Low Back Pain in Under Graduate Students of Khyber Medical University

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A B S T R A C T

Background: Low back Pain (LBP) is one of the most common musculoskeletal disorder among adult population i.e. 60 to 80 % in United Kingdom. Students' particularly medical students suffer LBP due to high demanding curricula, requiring more study hours routinely and especially during examination.

Objective: To determine the frequency of low back pain in undergraduate students of Khyber Medical University (KMU).

Methodology: It was a cross-sectional study conducted at Khyber Medical University, Peshawar, Pakistan. The study was conducted between September, 2014 and February, 2015. Undergraduate medical students aged between 17 to 25 years participated in the study. A total of 292 students participated in the study. The undergraduate medical students of KMU institutes were included in the study while excluding students having LBP due to systemic diseases, post-surgical and neoplasm. Data was collected through a pre-validated questionnaire "Nordic Musculoskeletal Questionnaire" through Non probability consecutive sampling technique. Data was analyzed on SPSS version 16.

Results: The mean age was found out to be 21.0 ± 5.8 years. The frequency of LBP in medical students was found to be 52.1 %(n=152) and in the past 12 months was 31.8 %(n=93). LBP in male students was 47.7% while in female was about 56.7 %. About 40.8% students reported mild pain on VAS. The risk factors contributing to LBP were lack of exercise, abnormal posture during study and wards' hours, lack of chair with lumber support.

Conclusion: According to this study majority of the undergraduate students was suffering from Low Back Pain. The factors for LBP may be lack of physical exercise, abnormal posture during study and clinical wards or rotation and patient handling during assessment.

Introduction

Low back pain (LBP) is on the top in the most common health complaints. LBP also known as lumbago can be defined as "The pain or discomfort which occurs most commonly in the lumber region between the last thoracic rib and the inferior gluteal fold".[1, 2]LBP is mostly because of abnormality of nucleus pulpous which the central part of the intervertebral disc is. It is also because of degenerative changes in the spine, in the vertebral column and can lead to nerve compression and consequently the symptoms are referred to the lower extremity.[3]

The life time prevalence of LBP in the adult population of United Kingdom is about 60% to 80% whereas 20% to 30% of people experience LBP at any specific time of the year.[4] The life time prevalence of LBP in Pakistan, Karachi was 57.9 %.[5] It

has been estimated that the prevalence of LBP in women is greater than in the men in United Kingdom.[6] In US, it has been found that the three month prevalence of LBP is 26.2%.[7] The life time prevalence of LBP in Canadian population has been estimated to be 84%.[8] Average prevalence of LBP in the individuals of the United Kingdom is approximately 59 %.[9] The study conducted in the Denmark sows the prevalence of LBP as 70%.[10] Whereas a study conducted in Finland shows a little bit greater prevalence that is 75%.[11]

A study conducted by Joha Anyuvan shows that the risk factors contributing to LBP are various type of sport activities, cricket, football, sedentary life style and sleep quality and duration.[12] Some other risk factors associated with the history of LBP are gender, job, profession, financial status and a history of smoking. Information regarding these risk factors are available in the prevalence studies.[13] LBP is not often considered a solemn medical disorder but it is considered as a major cause of discomfort, functional limitation and community cost.[14]

Medical students are exposed to long duration of studies during their exams, in clinical rotation or during their ward hours. Depression and anxiety, use of computer, improper postures during study, sitting in the class and standing during clinical hours and rotation are the causative factors to LBP.[14, 15] It has also been identified that students having decrease sleep time, not doing any exercise, and those students who are smoking are more predisposed to the onset of LBP.[16]

Students particularly medical students have high demanding curricula, requiring more study hours routinely and especially during exams. So, prolong sitting postures and clinical rotation/ward hours prolong standing and assessment and lifting of patients make them more prone to develop LBP.[16] There is no such study done in medical students in Peshawar. Therefore, the purpose of this study is to find out the prevalence of LBP in undergraduate medical students of Khyber Medical University, Peshawar.

Methodology

It was a cross sectional study carried out on undergraduate medical students in affiliated institutes of Khyber Medical University, Peshawar. The study was conducted between September, 2014 and February, 2015. A total of 292 students (both male and female), ages between 17 years to 25 years participated in the study. The students having LBP due to systemic diseases, post-surgical and neoplasm were excluded from the study. Non-probability consecutive sampling was used for the study. Nordic Musculoskeletal Questionnaire was used to find out general prevalence and 12 months prevalence of LBP. This questionnaire aims to develop and test a standardized questionnaire methodology allowing comparison of different musculoskeletal complaints used in epidemiological studies. In addition to this, the data collection tool also consisted of closed ended questions on factors like pain episode, pain presentation, and referral to specialist and leave from college. Data was analyzed using SPSS16. Frequencies were calculated for the LBP in the past 12 months.

Results

A total of 292 undergraduate medical students aged between 17 to 25 years participated in the study. The mean age was found out to be 21.0 ± 5.8 years. Out of the 292 students 151 i.e. 51.7% were male and 141 that is 48.3% were female students. Out of total sample 96 were from MBBS, 32 from Nursing, 85 from paramedics, 35 from BDS and 44 from Physiotherapy. LBP was found in 52.1 % of the total 292 participant, more common in female i.e. 65 % in female. In study results 140 students that is 47.9% had done exercise and 152 students were not doing any exercise that are 52.1%. In study position, most of the students replied; back sitting position 164 students (56.2%), in side lying position 36 students (12.3%), prone 27 students (9.2%) and in the long sitting position 65 students (22.3%).

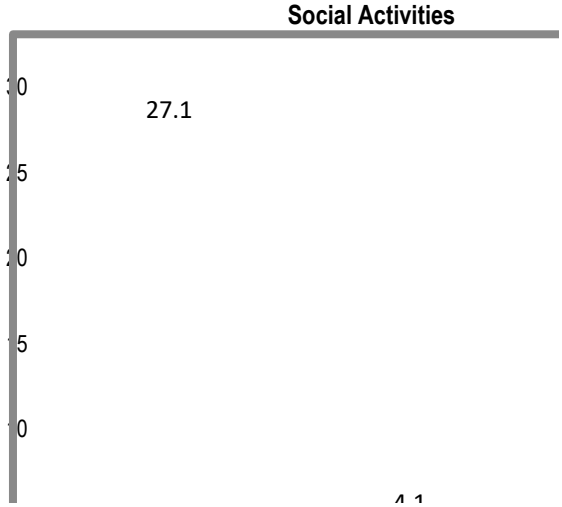
Regarding pain in the past 12 months the students reported that their pain was associated with back pain due to work means study or clinical 25.3%, Sports 2.1%, Menstrual period 4.1% and other activities in leisure time1.4%. The status of the condition is mentioned in table 1.

Table 1. Status of Condition

Low Back Pain		
	Number of participants	**Percentage**
Acute (0-4 weeks)	78	26.7 %
Sub acute (4 -12 weeks)	14	4.8 %
Chronic (More than 12 weeks)	3	1.5 %

Regarding the mechanism of pain in the previous year the students11% (n=32) have sudden onset of pain, students=21.9 %(n= 64) having gradual onset of pain. Results related to the nature of low back symptoms, 4.8% (n=14) students reported the nature of their back symptoms as stiffness to differentiate the cause of lumbar spine stiffness is the onset of the symptoms. Due to postural syndrome the lumbar spine become less mobile. This leads to a stiff back. Pain was complaint of 83 students that is 28.4% respectively. 3.4%=10 students visited a physiotherapy and 2.1%=6 students visited a specialist for their low back complaint in the past 12 months. Only 2.7%=8 students were absent from their classes due to LBP in the previous year, 29.1% with low back pain did not taken any leave from the college. In LBP, an activity of daily living was

affected in 8.9 % patients. Details of effect of back pain on social activities are in graph 1



Graph 1. LBP effect on social activities

The results showed that the LBP in the first year student was 45.8%, in 2nd year was 52.6%, in 3rd year 51%, 4th year 65.2% and in the final year was 75%.

Discussion

In this study the frequency of LBP in the past 12 month was found to be 37.5% in MBBS students which was very close to another cross-sectional survey conducted on Chinese medical students that was 40%.[17] According to this study the 1 – year prevalence of LBP in female medical students (65 %) was greater than in male medical students which were supported by another study conducted in American medical college students.[18]

According to this study high prevalence of LBP was noted to increase from first year students to final year because the students from 3rd year and onward were involved in clinical rotation and clinical wards. This result was supported by the findings of the study conducted by Mustafa et al in which the students were more involved from final year.[19]

The prevalence of LBP in physical therapy and MBBS students were found to be 63.6% and 56.2% respectively which were nearly close to the findings of a study conducted by Moredr et al on medical and physiotherapy students. In this study the prevalence was found to be 53.4% and 60.7% respectively.[20]

The LBP was highest in the age greater than 23 years according to this study approximately 60% were having low back pain in18-20 and 21-22 categories only half of the students suffered from LBP and half were pain free according to the results of this study. The prevalence of LBP in physical therapy and MBBS students according to this study are 63.6% and 56.2% which are nearly close to the findings of a study conducted by Moredr et al in medical and physiotherapy students in which the prevalence was 53.4% and 60.7% respectively.[22] As the clinical rotation or clinical wards starts from third year and onwards according to this study the results shows that there were total 36 students of 61.1% reported LBP and clinical rotation scheduled for 6 hours per week for IPM&R and institute of nursing sciences. Total students were 48 of which 54.2% were suffered LBP and ward duration was 18 hours per week mostly MBBS student in the 3rd and 4th years and 75% of the final year were suffering from LBP as the ward hours are more from the 3rd and 4th years in the medical colleges.[23]

The limitation of the study was that the data collection tool was not enough for multiple factors in medical students that they face during study. Secondly, there was a possibility of biasness like subject and recall bias regarding the question about 12 months prevalence of LBP.

Steps should be taken to raise awareness among undergraduate medical students, parents and community about LBP and its future consequences and the role they can play in reducing this problem. Use of log roll during study hours can minimize this sort of problem.

Conclusion

According to this study majority of the undergraduate students was suffering from Low Back Pain. The factors for LBP may be lack of physical exercise, abnormal posture during study and clinical wards or rotation and patient handling during assessment. It is important to arrange a health program that provides education, awareness and guidelines regarding correct posture during study, correct ergonomics, participation in recreational activities, and about physical exercise to the medical students.

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