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Cross sectional survey using Oswestry disability index for undergraduate physiotherapy students having low back pain

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Abstract
Low back pain is characterized by aches and pain present below the costal margin and above the inferior gluteal folds, which can be referred pain in the leg. The objective of the study was to find the presence, and impact of Low back pain (LBP) in physiotherapy students. A cross-sectional study among 200 students using purposive sampling from physiotherapy students (aged 18-25) was carried out. We used a validated questionnaire Oswestry Disability Index to collect data. Oswestry Disability Index is a valid and reliable questionnaire having a Cronbach alpha value of 0.88=good.
Data was analyzed using descriptive analysis. Low Back Pain was present in 64% of students. Most of the Students were seen to have Minimal Disability which can lead to significant impairment. The presence of a high risk of Low Back Pain in physiotherapy students emphasizes the need to plan treatment and active lifestyle advice for this group of people. Identifying risk factors early will minimize the prevalence of Low Back Pain and progression to a chronic disease, thereby improving an individual's quality of life and increasing productivity.

Keywords: low back pain, physiotherapy students, oswestry disability index

Introduction

Low back pain (LBP) is defined as aches and pain present below the costal margin and above the inferior gluteal folds, which can be referred pain in the leg. Low Back Pain can be chronic pain that lasts for at least 12 weeks and acute pain which lasts for up to 6 weeks [1, 2].
There are three general types of low back pain according to causes- mechanical back pain, non-mechanical back pain, and referred pain. Mechanical or musculoskeletal problems are by far the most common cause of Low Back Pain [3, 4] Even though most adults recover promptly with conservative treatment, a complete evaluation is necessary to identify rare cases of critical underlying disease.
Low back pain is one of the most common musculoskeletal conditions and a majority of people experience low back pain at some point in their lives and the symptoms are often persistent or recurrent. [5, 6, 7]
Low back pain has become one of the most common health problems in the productive age group in both males and females among the students impacting medical costs, worse academic performance, and absenteeism [6, 7].
One of the major causes of low back pain in students is their sedentary lifestyle. A sedentary lifestyle is defined as prolonged sitting at work, during leisure time and when moving; these activities require energy expenditures of <1.5 Metabolic equivalents (METS) [6, 7, 8]. Lack of or trace physical activity resulting from the sedentary lifestyle results in the reduction of muscular power and strength [6].
Sitting by itself does not increases the risk of low back pain, but sitting for more than half of the workday in combination with awkward postures increases the risk of low back pain [6]. Adults generally spend about 50-60% of their waking hours in a sitting position. A possible mechanism for relation between prolonged sitting and low back pain is an increase in intradiscal pressure, lack of variation in movement, stiffness of the lumbar spine, reduced strength of back muscle, and reduced energy expenditure leading to increased weight [6, 8, 9]. People with a sedentary lifestyle may develop flaccid hyperlordosis complex resulting in the development of non-specific Low Back Pain. A healthy lifestyle may reduce particular musculoskeletal symptoms, including poor posture and repetitive movements. A program of regular exercise that includes cardiopulmonary resistance and daily flexibility exercises can help maintain physical fitness [6].

Need For Study

Students are exposed to stress, a highly demanding curriculum requiring numerous hours of studying and prolonged sitting [10]. As a student, with increasing academic load and busy schedule, it is very easy to forget to concentrate upon one's own health. Low back pain in students can lead to different problems such as disability, loss of productivity, poor academic performance and absenteeism [8, 11, 12, 13]. Therefore knowing the prevalence of this problem in students and the reason causing it will contribute in planning the treatment plan and ergonomic advice for these group of people [12].

Aim

To find out functional disability due to Low back pain in undergraduate physiotherapy students of Tilak Maharashtra Vidyapeeth's Lokmanya Tilak College of Physiotherapy, Kharghar.

Objective

1. To find out the functional disability due to Low Back Pain in undergraduate physiotherapy students
2. To measure the adverse effects of Low Back Pain on everyday life.

Methods and materials inclusion criteria

1. 1st, 2nd, 3rd, 4th year Physiotherapy students and interns of Tilak Maharashtra Vidyapeeth's Lokmanya Tilak College of Physiotherapy, Kharghar.
2. Between the age group of 18-25 years
3. Including both male and female
4. Those who give consent to participate in the study

Exclusion Criteria

1. History of acute trauma to Low Back
2. Any history of back injury or any other spinal injury caused by accident/ disease/neoplasm (eg, road traffic accident, osteoarthritis, spinal disc herniation,fracture of vertebra, an infectious tumour of the spine,etc.)
3. Previous surgical history (surgery in the pelvic region, spinal surgeries, etc)

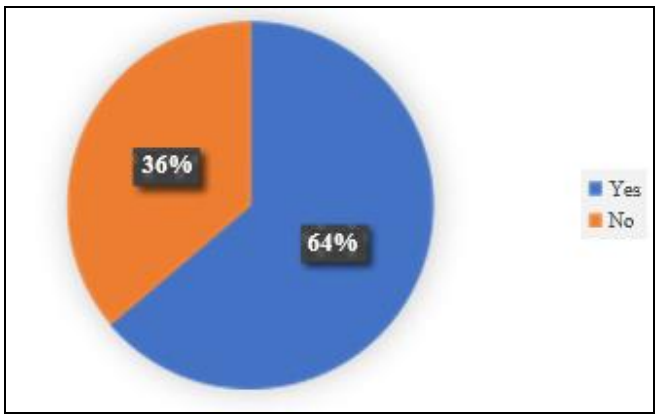
Outcome Measures

Oswestry disability index: Cronbach alpha value= 0.88 (Good)

Procedure

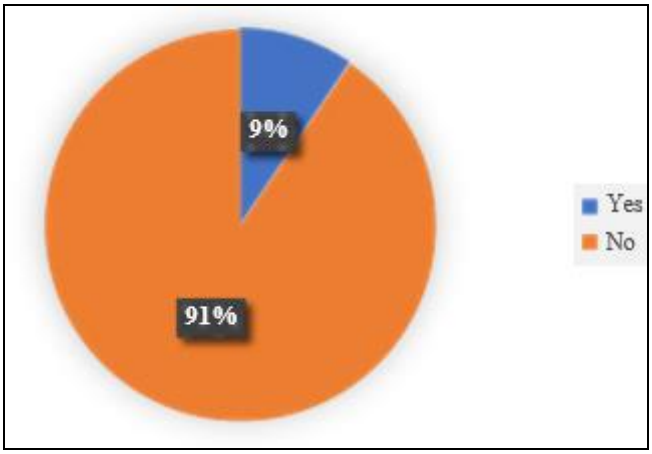
1. Permission was taken from the ethics committee of Tilak Maharashtra Vidyapeeth's Lokmanya Tilak College of Physiotherapy, Kharghar.
2. Explanation of the study to the undergraduate physiotherapy students of Tilak Maharashtra Vidyapeeth's Lokmanya Tilak College of Physiotherapy and consent to participate in the study was taken.
3. Screening of the undergraduate physiotherapy students was done for low back pain and the students having Low back pain were selected.
4. Demographic data of the participants were taken. However, confidentiality is maintained.
5. Oswestry disability index was handed over to the participants over one to one basis, which was self-administered by them.
6. The questionnaire comprises 10 questions. For each question, there is a possible 5 points; 0 for the first answer, 1 for the second answer, etc.
7. Data was collected and statistically analysed.

Data Analysis Results



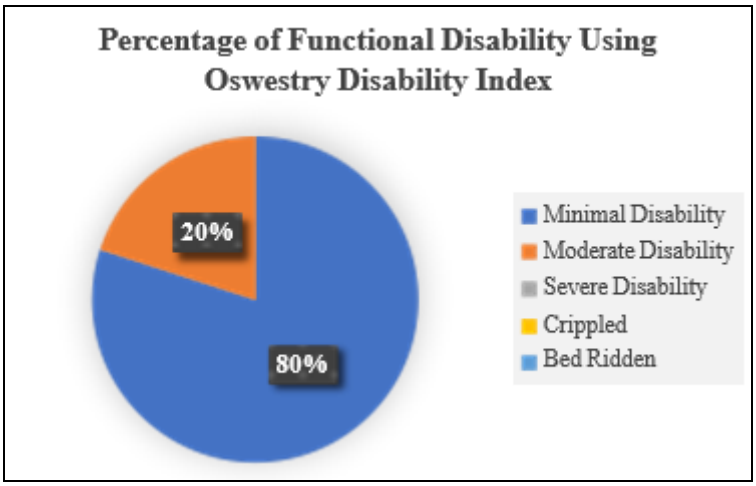
Graph 1: Prevalence of Low back pain in the last 12 months

The above pie diagram shows that 64% participants have experienced low back pain in the last 12 months, while 36% participants have not experienced low back pain



Graph 2: Treatment taken for Low back pain

From the above pie diagram we can see that only 9% of the participants who have experienced low back pain, have taken treatment while 91% of them have not taken any treatment for the pain.



Graph 3: Percentage of Functional Disability using Oswestry Disability Index

The above pie diagram represents the functional disability caused by low back pain. Revised Oswestry Disability Index was used to determine the impact of low back pain and the ability to manage everyday activities. Minimal disability was found in 101 participants (80.2%) and Moderate Disability was found in 25 participants (19.8%).

Interpretation of Result

199 students participated in the study. The age of the participants was between 18 and 25. Out of 199 participants, 163(82%) were female and 36(18%) were male. 127 participants (64%) reported having Low Back Pain while 72 participants (36%) have not experienced Low Back Pain. Amongst the students who experienced Low Back Pain, only 9% of them took treatment for their pain. This cross-sectional study demonstrated that a remarkable number of physiotherapy students had developed lower back pain.

Discussion

This study was done to investigate the functional disability caused by Low back Pain in physiotherapy students and to measure the adverse effects of Low Back Pain on everyday life. This cross-sectional study demonstrated that a remarkable number of physiotherapy students had developed lower back pain.

It is seen that Low back pain in students can be due to a sedentary lifestyle, poor posture, obesity, long sitting hours, uncomfortable furniture, and using heavy backpack. Additionally, students tend to assume awkward sitting postures which can lead to low back pain.

Prolonged hunching while standing or sitting can cause back muscles to become strained and painful, and slowly develop stiffness and weakness in the trunk and lower back. An unsupported sitting position can cause a forward bend on the spine.

In a recent report, a high prevalence of low back pain among students at International Medical University was reported [3]. Further, in another research, it was reported that, a sedentary lifestyle significantly increased the incidence of recurrent low back pain [6]. These results are comparable to our results.

Identifying risk factors early will minimize the prevalence of Low Back Pain and progression to a chronic disease, thereby improving an individual's quality of life and increasing productivity.

Proper guidance to students should be provided to adopt an active lifestyle and inculcate healthy postures. The knowledge of the presence of Low Back Pain can be used to plan physical activities for sedentary students. This can be done by organizing exercise classes or providing a designated exercise or sports time during college hours.

The study can be used to educate students about back exercises and the strengthening of core muscles.

Conclusion

The prevalence of Low Back Pain s 64% among Tilak Maharashtra Vidyapeeth's Lokmanya Tilak College of Physiotherapy students. Our educational goal is to take measures and advise students appropriately to prevent Low Back Pain.

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