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Prevalence of Low Back Pain among Engineering Students of Isra University

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Abstract

Introduction: Back ache can be defined as Pain at back with or with muscular spasm, which can be relieved by itself or may persist for long time. It is the most common problem in old age and in those who are prone for heavy weight lifting. Recently it is also observed in young students because of their prolong sitting in bad posture, motor biking for long time, sedentary life style and many more. The patients also suffered with pain radiating towards lower leg and sometimes up to the foot unilateral or may be bilateral (SCIATICA). Females are more prone to develop this pain because of deficiency of Vit-D and bone mineralization, whereas male gets trauma most commonly along with above described factors.

Objective: To determine the prevalence of low back pain among engineering students of ISRA University Hyderabad.

Material and Methods: It was a Cross sectional observational study, participants were requited from Isra university Hyderabad. All engineering students were included in the study (345) but only 286 responded. Both male and female students with age range >18 years-24 years, Healthy individuals, BMI 18.5-24.9 kg/m^2. Exclusion Criteria was age <18 years, any Co morbidity, BMI >28 kg/m^2.

Results: Out of total number of participants, 15% engineering student respond that they had mild pain intensity which comes and goes, 50% out of total respond that their pain intensity is mild and persist.

Conclusion: In conclusion, in our study the younger students having backache is due to prolong sitting for study in bad posture, heavy weight lifting and long distance travelling specially on motor bike. Almost similar distribution of backache observed in both genders.

Keywords: Low Back Pain (LBP); Physiotherapy

Introduction

Low back pain is common problem which affects our daily life. It occurs in all age groups, but commonly adults are affected. From all musculoskeletal disorders low back pain is one of the most occurring problem involving bone and muscles of the back [1,2].

People who have sedentary life style (no physical activity) are more prone to have low back pain. Students spend more time in sitting during lectures or working on computers has complained of low back pain. Now-a-days due to low back pain problem students are unable to concentrate on their work and their daily activities [3-5].

Pain is an unpleasant sensory and emotional state of feeling of discomfort associated with actual or potential tissue damage that felt in the mind which is arising in a part of body. More than 98% of patient have identifiable pattern of pain that are diagnosed as uncomplicated pain problem in back. Many studies shows that the high frequency of back complaints in society and 70% of all people have back pain at some time in life. This condition may decrease the quality of life of individual and also become worse in daily living activity. Low back pain is a common condition comprising a major health problem worldwide. It eventually affects almost everyone in life men and women equally. It is the most common cause of pain at lumber that causes joint dysfunction, derangement muscle spasm, immobility etc. for this reason, researcher interested to conduct this research to find out new things. If the behavior of low back pain is find out, it is very helpful to know about the nature of pain, types of lower back pain, duration of low back pain, pain associated symptoms, severity of low back pain, aggravating factors and relieving factors of low back pain, clinical presentation of low back pain, response of the medication and response of previous intervention before receiving physiotherapy treatment. So physiotherapist can provide better treatment as well as essential advice to the patients [6-9].

There is wide variability in the presentation of low back pain, yet if common characteristics emerge in the assessment that help to distinguish one pain profile from another, they may aid in initial decision making by defining a dysfunction

pattern towards which a targeted intervention is directed [10-12].

The prevalence rate of low back pain also varies between workers in different professions-high prevalence rates are found in particular for non-sedentary occupation, this phenomenon indicates that work-related factors many play a role in the etiology of back pain. In order to define potentially effective intervention in the workplace, the relationship between various exposure and back pain must be examined more specifically [13].

Research Methodology

The purpose of the study was to find the prevalence of low back pain among engineering students of Isra University. The study was Cross-sectional observation study. Participants were requited from 345 engineering students of Isra University but only 286 responded. Convenient non probability sampling technique was used. Inclusion criteria included both male and female students with age range > 18 years - 24 years, Healthy individuals, BMI 18.5-24.9 kg/m2. Exclusion Criteria was age < 18 years, any Co morbidity, BMI > 28 kg/m2.

Data collection instruments

Data was collected by using Oswestry Low Back Pain Disability Questionnaire. The Oswestry Disability Index (also known as the Oswestry Low Back Pain Disability Questionnaire) is an extremely important tool that researchers and disability evaluators use to measure a patient's permanent functional disability. For each section the total possible score is 5; If the first statement is marked the section score = 0; If the last statement is marked it = 5. If all 10 sections are completed the score is calculated as follows:

Example:

- 16 (total scored)
- 50 (total possible score) × 100 = 32%

If one section is missed or not applicable the score is calculated:

- 16 (total scored)
- 45 (total possible score) × 100 = 35.5%

Minimum detectable change (90% confidence): 10% points (change of less than this may be attributable to error in the measurement).

Data analyzing method

After collecting the data it was uploaded and analyzed by using SPSS Version 21. Analyses were performed to evaluate the mean, frequencies and percentages.

Results and Discussion

In the **Table 1** show that the mean age of the respondents were 20.90 years with S.D + 1.541.

Table 1: Mean age of participants.

Variables	Minimum	Maximum	Mean	Std. Deviation
Age of the respondent Valid N (listwise)	18	23	20.9	1.541

Table 2 shows 50% of participants respond that they had mild pain intensity and 2% of participants respond that they had severe pain intensity. In personal care 49% students said that they did not normally change their way of washing or dressing to avoid pain and 1% students said that due to pain they unable to do some washing and dressing without help. 50% of respondent said that they can lift heavy weights but it causes extra pain and 1% of respondent said that pain prevent me left lifting heavy weights but I can manage light to medium weights if they are conveniently positioned [14-16].

Table 2: Mild pain intensity.

Pain intensity	Percent	Personal care	Percent	Lifting	Percent
The pain comes and goes and is very mild.	15	I do not have to change my way of washing or dressing to avoid pain.	14	I can lift heavy weights without extra low back pain.	14
The pain is mild and does not vary much	50	I do not normally change my way of washing or dressing even though it causes me pain.	49	I can lift heavy weights but it causes extra pain.	50
The pain comes and goes and is moderate.	27	Washing and dressing increase the pain, but I manage not to change my way of doing it.	29	Pain prevents me lifting heavy weights off the floor.	29
The pain is moderate and does not vary much.	3	Washing and dressing increases the pain and I find it necessary to change my way of doing it.	7	Pain prevents me lifting heavy weights off the floor, but I can manage if they are conveniently positioned	3
The pain comes and goes and is severe.	3	Because of the pain I am unable to do some washing and dressing without help.	1	Pain prevents me lifting heavy weights but I can manage light to medium weights if they are conveniently positioned.	1

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The pain is severe and does not very much.	2			I can only lift light weights at the most.	3
Total	100	**Total**	100	**Total**	100

Table 3 shows in walking, 56% of candidates said that they have of some pain on walking, but I can still walk my required to normal distances and 2% candidates said that pain prevents me from walking at all. Majority of partaker (60%) said that they can sit as long as I need provided I have my choice of sitting surfaces and few respondent said that pain prevents me from sitting at all.

Table 3: Some pain on walking.

Walking	Percent	Sitting	Percent	Standing	Percent
I have no pain walking.	14	Sitting does not cause me any pain.	12	I can stand as long as I want without pain.	17
I have some pain on walking, but I can still walk my required to normal distances.	56	I can sit as long as I need provided I have my choice of sitting surfaces.	60	I have some pain while standing, but it does not increase with time.	53
Pain prevents me from walking long distances.	25	Pain prevents me from sitting more than 1 hour.	26	I cannot stand for longer than 1 hour without increasing pain.	26
Pain prevents me from walking intermediate distances.	3	Pain prevents me from sitting more than 1/2 hour.	1	I cannot stand for longer than 1/2 hour without increasing pain.	1
Pain prevents me from walking at all.	2	Pain prevents me from sitting at all.	1	I avoid standing because it increases the pain immediately.	3
Total	100	**Total**	100	**Total**	100

Table 4 shows 53% of participants said that they have some pain while standing, but it does not increase with time and 1% said that they can't stand for longer than ½ hour without increasing pain. Majority of candidates said that they have pain in bed, but it doesn't prevent me from sleeping well and some candidates said that because of pain I sleep only ½ of normal time. In social life, 54% of respondent state that my social life in normal, but increases degree of pain and 1% state that they hardly have any social life because of pain. 52% said that they get some pain while travelling, but none of my usual forms of travel make it any worse and 1% participants state that pain restricts all forms of travel [17].

Table 4: Some pain while standing.

Sleeping	Percent	Social life	Percent	Travelling	Percent
I have no pain while in bed.	19	My social life is normal and gives me no pain.	16	I get no pain while traveling.	20
I have pain in bed, but it does not prevent me from sleeping well.	56	My social life in normal, but increases the degree of pain.	54	I get some pain while traveling, but none of my usual forms of travel make it any worse.	52
Because of pain I sleep only 3/4 of normal time.	21	Pain prevents me from participating in more energetic activities e.g. sports, dancing.	23	I get some pain while traveling, but it does not compel me to seek alternative forms of travel.	23
Because of pain I sleep only 1/2 of normal time.	4	Pain prevents me from going out very often.	3	I get extra pain while traveling that requires me to seek alternative forms of travel.	4
-	-	Pain has restricted my social life to my home.	3	Pain restricts all forms of travel.	1
-	-	I hardly have any social life because of pain.	1	-	
Total	100	**Total**	100	**Total**	100

The mean age of participants shows there pain in position which are graphically illustrated in below **Figures 1-9.**

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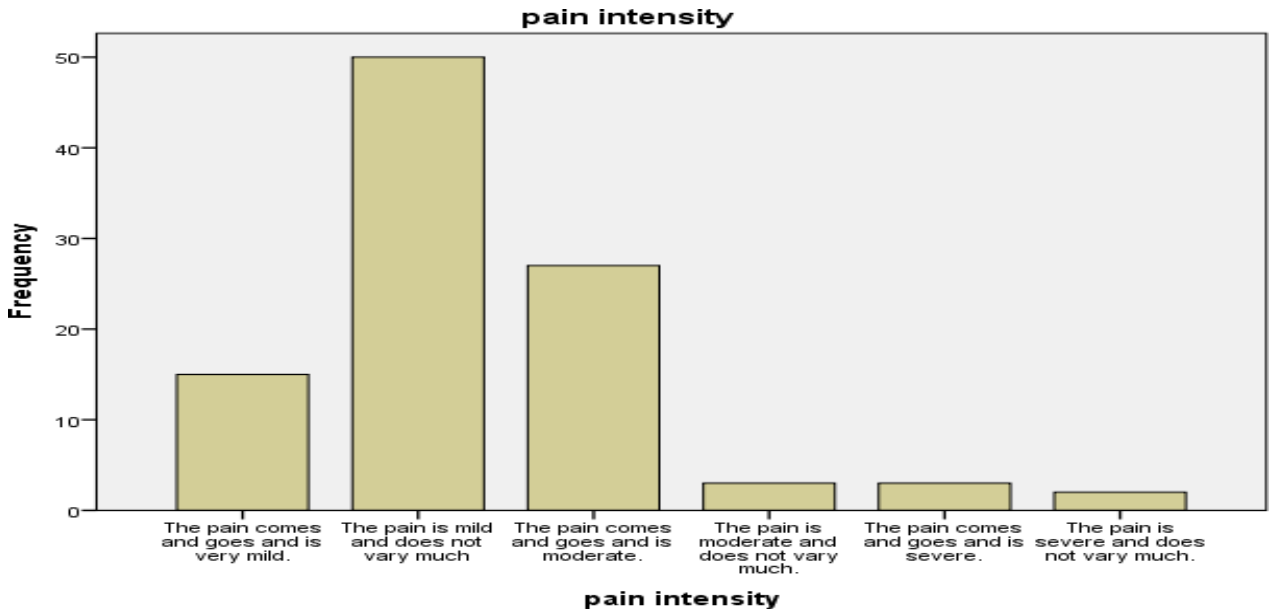

Figure 1: Pain intensity.

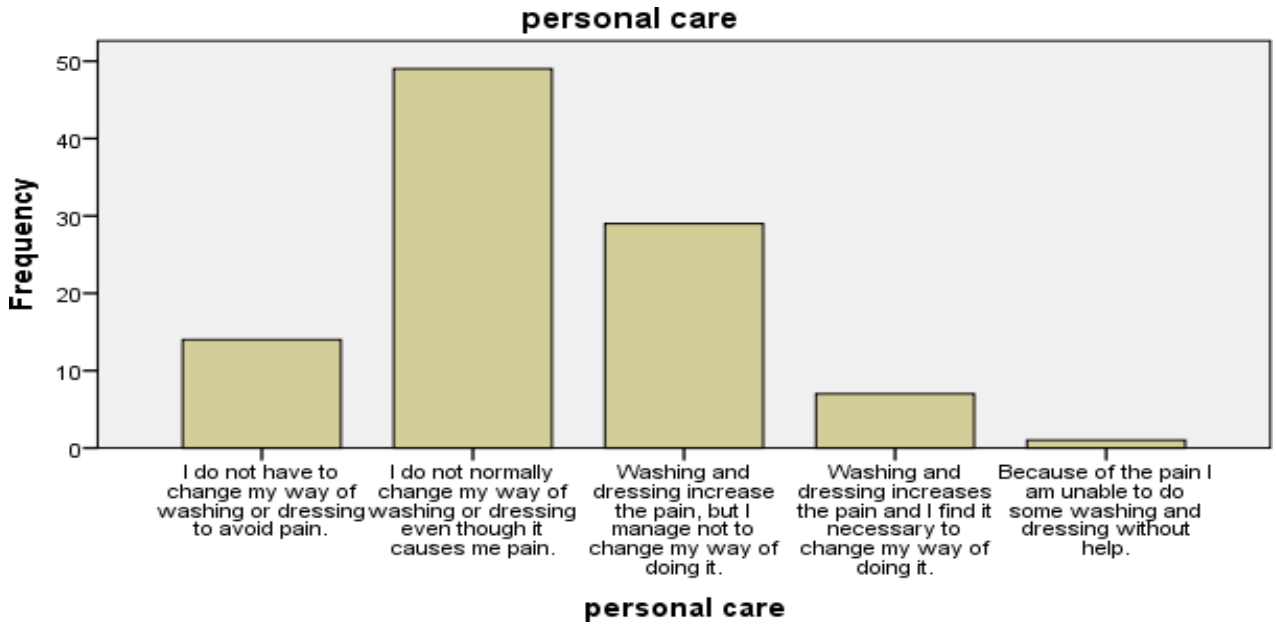

Figure 2: Personal care.

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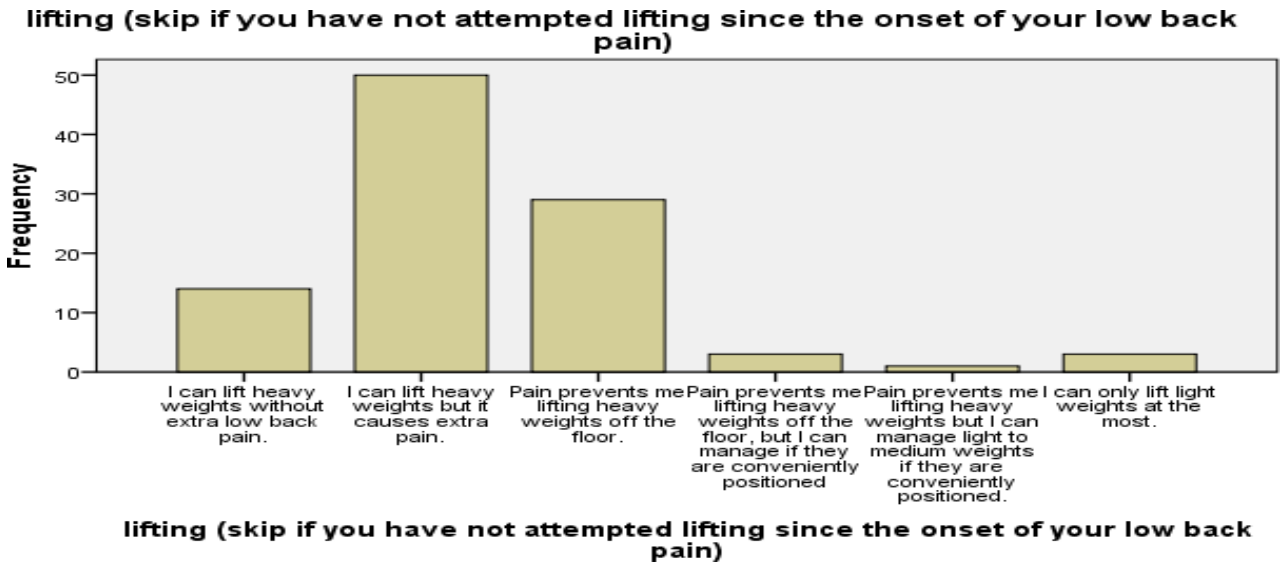

Figure 3: Lifting.

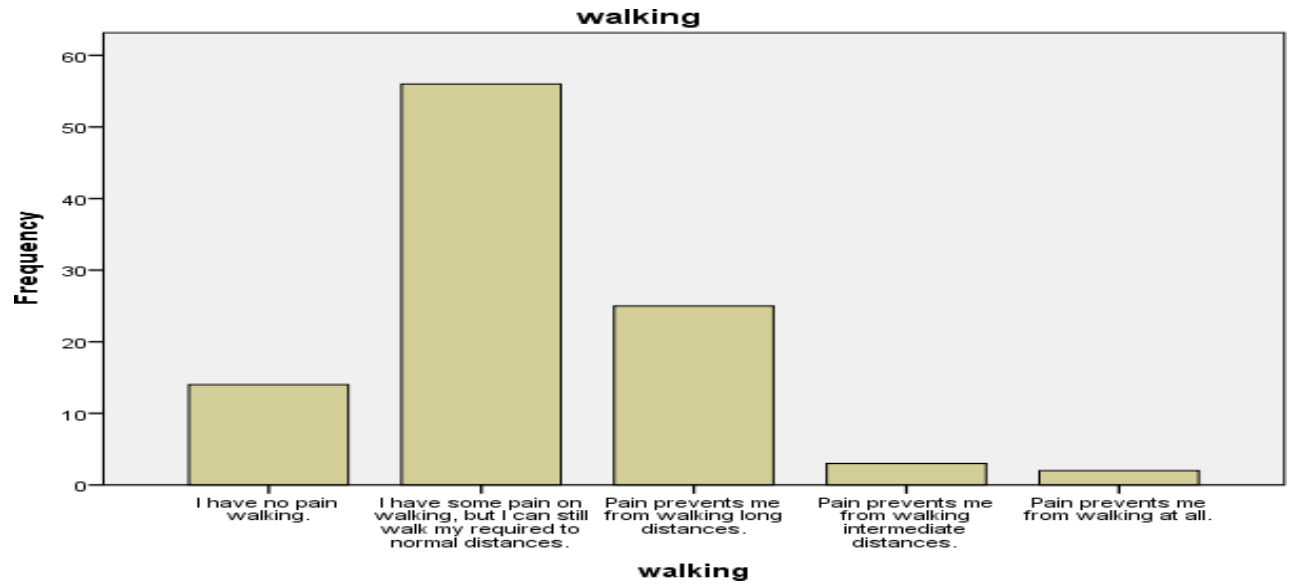

Figure 4: Walking.

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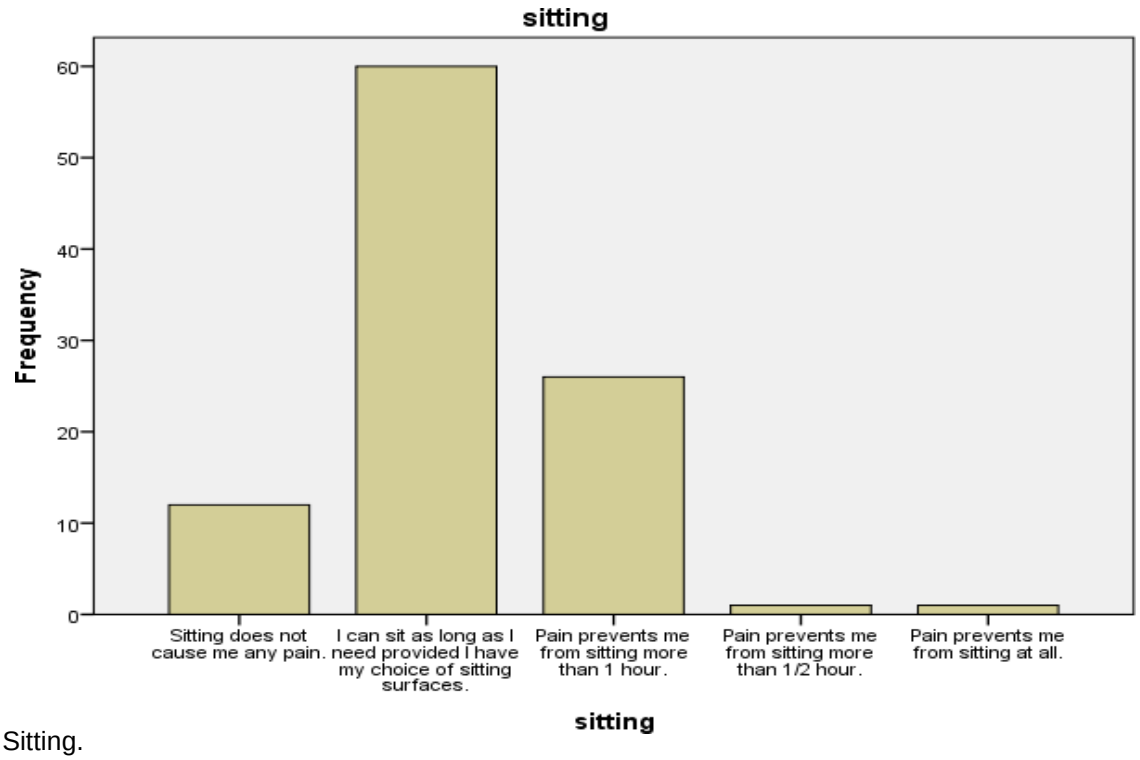

Figure 5: Sitting.

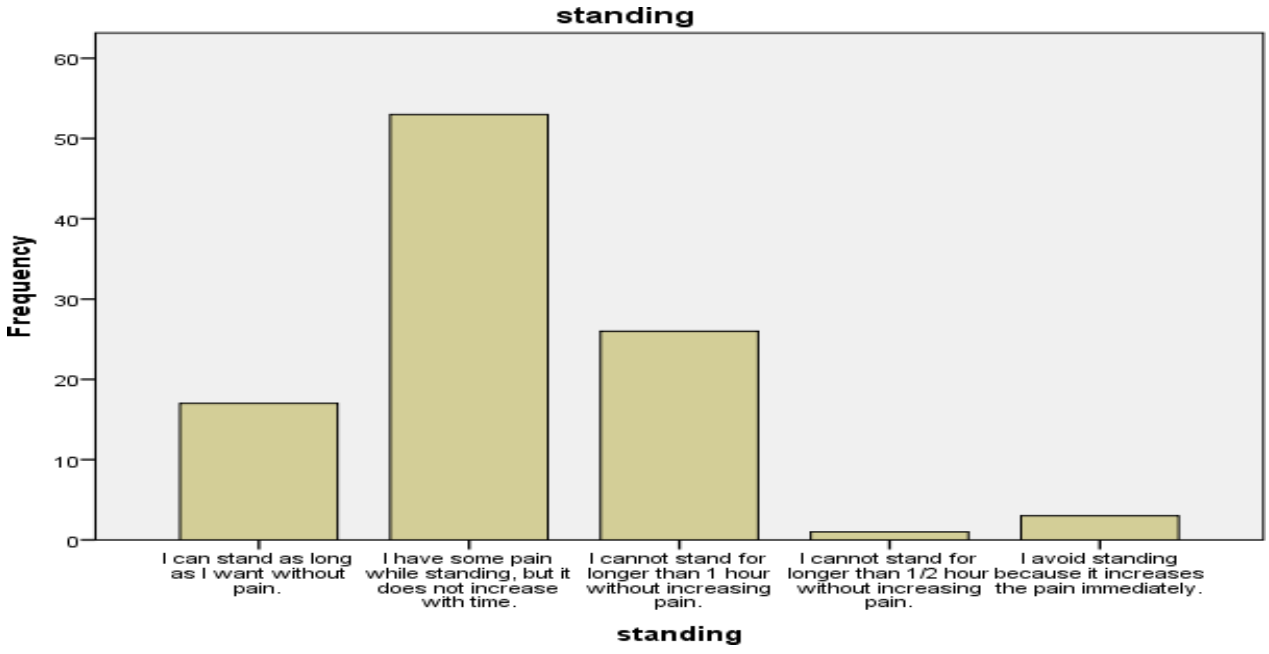

Figure 6: Standing.

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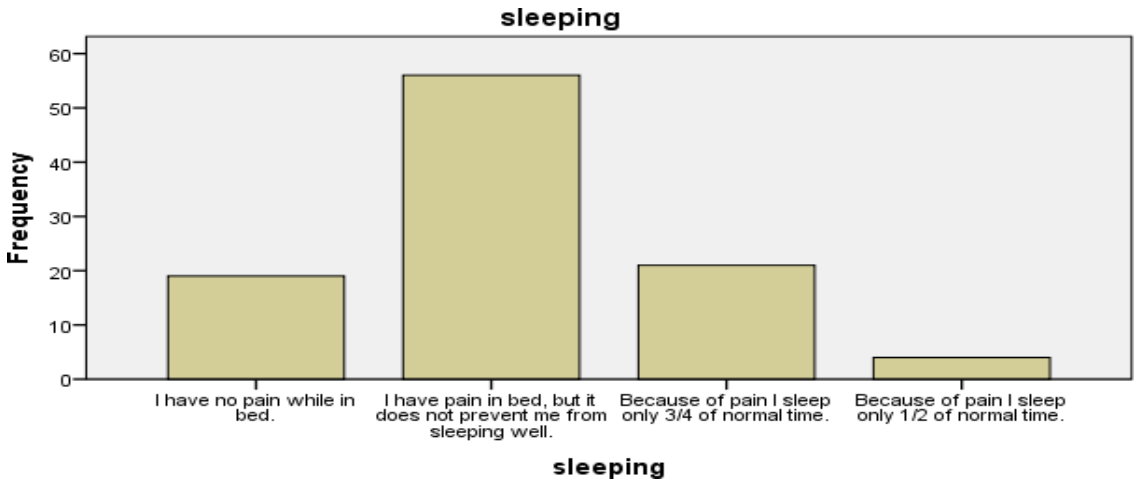

Figure 7: Sleeping.

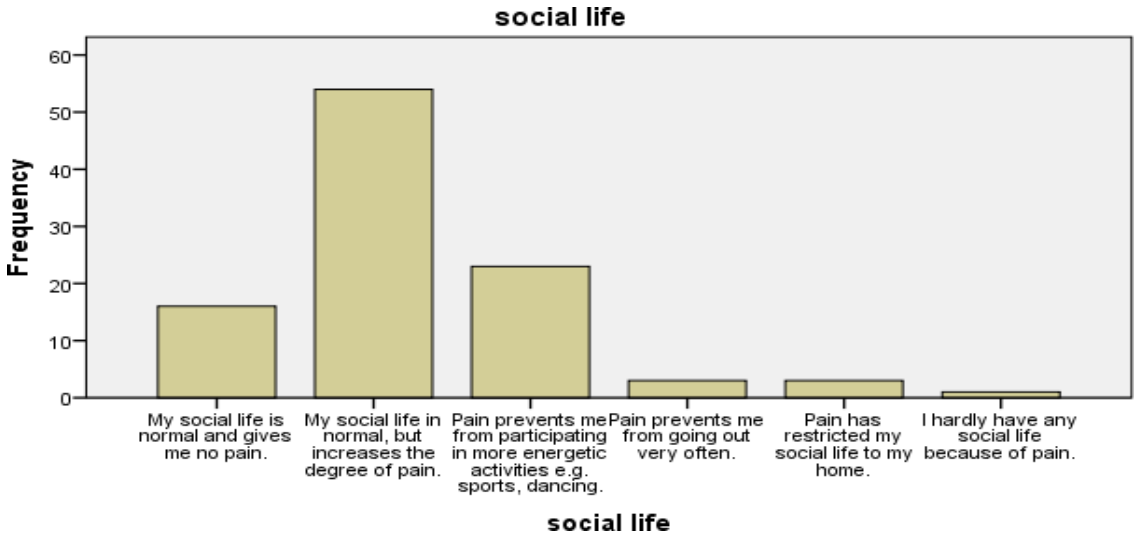

Figure 8: Social life.

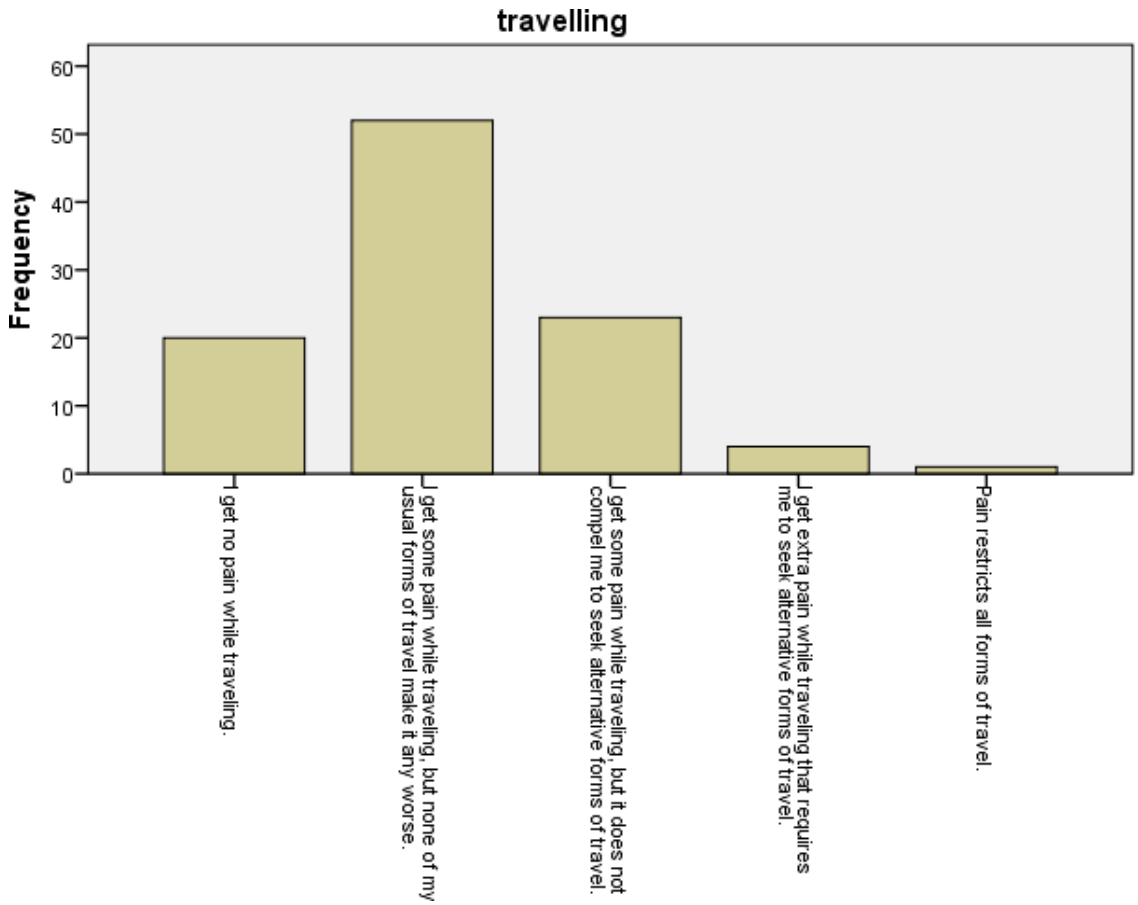

Figure 9: Travelling.

Discussion

A descriptive cross-sectional survey was conducted by Ghazala et al. from 10 November to 10 April 2013 in Islamabad, Pakistan. To find out the frequency of risk factors which cause low back pain in daily travelling younger population. A total of 315 peoples participated in this study. Finding revealed that out of 315 participants 217 were female and 98 were male. Majority of suffers were females and majority travelled in sitting position, majority of students travelled on bus this study shows that back pain mostly feels on end of the day, because of bad posture and it is recommended that awareness about the good posture during travelling should be created in university students.

A 25 years follow-up study was conducted from 1977 to 2001, to examine adolescent flexibility, endurance strength, and physical activity can predict the later occurrence of recurrent low back pain, tension, total of 520 men and 605 women participated in the study, the result show good flexibility in boys and good endurance in girls. Men who at school age participated in physical activity were at lower risk of recurrent low back pain than those who did not. Occurrence of recurrent low back pain was 1.5 times higher for man then for women.

Carried a survey in Finland to identify increase risk of neck-shoulder and low back pain in adolescents. Total of 8810 adolescents were surveyed, and among whom 6003 responded and response rate was 68%. Prevalence of neck-shoulder and low back pain was higher among girls than among boys it is increased by age.

Another cross-sectional study was conducted by Antonio Carlos Onofrio, et al. the aim of this study was to investigate the prevalence of acute low back pain and associated factors in high school students from a southern Brazilian city. A total of 25 schools were included in the sample the prevalence of low back pain was 13.7% students who commuted to school walking, should higher prevalence of acute low back pain, prevalence of acute low back pain is relatively higher.

Conducted 1-year prospective cohort study was carried out in healthy undergraduate students. Among the recruited sample of 684 students, 46% reported the onset of neck pain and back pain between baseline and 1-year follow-up, of whom 33% reported persistent neck pain. The onset of neck and back pain was associated with computer screen position not being level with the mouse position being self-rated as suitable. Factors that predicted persistence of neck back pain were position of the keyboard being too high, use of computer for entertainment < 70% of total computer usage time, and

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students being in the second year of their studies. Low back and Neck pain is quite common among undergraduate students. One strategy to prevent morbidity in adults should focus on the health of undergraduate students. An education program should be introduced for undergraduate students regarding how properly to do computer work to avoid neck and low back pain [18].

In our study the pattern of backache is related to the bad post ringing during prolong sitting for study, which is equal in both genders. The most striking part is that the male students have this problem because of long distance travelling and especially on motor bike. Many articles shows that the low backache cause difficult to manage routine work, in our study the routine work is also affected but only in severe backache students not in all.

On of study done in Europe, showed that the students who sit for more than 3hrs constantly they are more prone to have backache in their middle age, our study also favors the European study as the age group affected with backache may become worse in their middle age.

Conclusion

In conclusion, LBP is prevalent among university students, Male and female students are equally affected. In my study the younger students having backache is due to prolong sitting for study in bad posture, heavy weight lifting and long distance travelling specially on motor bike. Almost similar distribution of backache observed in both genders.

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