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PREVALENCE OF NECK PAIN AMONG FASHION DESIGNING STUDENTS

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ABSTRACT

Objective: The main aim of the study was to find out the prevalence of neck pain among fashion designing students in Karachi, Pakistan.

Materials and Methods:

A cross-sectional study was conducted on 220 undergraduate fashion designing students randomly selected from different fashion designing institutes. Modified
Neck Disability Index (NDI) Questionnaire was used. Data was analysed using
IBM SPSS BASE Licence version 23.00.

Result:

A total number of 220 participants (23.2% male, 76.8% female) were selected for the study out of whom 23.2% were male and remaining 76.8% were female. Out of 220 students, 81.8% reported having neck pain, while 18.2% reported not having neck pain.

Conclusion:

It is concluded that majority of the participants reported having neck pain. It measured about 82% participants. Neck pain was more prevalent in females (76.8%) than in males (23.2%). Students rated their pain on VAS, and in the majority of students, the intensity of pain is moderate.

Key words: Neck pain, Fashion Designing, Musculosketal disorders

INTRODUCTION:

Neck pain, otherwise called as cervicalgia[1,] is one of the most common musculoskeletal problems.[2] Neck pain is characterized as ache or discomfort in the anatomical territory amongst occiput and third thoracic vertebra and along the side between the average edge of the scapulae [3].

Binder in his article, “The Diagnosis and Treatment of Nonspecific Neck Pain and Whiplash” called neck pain acute if the duration is up to 4 weeks, sub-acute if it stays for 1-4 months and chronic if it goes over 4 months. However, each form, be it acute, sub-acute or chronic, is part of the category of non-specific pain when there is no disease or anatomical abnormality as the cause of the pain.[4]

The global age-standardized prevalence of neck pain was 2,696.5 per 100,000
(95% UI 2,177.0 to 3,375.2) according to the analysis of 2019 GBD data[5].

According to a study conducted in 2008 by Childs et al, at any given moment 1020% of the population reported neck difficulties, with 54% of persons experiencing neck pain within the previous six months.[6] Moreover, prevalence of neck is generally reported to be more prevalent in women than in men.[7]

The prevalence of neck pain varies over the world, ranging from 16.7% to 75.1 percent[8]. The most prevalent neck discomfort has been noted in university students in both developed and developing nations. The prevalence of cervical pain in Finland was 29%, 34.6% in Australia, 54% in the USA, 49.7% in Brazil, 46% in Thailand, 54% in Saudi Arabia, 55.8% in Korea, and 49.9%.in China[9].

A study was conducted in 2021 in Kauntan by Tan Yea Huey et.al on prevalence and associated risk factor of neck pain on a total of 121 eligible university students.

It was reported that overall neck pain prevalence among students in Kauntan, Pahang during previous 12 months was 58.7%. It was concluded that prevalence of neck pain during COVID -19 was high[10].

Another study conducted in 2021 by Micheal O.Ogulana et.al on prevalence of Musculoskeletal pain (MSP) reported that MSP is highly prevalent in health science undergraduates[11].

Moreover, in a study from year 2021 conducted in Balochistan by Sachdev et.al 158 students participated, and out of 158 students about 69% had neck pain[12].

A cross sectional study conducted by Hashim et.al in UAE in 2021 revealed that among 202 students, prevalence of neck pain was 28.7% in the week before and 52.5% in the year before[13].

Studies show that the overall cost of neck discomfort is a significant amount of total healthcare spending[8]. According to a research conducted in 2016, around $134.5 billion were spent on neck pain and low back pain making these two conditions – among other 154 conditions – taking up the highest healthcare spending in the United States[5]. Added to this, due to treatment expenditures, interruption of well-being, job absence and loss of productivity, neck pain can place a significant burden on both individuals and society. The financial burden caused by neck diseases is significant and consists of medical expenses, lost wages, and disability allowance.There is also incapacity due to neck pain and recurrences, which can have a substantial impact on worker productivity as well as the economics of families and communities [14.]

Causes of neck pain can be broadly labelled as ergonomic, individual, behavioural, psychosocial[15, 16, 17]. Strenuous physical activity, poor or faulty posture, repetitive tasks, are some examples of ergonomic factors. Fashion designing is one such field in which students experience neck pain due to these ergonomic factors. Fashion designers (FaDes) spend foremost of their days in sewing. They sit on anything that they think would be more comfortable, such as stools, seats, and buckets. Their sitting posture is influenced by the chair. Fades tend to sit with their backs bent regardless of the style of chair[18].

An investigation also revealed that FaDes experiences great difficulty while fulfilling the design needs of clients, which causes delays and subpar performance[18]. Neck pain prevalence as well as risk factor studies and adaptation of effective therapies are essential because neck pain has social and economic consequences for both the state and individuals[14]. Extensive information regarding the scale and scope of the problem would allow for more accurate prediction of the requirement for medical services as well as resources which are direct. Furthermore, assessing the prevalence of neck pain in general population is critical for evaluating the relationship between trauma and occupation.

Within the fashion industry, few researches are done on the prevalence of neck pain among fashion designers. Significantly fewer studies are found regarding neck pain among fashion designer students nationally and more specifically in Karachi, Pakistan. This study is being conducted to fill that gap. The study would help spread awareness. Also it will help to create prevention strategies. Additionally, the study will aid in coming up with prospective practical guidelines for prevent this issue.

METHODOLOGY:

Inclusion and exclusion criteria:

An observational cross-sectional study was conducted on fashion designing students (male and female) in multi-centered environment in three universities of Karachi Indus University, Iqra University, Jinnah University for women. Purposive non-probability sampling technique was used. The study sample included fashion designing students aged 20-25 from the aforementioned three healthcare faculties reporting to have neck pain.

Students were excluded from the study if they had any of the following: radiating pain in upper limb, cancer, thyrdoid complications neck surgery or recent cervical injury, congenital pathology, neurological condition, any infection and disc prolapse.

Data collection procedure:

The sample size of total n=220 was calculated using a web-based epidemiologic and statistical calculator for public health Open Epi version 3.0 with a confidence level of 95% and 5% margin of error[19].

Data was collected by using NDI[20] questionnaire and visual analogue scale (VAS). Visual Analogue Scale (VAS) was used in order to record the intensity of pain (9.3 reliability 9.4 validity)[19.]

The study was continued for four months after the approval of synopsis from IRB (Institutional Review Board).

Those who met the inclusion criteria were then given consent forms. Whoever gave their consent was given a screening proforma which consisted of the criteria, and whoever fulfilled the criteria was presented with the questionnaire. It consists of 2 sections - SECTION A: It consists of name, age, gender, occupation, etc. SECTION B: Section B of questionnaire consists of 9 sections. Each section includes 5 questions.

Ethical approval:

The first page of the study's questionnaire had a written informed consent which was obtained by the participants. The consent form presented the aims of the study and put great emphasis on the confidentiality of the filled-out information. Participants were told that they were able to withdraw from the questionnaire at any point. Only for the purpose of statistical analysis was the all the collected data used.

Data analysis:

Data was analyzed by SPSS version 23.0. Percentages and frequencies were taken out for all quantitative variables. Descriptive statistics, such as mean, were reported for quantitative variables.

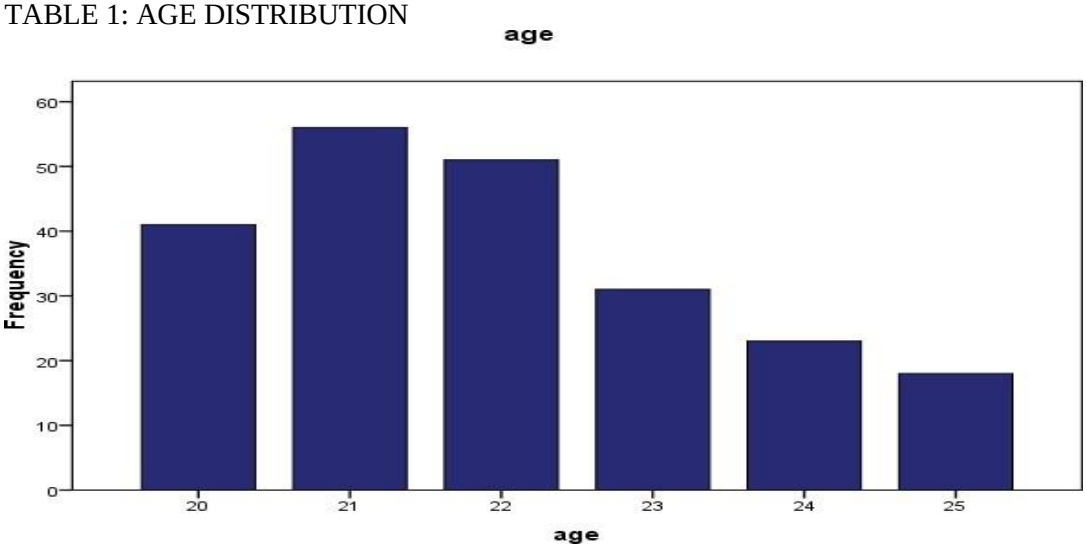
RESULT

Age distribution:

According to our survey, a total number of 220 participants was selected for the study out of which 41 (18.6) were aged 20 years, 56 (25.5%) were aged 21, 51 (23.2%) were 22 years old, 31 (14.1%) were 23 years, 24 (10.5%) individuals were aged 23 years old and 18 (8.2%) were 25 years old.

age			
		Frequency	
Valid	20	41	18.6
	21	56	25.5
	22	51	23.2
	23	31	14.1
	24	23	10 5
	25	18	8.2
	Total	220	100.0

TABLE 1: AGE DISTRIBUTION



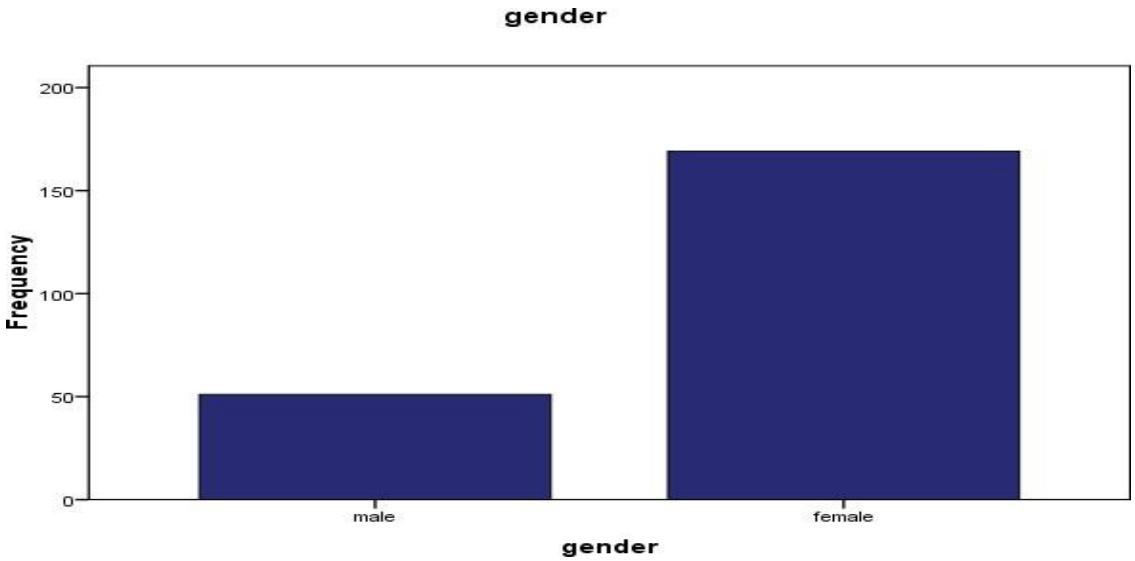
GRAPH 1**:** AGE DISTRIBUTION

Gender distribution:
Out of 220 participants that were recruited for the study, 23.2% were male and remaining 76.8% were female as mentioned in Table 2 and Graph 2.

gender

		Frequency	Percent
Valid	male	51	23.2
	female	169	76.8
	Total	220	100.0

TABLE 2: GENDER DISTRIBUTION



GRAPH 2: GENDER DISTRIBUTION

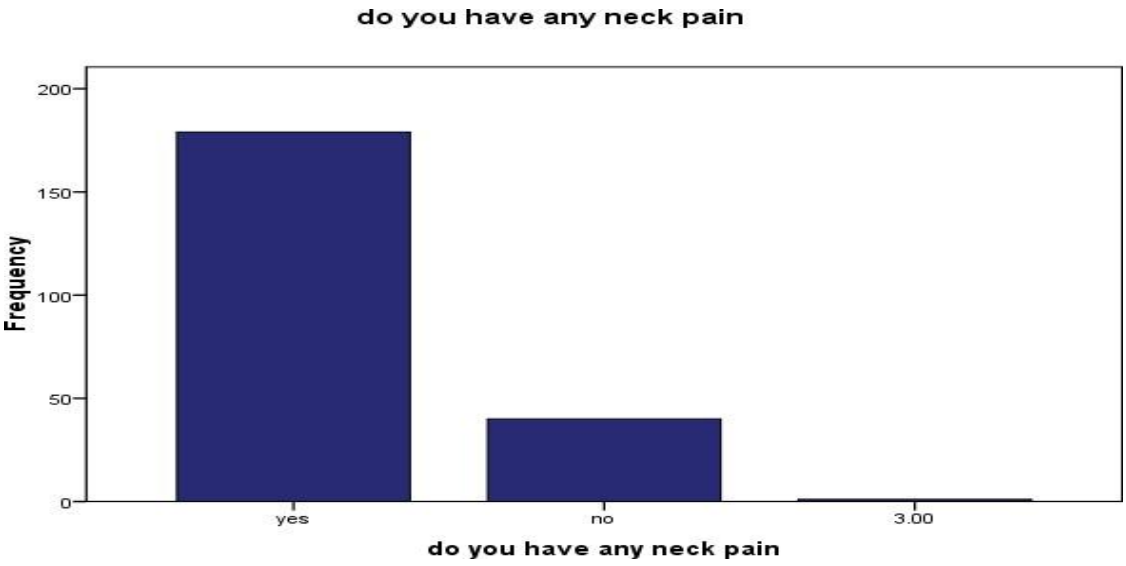
Prevalence of pain:

According to our survey 81.8% fashion designing students had neck pain while 18.2% didn't have it.

DO YOU HAVE ANY NECK PAIN

		Frequency	Percent
Valid	yes	180	81.8
	no	40	18.2
Total		220	100.0

TABLE 3: PREVALANCE OF PAIN

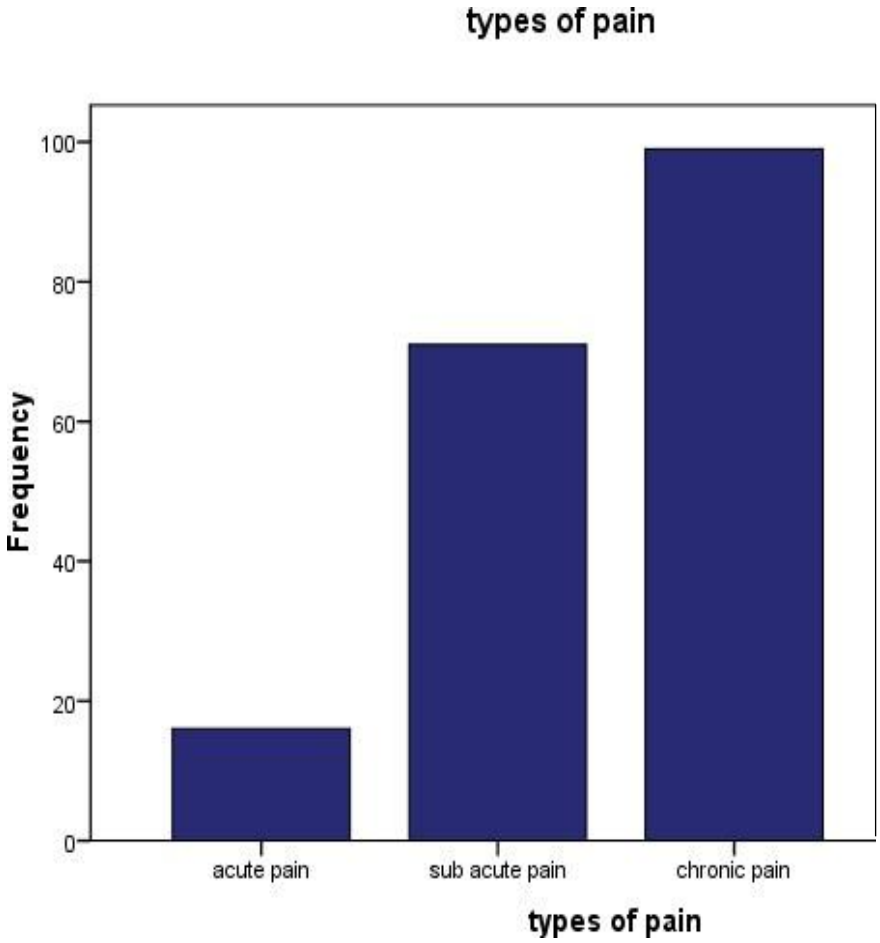


GRAPH 3: PREVALANCE OF PAIN

Type of pain:
Out of 180 students, 8.88% students had acute neck, 39.44% students had sub-acute pain while 51.66% had chronic neck pain.

Types of pain	Frequency	Percent
Acute pain	16	8.88
Sub acute pain	71	39.44
Chronic pain	93	51.66
Total	180	100.0

TABLE 4: TYPES OF PAIN

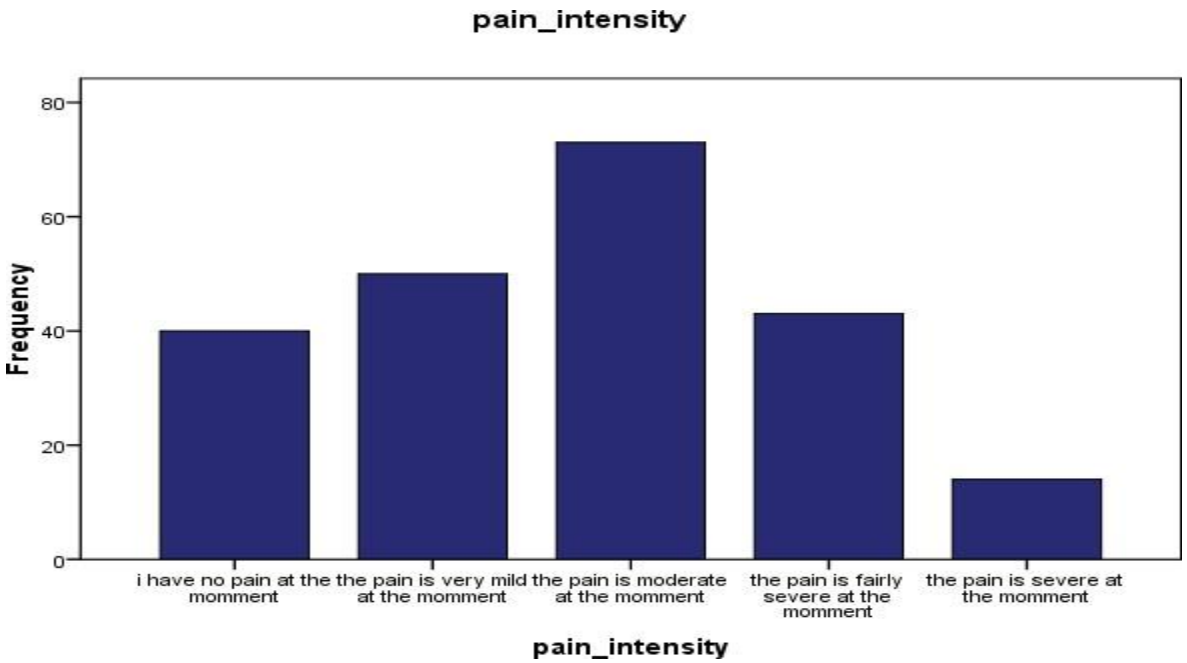


GRAPH 4: TYPES OF PAIN

Pain Intensity:
According to our survey 27.77% had mild pain, 40.55% had moderate pain, 23.88% had fairly severe pain and 7.77% faced severe pain.

Pain Intensity	Frequency	Percent
The pain is very mild at the moment	50	27.77
The pain is moderate at the moment	73	40.55
The pain is fairly severe at the moment	43	23.88
The pain is severe at the moment	14	7.77
Total	180	100.0

TABLE 5: PAIN INTENSITY



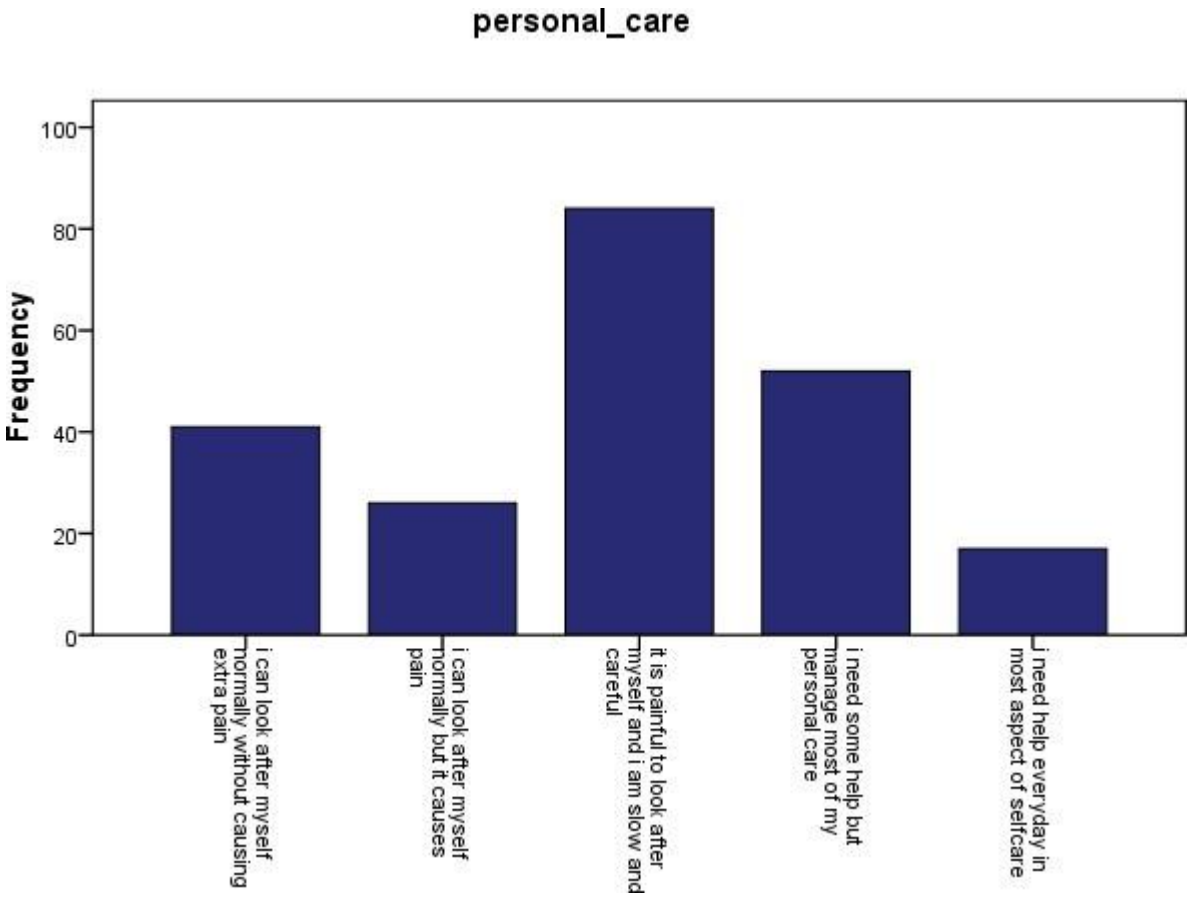
GRAPH 5: PAIN INTENSITY

Personal care:

14.44% students experienced pain in personal care and 46.66% students worked slowly and carefully to avoid the pain. 28.88% students sought help from others in majority of their tasks whereas 10% students cannot work without others' help.

Personal Care	Frequency	Percent
I can look after myself normally but it causes pain	26	14.44
It is painful to look after myself and i am slow and careful	84	46.66
I need some help but manage most of my personal care	52	28.88
I need help everyday in most aspect of self care	18	10
Total	180	100.0

TABLE 6: PERSONAL CARE



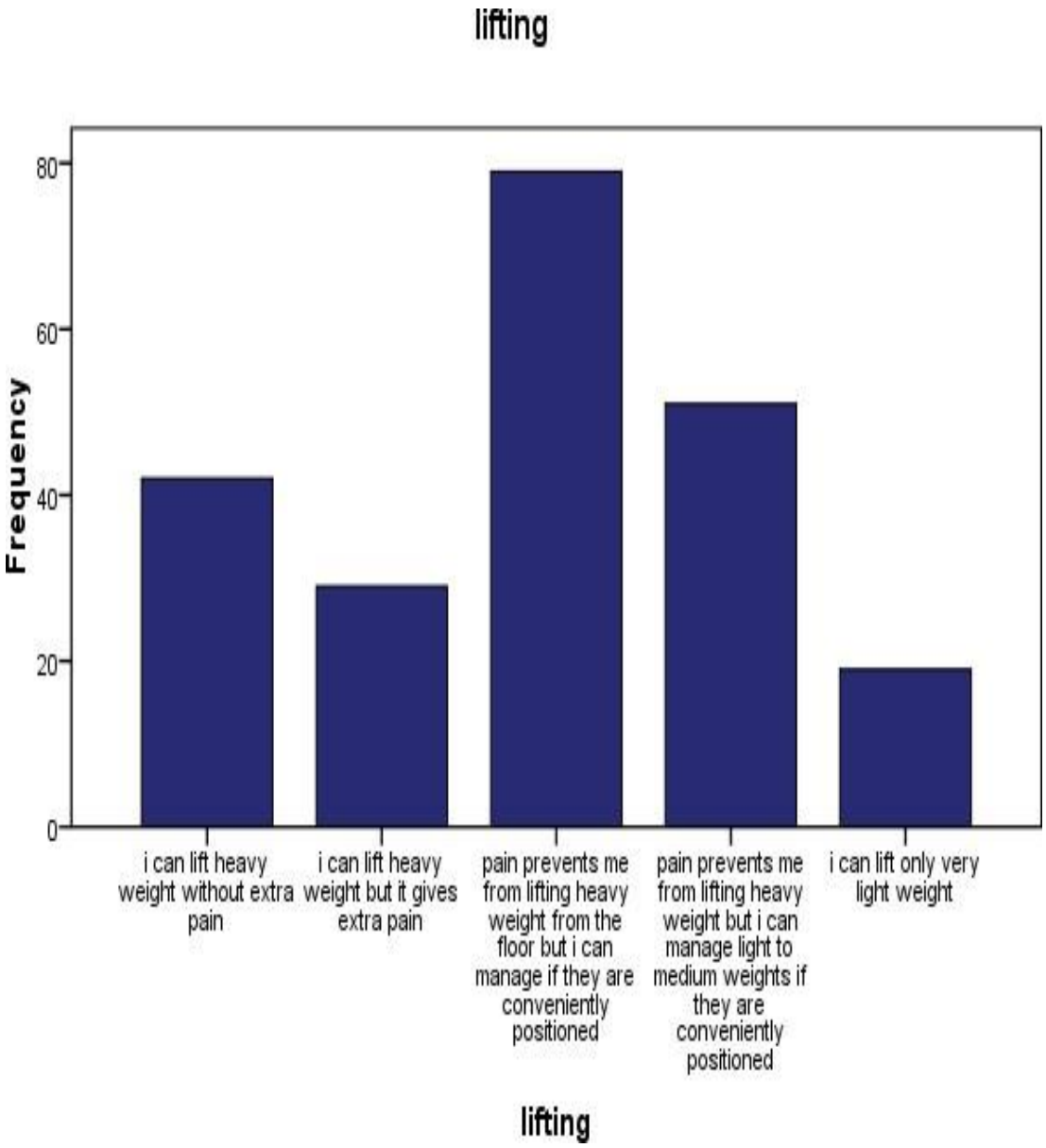
GRAPH 6: PERSONAL CARE

Lifting:

Consequently 16.11% face extra pain when lifting heavy weights. 43.88% can lift heavy weights from floor if the weights are conveniently positioned, whereas 28.33% can only lift light to medium weights from the floor even when positioned conveniently and 11.66% can only lift light weights.

Lifting	Frequency	percent
I can lift heavy weight but it gives extra pain	29	16.11
Pain prevents me from lifting heavy weight from the floor but i can manage if they are conveniently positioned	79	43.88
Pain prevents me from lifting heavy weight but I can manage light to medium weights if they are conveniently positioned	51	28.33
I can lift only very light weight	21	11.66
Total	180	100.0

TABLE 7: LIFTING

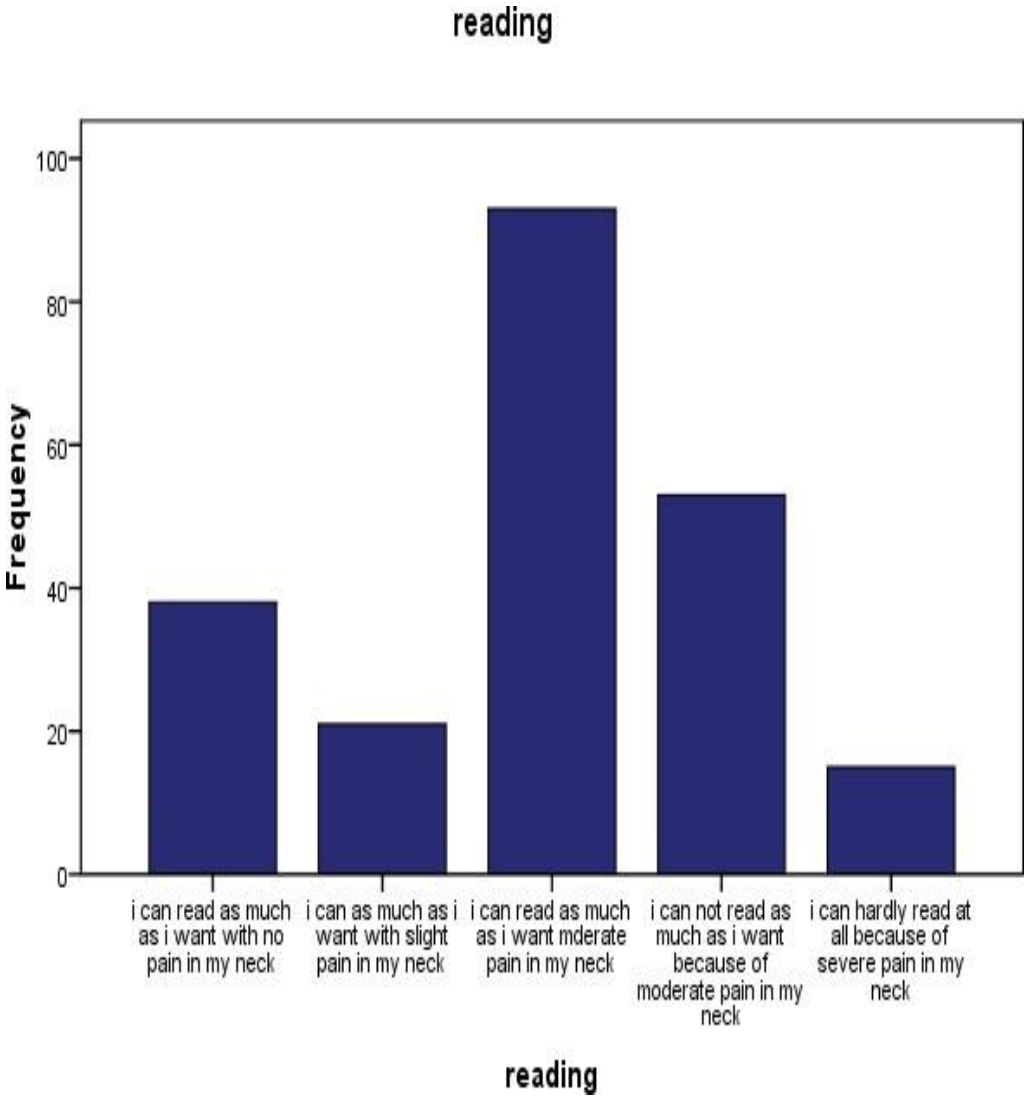


GRAPH 7: LIFTING

Reading:
11.6% experience slight pain while reading. Moreover 50.55% have moderate pain while reading but 29.44% cannot read according to their wants due to moderate pain. However, 8.33% can hardly read due to severe pain.

Reading	Frequency	Percent
I can read as much as i want with slight pain in my neck	21	11.6
I can read as much as want with moderate pain in my neck	91	50.55
I can not read as much as i want because of moderate pain in my neck	53	29.44
I can hardly read at all because of severe pain in my neck	15	8.33
Total	180	100.0

TABLE 8: READING

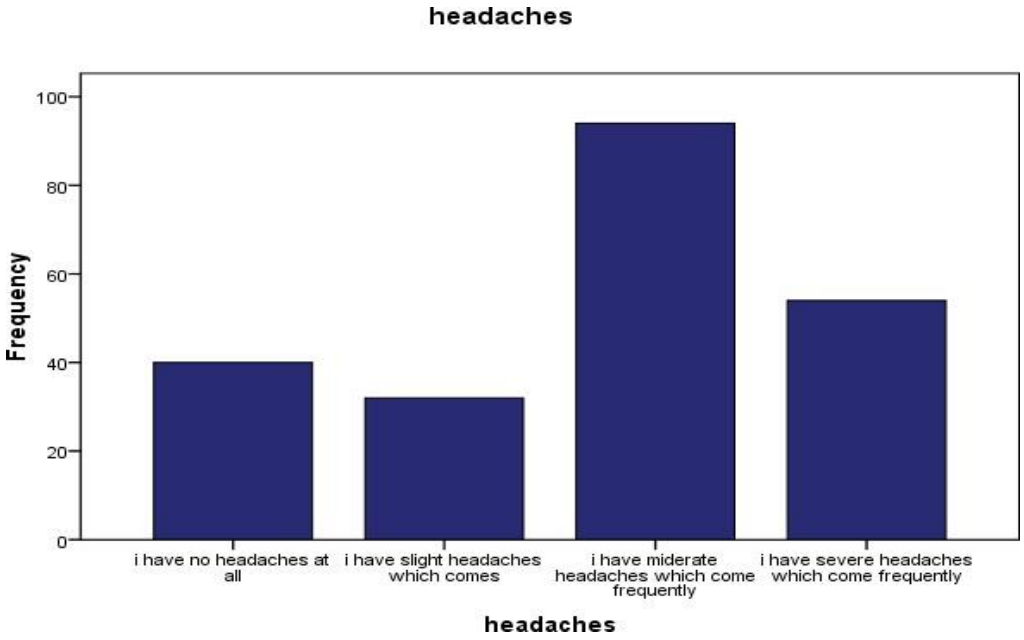


GRAPH 8: READING

Headaches:
17.77% experiences slight headache. However, 52.22% faces frequently moderate headache but 30% have frequently severe headache.

Headache	Frequency	Percent
I have slight headache which comes	32	17.77
I have moderate headache which come frequently	94	52.22
I have severe headache which come frequently	54	30
Total	180	100.0

TABLE 9: HEADACHES



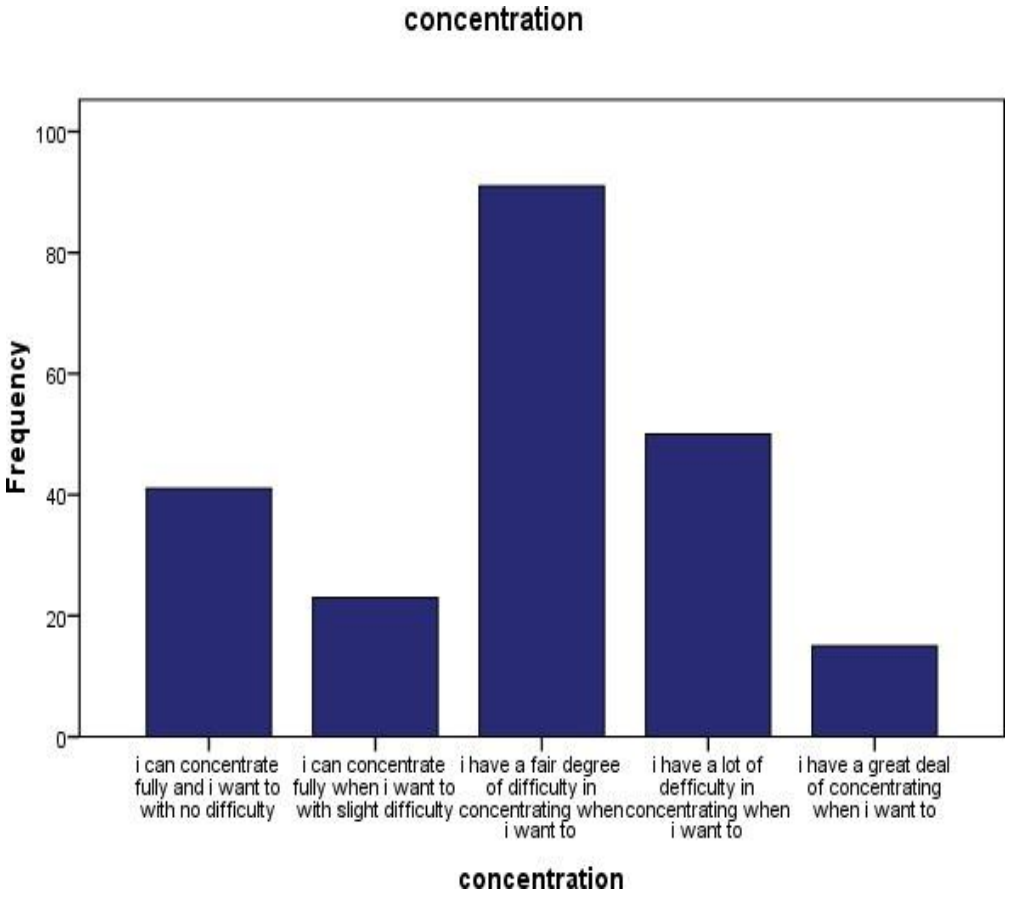
GRAPH 9: HEADACHES

Concentration:

12.77% of the participants experience slight difficulty, 51.11% experiences fair degree of difficulty in concentration while 27.77% and 8.33% face lot of difficulty
and great deal of difficulty respectively.

Concentration	Frequency	Percent
I can concentrate fully when i want to with slight difficulty	23	12.77
I have a fair degree of difficulty in concentrating when i want to	92	51.11
I have a lot of difficulty in concentrating when i want to	50	27.77
I have a great deal of concentrating when i want to	15	8.33
Total	180	100.0

TABLE 10: CONCENTRATION

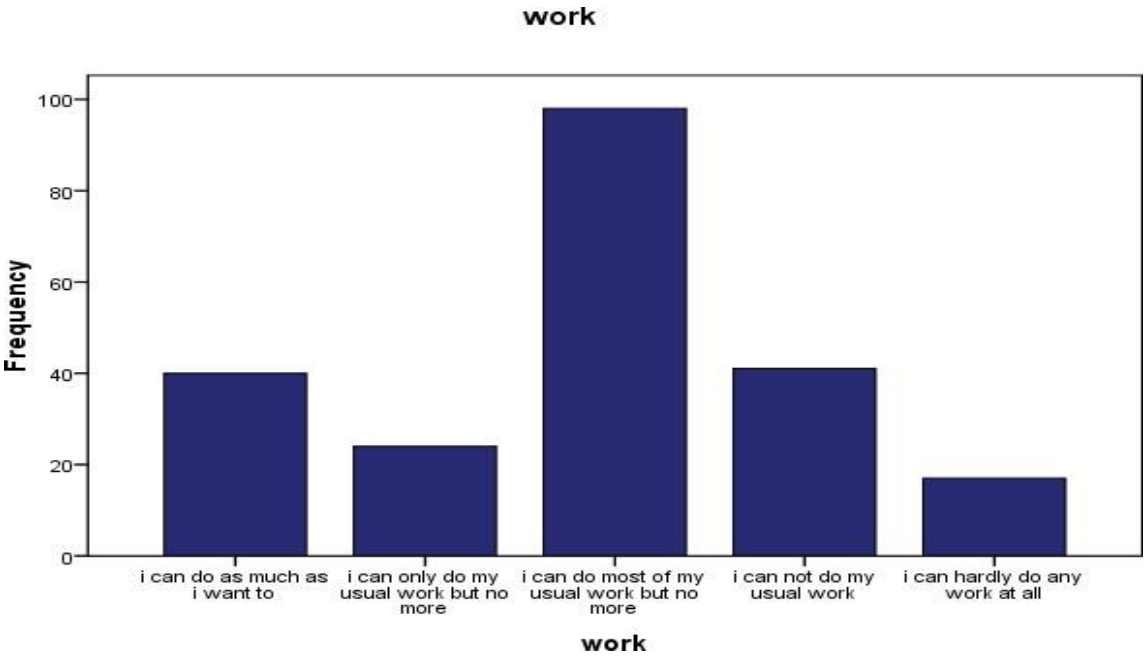


GRAPH 10: CONCENTRATION

Work:
13.33% cannot do extra work. However 54.44% can hardly do their usual work, while 22.77% cannot even perform that and 9.44% can hardly do any work at all.

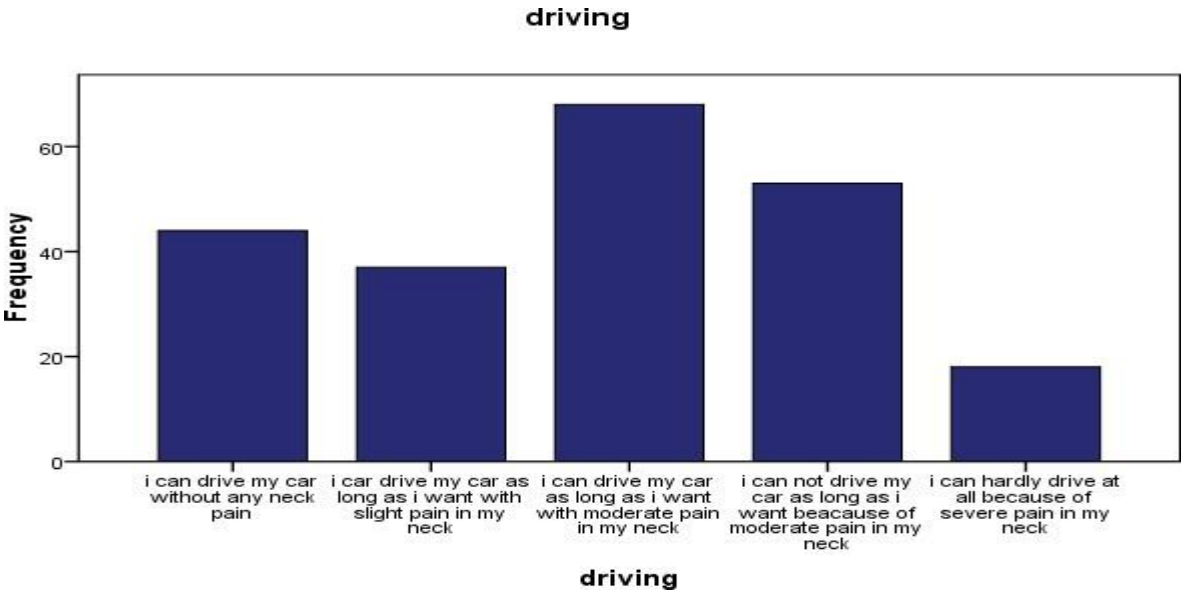
Work	Frequency	Percent
I can only do my usual work but no more	24	10.9
I can do most of my usual work but no more	98	44.5
I can not do my usual work	41	18.6
I can hardly do any workat all	17	7.7
Total	180	100.0

TABLE 11: WORK



GRAPH 11: WORK

Driving:
21.66% experiences slight pain during driving. Moreover, 38.88% have moderate pain but they can drive whereas 29.44% cannot drive as much they want due to moderate pain. At last 10% can hardly drive due to severe pain.

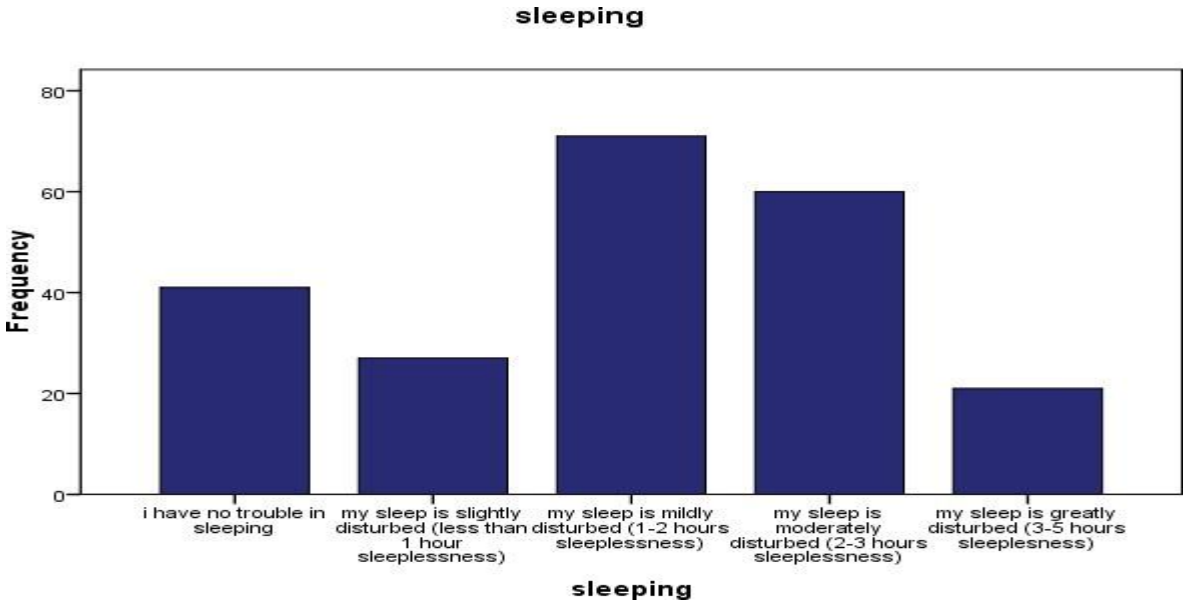


GRAPH 12: DRIVING

Sleeping:
15.55% experience slight disturbance up to 1 hour, 39.44% are mildly disturbed as they experience about 1-2 hours of sleeplessness. 33.33% go through 2-3 hours of sleeplessness and 11.66% students experience 3-5 hours of sleeplessness.

Sleeping	Frequency	Percent
My sleep is slightly disturbed (less than 1 hour sleeplessness)	28	15.55
My sleep is mildly disturbed (1-2 hours sleeplessness)	71	39.44
My sleep is moderately disturbed (2-3 hours sleeplessness)	60	33.33
My sleep is greatly disturbed (3-5 hours sleeplessness)	21	11.66
Total	180	100.0

TABLE 13: SLEEPING

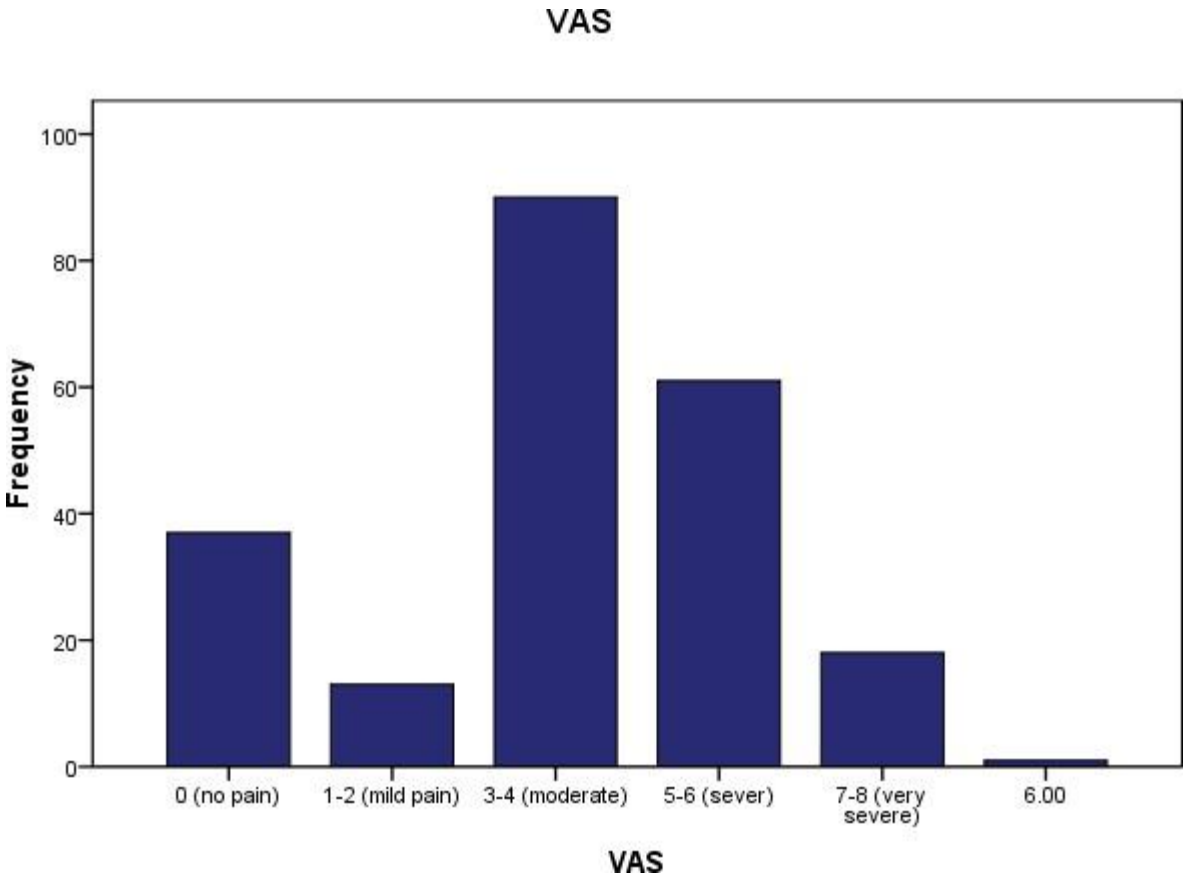


GRAPH 13: SLEEPING

VAS:
When we asked the student to score their intensity of pain, 16.66% scored it 1-2, 43.88% students scored it 3-4 which was the most common score in the survey.
27.22% students scored 5-6, 10% scored it 7-8 and 2.22% students scored 9-8.

VAS	Frequency	Percent
1-2 (mild pain)	30	16.66
3-4 (moderate)	79	43.88
5-6 (severe)	49	27.22
7-8 (very severe)	18	10
9-8 (worst pain possible)	4	2.22
Total	180	100.0

TABLE 14: VAS



GRAPH 14: VAS

DISCUSSION:

Neck pain is a painful musculoskeletal condition and one of the most commonly prevalent issues [1.] The aim of the study was to find out the prevalence of neck pain among fashion designing students especially in Karachi, Pakistan since there is a dearth of research in this research area.

The result of our study showed that out of 220 fashion designer students 81.8% had neck pain in which both genders male and female were included, aged between 2025 years. As per their rating on VAS scale, the intensity of pain in majority of students is moderate.

Prevalence of neck pain in fashion designing students is less studied area therefore there isn't much literature review to compare and contrast our research findings with. However, it can be pointed out that our findings are consistent with whatever little number of studies are available; other researches also report fashion industry professionals having neck pain[21].

Due to multiple reasons, fashion designers experience neck pain. Owing to prolonged sitting posture, highly repetitive work, use of uncomfortable chairs or stools and various related factors, fashion industry professionals suffer from musculoskeletal (MSK) conditions[21]. According to a study conducted by O. O. Akinyemi et al conducted in Nigeria, sitting position is one factor that affects the performance of local fashion designers. As per the collected data, they reported majority of the designers experienced pain, most commonly neck, leg, hand, waist and back pain, due to FADes chairs. Improved fashion designer (IFaDes) chairs alleviated the pain and brought comfort to the participants of the study[18].

An empirical study conducted in 2018 by Vandyck and et al. in Ghana and a crosssectional and descriptive study conducted in Iran also reported presence of musculoskeletal complaints among workers carpet-weaving industry respectively.

21, 22

Also it is noticeable that more women report having neck pain as compared to men. This difference between men and women is in line with other researches conducted regarding neck pain[23]. As per the study conducted by Bot and et. al, 147 times per 1000 registered persons presented with complaints of the neck or upper extremity at the general practitioners. Moreover, the incidence densities and consultation rates were higher for female than male participants of the study[24]. As shown by the data collected in the study, the participants experience difficulty in performing even daily tasks (such as personal care, lifting, reading, driving etc.) This data points towards the consequential adverse effects in their performance as fashion designing professionals. Review of the existing related literature also points towards the negative impact on production and quality of the work due to neck pain. An empirical study conducted in 2018 by Vandyck and et al. in Ghana concluded that non-adjustable seats and lack of backrest and seat pads led to negative effect on the production rate and quality[21,22].

Participants reported having sleeping issues owing to neck pain which would directly affect the health of the participant and consequently would negatively impact performance. Out of the participants reporting neck pain, around 33.3% and 12% report experiencing moderate and great disturbance in sleep respectively. Our data further shows that participants face difficulty in concentrating on tasks. Also their ability to perform tasks and do work is severely affected.

The rest of the participants (18.2%) who did not report neck pain, may have some difference in their lifestyles that might have yielded this result of the study. It might be that they have an active lifestyle instead of a sedentary one along with healthy eating habits which may have helped them in this regard.

CONCLUSION:

The study concludes that 81.8% of the undergraduate fashion designing students of
Jinnah University, Iqra University and Baqai University reported neck pain.

RECOMMENDATION :

There is scarcity of research on our topic. It is recommended that further researches be conducted in this area of research. There is a need for further studies in Pakistan to establish the prevalence of neck pain among fashion designer students and identify specific risk factors and effective measures for relieving neck pain among them.

Attention needs to be given towards the ergonomic aspect when sitting chairs or stools are being designed for fashion designing people. So that the pain is reduced, financial losses due to inability to meet the deadlines[18] and the problem of decreased production is minimized and the efficiency is maximized. Also further researches must be done on the implementation of neck or shoulder exercises for pain relief so as to bring exercise as part of routine of these workers.

Students should be taught correct posture that minimizes load on the muscle of the neck and help to decrease pain.

LIMITATIONS OF THE STUDY:

One of the limitations of this research is small sample size. Comparatively less number of people pursue fashion designing which made it difficult for us to approach fashion designing students and gather data from them. Therefore it is suggested that before the results of the study could be applied to clinical practice, more studies need to be done with a larger sample.

Another limitation in this study is that they were a convenience sample. The sample belonged to only few people of the same city. They may not represent all people with non-specific neck pain.

There is a need for further studies in Pakistan to analyse the prevalence of neck pain among fashion designer students and identify effective measures for relieving neck pain among them.

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