The Effect of Neck Pain on Quality of Life Among Students in King Saud University, Riyadh, Saudi Arabia, 2022

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Abstract

➢ *Introduction:*

Recently, the use of electronic devices and online studying keep the student under stress- ful satiations and effects of neck and back muscles. This will be affecting the Quality of life of the people. Mechanical neck pain (MNP) is described as generalized neck and/or shoulder pain with mechanical elements, such as increased NMJ symptoms by keeping a good neck position, moving around, or palpating. The cause of MNP is unknown, but it is thought to be complex.

➢ *Methods:*

A cross-sectional study was conducted at King Saud University campus All male students studying in the KSU facility are eligible to participation the sampling was Simple random The sample size Is calculated according to "Daniel equation". The total sample size after adding 10% non-response rate is 253 person The electronic form of survey distrusted ran- domly through barcode scan in entrance of college under principal investigator supervision. Electronic inform consent will obtain at the begin of the survey The questioner will have two part: first part will be about the social demographic variable The second part will be the NPDQ.

➢ *Result:*

The prevalence from participant reports in the study of neck pain was ranged from 41% for mild neck pain and 16% for moderate pain and 11% for severe pain. Finally, the linear regression model using the mean total score as the continuous outcome and the demographic variable predictors was shown the age and income, significant predictors.

➢ *Conclusion:*

About 70% of healthcare college students have neck pain with different severity with mean total effects on quietly of life ranging from 1.71% to 18.67%. this finding may be related to Study load (long study hours per week), ergonomic factors (bending the neck forward and twisting the neck for long periods of time), and computer-related factors (prolonged computer-using time daily and the keyboard too close to the edge of a desk). We can conclude that the need for more awareness about correct setting posture and time management for study hours and keep break with physical activity during use of the computer to decrease the manifestation of neck pain.

I. INTRODUCTION

The use of electronic devices and online studying keep the student under stressful sa- tiations and effects of neck and back muscles. This will be affecting the Quality of life of the people. Mechanical neck pain (MNP) is described as generalized neck and/or shoulder pain with mechanical elements, such as increased NMJ symptoms by keeping a good neck position, moving around, or palpating. The cause of MNP is unknown, but it is thought tobe complex. Neck pain can be caused by a variety of cervical structures, including uncover- tebral and intervertebral joints, neural tissues, discs, muscles, and ligaments. MNP is also thought to be caused by a myofascial trigger point in the head, neck, shoulder, or upper back muscles, as well as a paracervical muscle spasm. The pain intensity was measured using the Numeric Rating Scale (NPS-11). The NPS-11 scale goes from 0 to 10. (0: minimum pain, 10: maximum pain). It has been proven to be a trustworthy and valid instrument for pain evaluation.

Musculoskeletal pain (MSP) was prevalent at at least one body site at any time, in the previous week, and in the previous year by 85.3% [1] Recurrent or chronic neck discomfort affects a large number of people around the world, resulting in lower quality of life and huge social expenses. It's a challenging condition to handle clinically, and therapy effect sizes are usually modest at best. According to current standards, activity and manual therapy are the first-line therapeutic alternatives. In a multicenter randomized controlled clinical research conducted in multidiscipline primary care clinics, we wanted to explore the combination of home stretching exercises and spinal manipulative therapy. [2] Neck pain is common and can have a significant impact on patients' physical functionality, mobility, and quality of life (QOL). [3] Individuals with neck discomfort exhibited lower EQ5D-Index scores (0.84 0.25 vs. 0.93 0.15; 95 percent CI 0.046-0.132, P 0.001) and EQ5D-VAS scores (68.76 14.59 vs. 73.86 13.64; 95 percent CI 2.510-7.697, P 0.001) than those without neck pain. [4] The application and training process in university is challenging, and many students face significant physical and emotional stress. Academic, ethical, and economical demands have all contributed to a high frequency of psychological illnesses, such as burnout and depression [5]. Even in young people, psychological

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discomfort can appear as musculoskeletal symptoms [6–8] Low back pain (LBP) and neck pain (NP) were discovered to be the number one and four leading causes of years spent disabled, respectively, and may have a major impact on student Quality of Life (QOL), which has yet to be investigated [9].

➤ *Rational and Significant:*

Neck pain (NP) and low back pain (LBP) are two with the most frequent causes of disability, thanks to the increased use of technological devices and a sedentary lifestyle. There is a lack of data on the severity and prevalence of this illness. In Saudi Arabia, NP and LB are associated to issues with quality of life (QOL).The goal of this research was tofigure out what makes NP and LBP so different among Saudi Arabian pupils.

CVD is an increasing public health concern in the Middle East and the Gulf Council Countries (GCC). It is estimated that CVD's overall deaths in the GCC, including Saudi Arabia, represent over 45% of all deaths (2)

➤ *Research question:*

What are the estimated ten years arteriosclerosis cardiovascular risk among Al-Harja peoples' in Aseer, Saudi Arabia?

➤ *AIM:*
To Assess the prevalence of neck pain among students.
To assess the prevalence of low back pain among students.To measure the effects on Quality of life among students.

➤ *Outcomes:*
Primary outcome: Arteriosclerotic Cardiovascular Disease Score
Secondary outcome: Prevalence of Hypertension, type 2 Diabetes mellites, Cholesterol level, Dyslipidaemia, and Obesity in the Al-Harjah rural area.

➤ *The impact of the study on Saudi Vision 2030 :*
His Highness Prince Mohammed bin Salman launched the Quality of Life 2030 Program,one of the initiatives of the Saudi Vision 2030, which aims to improve the quality of life for the residents of the Kingdom of Saudi Arabia. The results of the study on this topic (neckpain), will contribute to identifying this problem and working to avoid it quickly to avoidthe burdens, including the high costs of physiotherapy for late cases, as well as the costs of operations for complex cases, as well as the core of the topic, which is to increase the quality of life of the individual in the Kingdom. (11)

After obtaining Institutional Board Review approval, a cross-sectional survey of medical students enrolled at a major faculty recognized by the Saud University Committee will be conducted from January to March 2022. (IRB). The filming location will be on the campus of King Saud University. All male students enrolled at the KSU facilities are eligible to compete.

Random sampling at its most basic. Under the supervision of the principal investigator, the electronic version of the survey was distrusted at random using barcode scanning at the campus entry. At the start of the survey, electronic informed consent will be obtained. A three-part socioeconomic and demographic variable is included in the survey. The Visual Analog Scale was used to evaluate the degree of pain and the accompanying QOL concerns (VAS). The Neak Pain Disability Index (NPDI) evaluates the severity of 15 quality-of-life difficulties that students connect with NP or LBP. Analytical statistics Descriptive statistics were calculated using the mean and standard deviation. The association between hours spent on lifestyle activities per week and PSS-10 score, VAS neck, VAS back, and ODI score was investigated using the Pearson product-moment correlation coefficient. The connection between moderately to severe NP (VAS neck 3), LBP (VAS back 3) and QOL concerns (ODI9) and BMI, lifestyle activities, and PSS-10 scores was studied using independent samples t-tests.

II. RESULTS

The prevalence from participant reports in the study of neck pain was ranged from 41% for mild neck pain and 16% for moderate pain and 11% for severe pain. The participant in the study was 8.2% obese and 28.1% over wight while they remain is normal.76.4% have an income level less than 10000 Saudi riyals the income is a significant predictor of p-value

Research design / Study design Ethical approval.	A cross-sectional study King Saud University Institutional Board Review permission (IRB).
Setting Participants / Sample / Subjects	King Saud University campus All male students studying in the KSU facility are eligible to par- ticipation Simple random sampling The sample size Is calculated ac- cording to "Daniel equation". The total sample size after adding 10% non-response rate is 253 person
Instruments / Measures.	Sociodemographic variable. The severity of pain and the asso- ciated QOL issues were graded ac- cording to the Visual Analog Scale (VAS). The Neak pain Disability Index (NPDI) questionnaire as- sesses the degree of severity of 15 quality of life issues that students associate with NP or LBP.
Data collection.	The electronic form of survey dis- trusted randomly through barcode scan in entrance of college under principal investigator supervision. Electronic inform consent will ob- tain at the begin of the survey The questioner will have two part : first part will be about the social de- mographic variable such as : Age , Gender ,Nationality , Education , BMI , Monthly income and Mari- tal statis. The second part will be the NPDQ. (10)

Statistical analyses.	The mean and standard deviation were used to obtain descriptive statistics. The Pearson product- moment correlation coefficient was used to examine the relationship between hours spent on lifestyle activities per week and PSS-10 score and VAS neck, VAS back, and ODI score. Using indepen- dent samples t-tests, theMraeyla6t,io2n02-2 ship between moderate to severe NP (VAS neck 3), LBP (VAS back 3) and QOL concerns (ODI 9) and BMI, lifestyle activities, and PSS- 10 score was investigated.

Table 1:- Summary of Study Methodology

<0. 05. The bachelor's degree was more than half of participants master's degree 27.3% and doctorate 19.6% the degree is a significant predictor for neck pain with p-value <0. 05.Almost all of the participant's Saudi nationality and from health care college with about one third from the collage of medicine. The age of the participant was ranged from 18years to more than 65years. The mean score of pain intensity 1.12+-1.06, the mean effect on self- care 0.74+-1.09, the mean effect on carrying thing 1.11+-1.06, the mean effect on reading 1.07+-1.11, the mean effect on concentration 1.12+-1.14, the work and entertainment havealmost same mean score 1.26, the mean score of driving was1.18+-1.16, sleep have the higher mean 1.32+-1.23 and the total mean score was 10.19+-8.48 if we use the formula to convertit in percent it will be range from 1.71% to 18.67%. Finaly, the linear regression model using the mean total score as the continuous outcome and the demographic variable predictorswas shown the age and income, significant predictors.
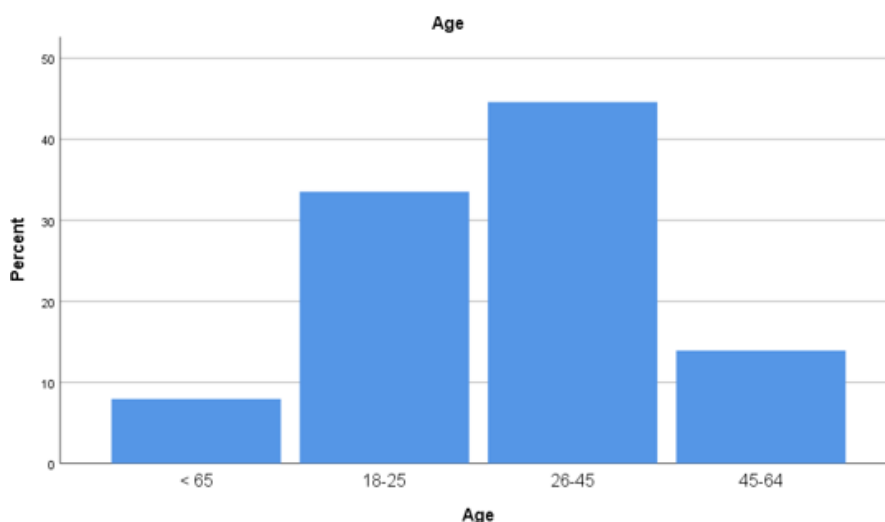

Fig 1:- Age category of study particpant

* Test with a total score
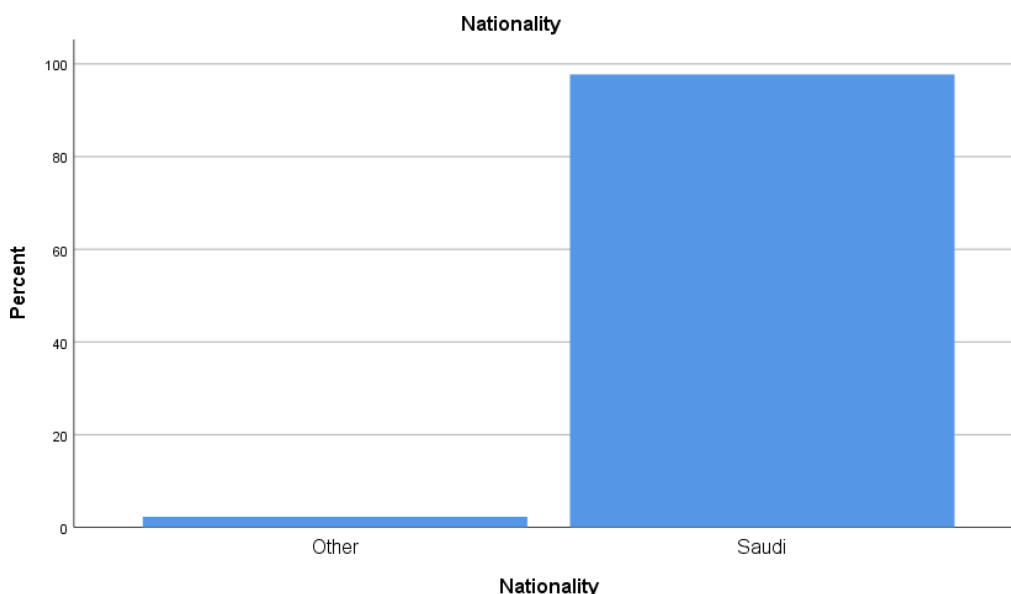Liner regression of total score with sociodemographic variables
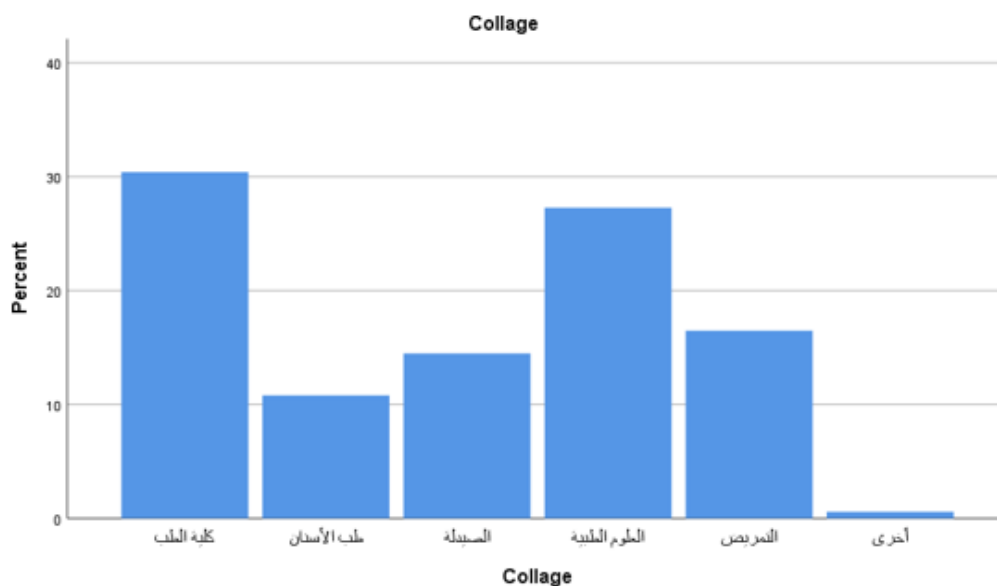

Fig 2:- Nationality of participant

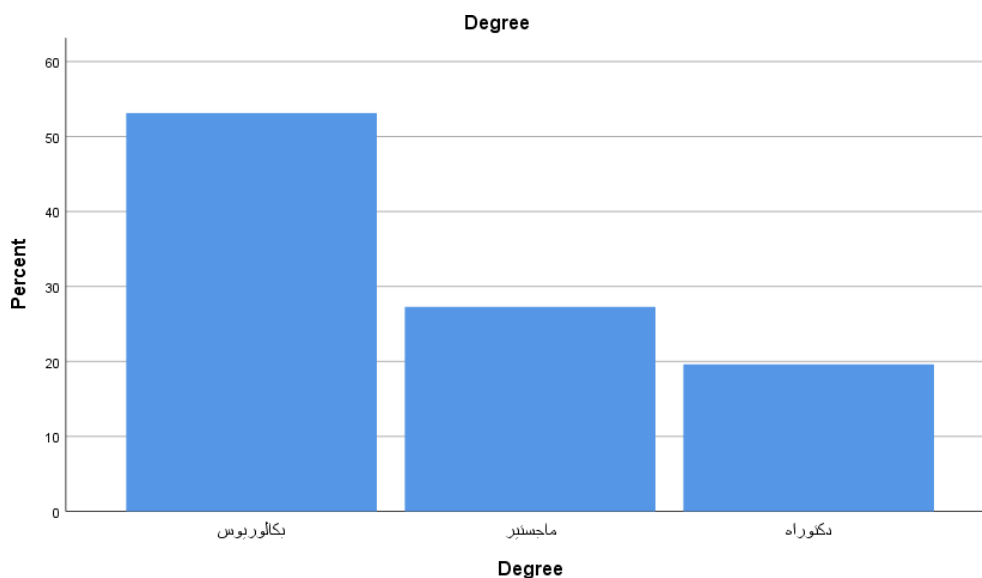Fig 3:- The distrupation of participant amoung collage
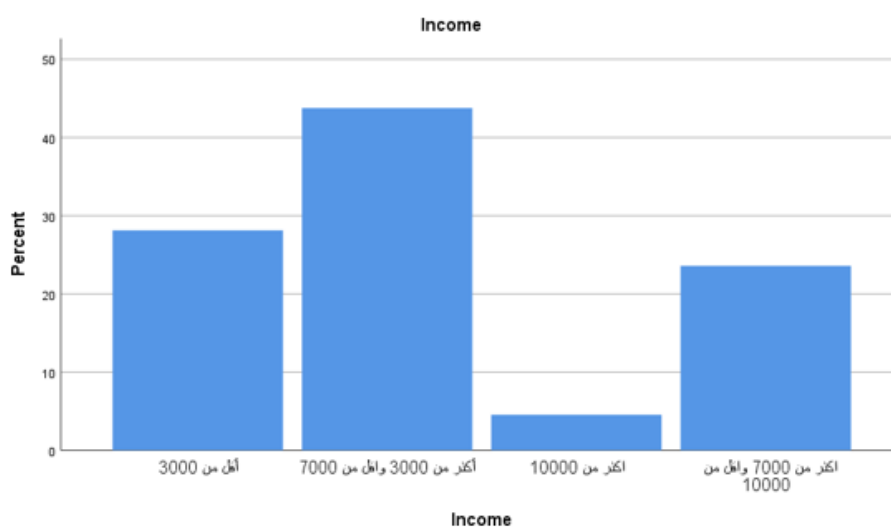

Fig 4:- The degree of participant

Fig 5:- The income level of participants

Percent Age	Frequency	Variable
8.0%	28	< 65
33.5%	118	18-25
44.6%	157	26-45
13.9%	49	45-64
Nationality		
2.3%	8	Other
97.7%	344	Saudi
Collage		
30.4%	107	Medicine
10.8%	38	Dentistry
14.5%	51	Pharmacy
27.3%	96	Applied medical
16.5%	58	Nursing
0.6%	2	Other
Degree		
53.1%	187	Bachelor
27.3%	96	Master
19.6%	69	Doctorate
Income		
28.1%	99	< 3000
43.8%	154	3000-7000
4.5%	16	> 10000
23.6%	83	7000 - 10000
Body mass index		
62.7%	221	Normal
28.1%	102	Overweight
8.2%	29	Obesity

Table 2:- Socio-demographics characteristics of the participants

Question	N	Range	Minimum	Maximum	Mean	Std. Deviation
Pain intensity	352	5	0	5	1.12	1.066
Self-care	352	5	0	5	.74	1.093
Carry thing	352	5	0	5	1.11	1.067
Reading	352	5	0	5	1.07	1.111
Concentration	352	5	0	5	1.12	1.145
Work	352	5	0	5	1.26	1.147
Driving	352	5	0	5	1.18	1.160
Sleep	352	5	0	5	1.32	1.237
Entertainment	352	5	0	5	1.26	1.299
Total	352	40	0	40	10.19	8.485

Table 3:- table 2: The mean value of questionnaire answer

Variable	Test	P.Value	Note
Age	Chi2	0.000	Test between age group
Nationality	T-test	0.149	Test between Saudi and other
Collage	ANOVA	0.573	Test between different collage
Degree	ANOVA	0.000	Test between different degree
Income	ANOVA	0.000	Test between different Income

Table 4:- The mean value of questionnaire answer

Linear regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.975	1.123		1.759	0.079
	Age	2.222	0.595	0.233	3.736	0.000
	Nationality	-3.395	2.345	-0.060	-1.448	0.149
1	Collage	-0.082	0.231	-0.015	-0.357	0.722
	Degree	1.691	0.681	0.156	2.481	0.014
	Income	3.422	0.563	0.337	6.076	0.000
a. Dependent Variable: Total score						

Table 5:- The bivariate test of total score with sociodemographic variable

III. DISCUSSION

If we sum the all range of severe in neck pain the prevalence will be 70% which is very near to study done in China among health care workers which report 69% [10]The frequency of various types of neck pain, including chronic neck and effect on the quality of life absence owing to the neck, was found to be relatively widespread among student in healthcare collage in this study, with King Saud University. Study load (long study hours per week), ergonomic factors (bending the neck forward and twisting the neck forlong periods of time), and computer-related factors (prolonged computer-using time daily and the keyboard too close to the edge of a desk) were found to be associated with neck among student in healthcare college, providing more evidence for the influencing factors for neck among King Saud University. Possible influencing factors that occur outside of the workplace, such as smartphone use and sleep habits, as well as psychosocial characteristics that may be linked to neck pain, were not gathered, potentially biasing our findings through residual confounding. Neck ache. It is linked to a higher level of disability owing to neck problems as well as a lower overall health-related quality of life. [11] The study was done in Dharan Saudi Arabia for all musculoskeletal pain including neck pain find findings of this study demonstrated that healthcare workers suffer from a high rate of MSDs in the neck, shoulder, and lower back (72.6 percent) which confirm our finding. Another study was done in Qassim found the most painful areas associated with debilitating discomfort werethe neck and shoulders.

IV. CONCLUSION

About 70% of healthcare college students have neck pain with different severity with meantotal effects on quietly of life ranging from 1.71% to 18.67%. this finding may be related to Study load (long study hours per week), ergonomic factors (bending the neck forward and twisting the neck for long periods of time), and computer-related factors (prolonged computer-using time daily and the keyboard too close to the edge of a desk). The need formore awareness about correct setting posture and time management for study hours and keep break with physical activity during use of the computer to decrease the manifestation of neck pain.

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