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Characteristics of Neck Pain in Medical Students of Muhammadiyah Jakarta University Class of 2019 After Online Class for One Semester

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ABSTRACT

Introduction: Neck pain is a very common complaint in everyday life. Neck pain is a multifactorial disease with many associated risk factors. In population studies, 20-60% of women and 15-40% of men have experienced neck pain. Neck pain is a health problem that can develop and interfere with a person daily activity.
Method: This research is a descriptive analytic survey research, which aims to know about neck pain of the students of the Medical Education Study Program Class of 2019. approach used in this study is "cross sectional study", with a total sample of 113 respondents.
Result and Discussion: From the 113 respondents the results of research conducted through a questionnaire, there were 76 respondents (67,3%) who experienced neck pain. In the category based on the length of sitting, 76 respondents (67,3%) experienced complaints of neck pain and the results of statistical analysis (P = 0.455) where there was a significant relationship between the length of sitting and complaints of neck pain. In the category of the relationship between the most frequent learning position, there were 76 respondents (67,3%) and the results of statistical analysis (P = 0.586), there was no significant relationship in the most frequent learning position with neck pain complaints and in the learning location category 76 respondents (67,3%) and the results of statistical analysis (P = 0.315), namely that there was no significant relationship in the category of study location with neck pain complaints.
Conclusion: There is no significant relationship between learning position and length of sitting with complaints of neck pain in students of 2019 Medicine Program of Muhammadiyah Jakarta University. Because, the sitting position and length of sitting are not the only factors that cause neck pain complaints.
Keywords: Neck Pain, Duration of Sitting, Sitting Position, Students.

1. Introduction

Currently Indonesia is facing a pandemic. Almost all sectors of life were disrupted, including the education sector. The government asked to ban face-to-face learning and replace it with Home Learning (BDR). [1] WHO gives an appeal to stop events that can cause crowds to gather. Therefore, direct learning that involves students in the classroom is reviewed for its implementation. [2]

The form of learning that can be done during the Covid-19 pandemic is online learning. Online learning is a learning mode that uses an internet network with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions. Online learning requires a mobile device, and its use can have an effect on health, one of which is musculoskeletal disorders such as neck pain. [2]

According to Kraker and Blatter pain in the neck and upper extremities is a common disorder in someone who works in front of a computer with a prevalence of 25% for the neck and shoulders and 15% for the arms in Europe. Neck pain is a very common complaint, 70% of the population has experienced it in their life. In population studies, 20-60% of women and 15-40% of men report experiencing neck and shoulder symptoms

in their lifetime. Neck pain is often thought of as a simple matter, but it can develop into a complex disorder. [3]

Neck pain is a multifactorial disease with many associated risk factors. Can be divided into 3 categories: physical, psychosocial and individual factors. [4] Neck pain can arise when learning in the wrong body position so that the neck is in a certain position for a long time. Another example of a situation that can cause pain in the neck is sitting all day working at a computer, and work related to heavy loads. [5] Someone who spends a lot of time sitting at a computer has a greater risk of experiencing neck pain. [6]

Neck pain can have an impact on the individual himself, their family, the surrounding environment, the health care system and also the business. The individual may experience difficulties in his daily activities or even in his work. In low-income countries, the impact may be devastating. A study in the Netherlands found that neck pain cost USD 686,000,000 in 1996. Analysis revealed that direct costs, such as health care, accounted for only 23% of this figure whereas indirect costs, such as absenteeism and disability, amounted to 77%. of the total cost.[7]

According to research conducted by Palmer, et al in England, Scotland and Wales on 12,907 respondents aged 16-64 years, it was shown that people who work with their upper arms or shoulders for more than one hour per day have a significant relationship with neck pain. With a Prevalence Ratio of 1.3-1.7 in women and 1.2-1.4 in men, but not related to those who work by typing, lifting, using a vibration device (vibration), or as a professional driver. [5]

It is estimated that the incidence of neck pain in medicine student in University of Muhammadiyah Jakarta Class of 2019 who are undergoing distance learning with this online system can increase and affect learning productivity. Thus, it is necessary to conduct research on the effect of learning position and sitting duration on neck pain

2. Method

This study used a descriptive method to explain accurately, record either the sitting position and duration. This study used a cross-sectional design where the data collection of independent and dependent variables was carried out once at the time. The population in this study was 113 students in University of Muhammadiyah Jakarta Class of 2019 and required to fill out the questionnaire. The determination of the sample used a simple random sampling technique. The period time of this research lasted from September to December 2020.

3. Results and Discussion

The results of univariate analysis can be seen below:

Table 1. Percentage of low back pain in medical students

Neck Pain	Frequency (N)	Percentage (%)
Yes	76	67.3
No	37	32.7

Based on the table above, there were 76 respondents (67.3%) who experienced complaints of neck pain, and 37 respondents (32.7%) did not experience complaints of neck pain. Characteristics of students / I will be shown in the table below.

Table 2. Characteristics of respondents

Variable	Frequency (N)	Percentage (%)
Sex		
Female	81	71.7
Male	32	28.3
Smoking		
Yes	11	9.7

No	102	90.3
Neck-Head Trauma		
Yes	11	9.7
No	102	90.3

Based on the data for the characteristics of respondents based on gender, 113 respondents were obtained with a description of 81 respondents (71.7%) female and 32 (28.3%) male respondents. For characteristics based on smoking history, 11 respondents (9.7%) smoked and 102 respondents (90.3%) did not smoke. For characteristics based on a history of neck-head trauma, it was found that 11 respondents (9.7%) had experienced it and 102 respondents (90.3%) had never experienced it.

In research conducted by Chriselyns Kinski Situmorang, Baju Widjasena, Ida Wahyuni in 2020 concerning the Relationship Between Duration and Body Posture of Computer Use Against Neck Pain Complaints in Educational Staff at the Faculty of Public Health, University of Diponegoro with 28 respondents (59.6%) Male and 19 respondents (40.4%) Female. Whereas in the research conducted by Ekawati Wasis Wijayati in 2020 regarding the Risk of Work Posture on Subjective Complaints of Neck Pain in Leather Craft Industry Workers, there were 34 male respondents (81%) and 8 respondents (19%) female.

Table 3. Characteristics of respondents based on study position

Study position	Frequency (N)	Percentage (%)
Study desk	78	69.0
Sit on the floor	26	23.0
Sit on the chair	9	8.0

Based on the table above, there are 78 respondents (69.0%) studying at study tables, 26 respondents (23.0%) studying by sitting on the floor and 9 respondents (8.0%) studying by sitting on chairs.

Table 4. Characteristics of respondents based on most frequent study position

Study position	Frequency (N)	Percentage (%)
Study desk	31	27.4
Sit on the floor	29	25.7
Sit on the chair	53	46.9

Based on the table above, there are 31 respondents (27.4%) who have a learning position at a study table, 29 respondents (25.7%) have a learning position sitting on the floor, and 53 respondents (46.9%) have a learning position sitting at chair.

Table 5. Characteristics of respondents based on learning devices used

Learning device	Frequency (N)	Percentage (%)
Handphone/Tablet	10	8.8
Computer/Laptop	103	91.2

Based on the table above, there are 10 respondents (8.8%) who use mobile phones/tablets as devices for online learning, and 103 respondents (91.2%) who use computers/laptops as devices for online learning.

In this study, bivariate analysis was carried out which described the relationship between the dependent variable, namely neck pain, and the independent variables, namely learning position and learning duration. This analysis was carried out using the Chi-Square test. Following are the results of Bivariate Analysis.

Table 6. Table of the relationship of long sitting with complaints of neck pain

Study duration	Neck pain		No neck pain		p-value
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)	
<8 hours	28	71.8	11	28.2	
≥8 hours	48	64.9	26	35.1	0.455
Total	76	67.3	37	32.7	

Based on the results above, it can be seen that there were 39 respondents who had study time of <8 hours/day, 28 of them (71.8%) experienced neck pain, and 11 respondents (28.2%) did not. Meanwhile, there were 74 respondents who had study time > 8 hours/day, 48 respondents (64.9%) experienced neck pain, and 26 respondents (35.1%) did not. Significant Pearson Chi-Square value was obtained that there is no significant relationship in this study.

In the research conducted by Chriselyns Kinski Situmorang, Baju Widjasena, Ida Wahyuni in 2020, it was found that from 47 respondents, 31 respondents (66%) complained of complaints of neck pain, 22 respondents (66.7%) with computer duration > 4 hours/day complained of neck pain and 9 respondents (64.3%) with computer duration <4 hours/day complained of neck pain.

In a study conducted by Ekawati Wasis Wijayati in 2020, out of 42 total respondents, 33 respondents (78.6%) complained of neck pain. And based on the old category of maintaining work positions in the short category (<1 hour/day) there were 8 respondents, the medium category (1-2 hours/day) 26 respondents, and the old category (> 2 hours/day) there were 8 respondents.

Based on the results of the data in the table above, it is known that 54 people (69.2%) studied at the study table and experienced complaints of neck pain. Respondents who studied by sitting on the floor and experienced complaints of neck pain were as many as 18 people (69.2%) and respondents who studied by sitting on chairs and experienced complaints of neck pain were 4 people (44.4%). The chi square statistic conducted that there is no significant relationship between neck pain and normal study position.

This study concluded that the respondents who sat most frequent at the study desk were 35 people (66.0%). The position at the study table and experiencing complaints of neck pain were 23 people (74.2%). Respondents whose study position most frequent sat on the floor and experienced complaints of neck pain were 18 people (62.1%) and respondents whose study position most frequent sat on chairs and experienced complaints of neck pain were 35 people (66.0%) The chi square test concluded that there is no significant relationship to neck pain with the most frequent learning position.

Table 7. The relationship between study based on normal study position and most frequent position during online class and neck pain

Online class study position	Neck pain		No neck pain		p-value
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)	
Normal					
Study desk	54	47.8	24	21.2	
Sit on the floor	18	15.9	8	7.1	0.315
Sit on the chair	4	3.5	5	4.4	
Total	76	67.3	37	32.7	
Most frequent					
Study desk	23	20.4	8	7.1	
Sit on the floor	18	15.9	11	9.7	0.586
Sit on the chair	35	21.0	18	15.9	
Total	76	67.3	37	32.7	

There is research conducted by Chriselyns Kinski Situmorang, Baju Widjasena, Ida Wahyuni in 2020 on 47 respondents based on computer use neck posture, 21 respondents with low risk (bowing down by

forming an angle of 10-20 degrees, 9 respondents with moderate risk and 1 respondent with high risk (neck posture in a bent state with an angle of > 20 degrees or lifting with the neck flexed or rotated.

This study used a cross-sectional method where data was taken at certain times, and during a pandemic, as it is currently, the researcher utilized Google form technology, where the questionnaire was distributed to students through the heads of the Cempaka Putih and Cirendeu classes for the 2019 class. The obstacle that occurred during data collection was that the data could not be obtained directly because of the online activities of students so that they needed to be repeatedly reminded to fill out the questionnaires that had been distributed.

It is important to know how to set a good sitting position, not sitting static for long periods of time, and knowing what risk factors can cause neck pain so as to avoid complaints of neck pain during online learning. This study should be continued because this complaint is often experienced by students. It is hoped that future researchers will link this new variable to complaints of neck pain.

4. Conclusion

Based on the relationship between study period and neck pain, it can be concluded that there was no significant relationship between them. In addition, there was no significant relationship between low back pain and study position both before and during online class.

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None.

Conflict of Interest

The authors declare no conflicts of interest in preparing this article.

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