

The Relationship Between Smartphone Use and Musculoskeletal Symptoms of Physiotherapy Students During Covid-19 Pandemic

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ABSTRACT

Development in smartphone in research company IDC (International Data Corporation) in market smartphone in 2011 years increase in 49,2 %,as a result in increase user smartphone can be relate user smartphone in daily. Everyone in the world use smartphone in averages 7 hours. Use over is can problem in musculoskeletal **Method:** Resaerch is method cross sectional design for is known correlation duration of use mobile phones with problem musculoskeletal in student diploma 3 Physiotherapy UPN Veteran Jakarta. sample is use in critera inclusi and exclusion. **Result:** sample is totally 60 people. Is use analysis univariat and bivariat.result use spearmen test is $P = 0,000$ is means $P < 0,005$ result is have correlation long time use smaprtphone with problem musculoskeletal in student Diploma 3 physiotherapy UPN Veteran Jakarta. **Conclusion:** Research in conclusion as means have correlation long time uses smartphone with problem musculoskeletal in student diploma 3 Physiotherapy.

Keywords: *problem musculoskeletal, smartphone, student*

1. INTRODUCTION

The cellular telephone industry has experienced rapid development in the last two decades, both in developed and developing countries. Even in Indonesia cell phones have radically changed the map of the telecommunications industry. Phones that were once a luxury item, so that only certain groups can enjoy them, now they can easily get them, cheap, both in fixedline wireline telecommunications facilities or fixedline wireless and cellular telecommunications [1]. The development that occurred in smartphones is evidenced in a marketing research company IDC (International Data Corporation) that the smartphone market in 2011 experienced a growth of 49.2 percent, due to the increasing number of users replacing their old cellphones with smartphones. The report is in line with IDC's latest research, which predicts the number of mobile application downloads of 10.9 billion in 2010 to 76.9 billion in 2014. According to Bisnis Indonesia smartphone customers in 2010 penetrated 6.24 million

subscribers. In this case the Blackberry smartphone has brought down Nokia [3]. The use of smartphones has a positive influence other than for a communication tool as well as helping us to always be well connected to our friends and close relatives and family, but smartphones can also have a negative influence if used incorrectly even more with sophisticated features. Wireless digital communication is already needed in various fields, such as education, business, entertainment, health or security; The availability of mobile devices that can support user activities in various environments with high flexibility, devices that are more practical and easier to use. Very high needs and ease of access are the main things causing a strong influence to use a smartphone. As globalization progresses, you can say that most people use smartphones. They get many benefits, can contact friends more easily, access their social networking accounts or blogs directly in their own hands, and search for study material from sites on the internet without having to feel uncomfortable.

Until now, smartphones are still a trend of all people in Indonesia, including the environment around us. [2] Among millennials aged 20-35 years, 94.4 percent have been connected to the internet. As many as 98.2 percent use smart phones an average of 7 hours a day. Even 79 percent immediately check smart phones 1 minute after waking up [6]

Musculoskeletal problem are complaints that occur in the skeletal or skeletal muscles that are felt by a person ranging from very mild complaints to very painful. If the muscle receives a static load repeatedly and over a long period of time it can cause complaints in the form of damage to the joints, ligaments and tendons. Factors causing musculoskeletal complaints are excessive muscle stretching, repetitive activities, unnatural work attitudes, secondary causes and combined causes [7]

2. METHOD

This research is a cross sectional study. This research will be conducted together for the same type of case and sample. Therefore, the determination of the amount of sample size in this study is a combination of the results of calculations from all groups joined in the research. The subjects of this research are the D3 Physiotherapy Students of UPN Veteran Jakarta.

Data Collection Techniques:

1. Selecting prospective respondents according to inclusion and exclusion criteria using purposive sampling techniques is Students of D3 Physiotherapy UPN Veterans Jakarta,
2. Providing questionnaire respondents using Google forms, explaining the intent and purpose of research through online. The researcher brings the application letter and questionnaire and consent sheet to become respondents through Google Form, 3) The researcher explains the stages of the study after the prospective respondent is online, 4) The respondent signs the consent form through Google Form, 5) The researcher conducts the questionnaire through the Google form about duration of use mobile phones in a day and the Nordic Body Map to respondents.

Data analysis using univariate and bivariate analysis, univariate consists of individual factors is age and sex. Bivariate analysis was conducted to examine the duration of use mobile phones with Musculoskeletal Problem in UPN Veterans Jakarta Students Test used was spearman test.

3. RESULTS

Description of Research Subjects

Description of the sample data is use by univariate analysis to determine the frequency of sex and duration of use of mobile phones.

Table.1 Distribution of Subject Characteristics based on gender and duration of use mobile phones in a day

Character Sample	N	Precentage (%)
Gender		
Man	9	15 %
Woman		
	51	85 %
Duration Use Mobile Phone (Hours)		
3 hours	1	1,7 %
4 hours	5	8,3 %
5 hours	7	11,7 %
6 hours	8	13,3 %
7 hours	3	5,0 %
8 hours	13	21,7 %
9 hours	4	6,7 %
10 hours	7	11,7 %
11 hours	3	5,0 %
12 hours	4	6,7 %
14 hours	3	5,0 %
18 hours	2	3,3 %

Based on the data table above most respondents were female with 51 people while male respondents were 9 **Analysis between duration of mobile phone uses and musculoskeletal problem.**

Normality Test

Results from bivariate analysis of the duration of use mobile phones and musculoskeletal problem. Before a bivariate test is performed, the Normality test is first performed. The normality test will be carried out with Kolmogorov-Smirnov. This test is performed to meet the statistical test requirements. The statistical test is a parametric statistical test for those with normal distribution and non-parametric for those with abnormal distribution.

Table 2. Normality test duration of use mobile phones in a day and Nordic Body MAP

Categorical	Results test
Duration of Use Mobile Phones	0,002
Nordic Body Map	0,000

Bivariat Test

The Result Test use spearmen test. Result is $P < 0,05$ is hypothesis is received.

Table 3. Result Spearment Test

Categorical	P
Duration of Use Mobile Phones & Nordic Body MAP	0,000

In table can have result $p < 0,05$ is can correlation signifiante duration of mobile phones with musculoskeletal problem in students of UPN Veteran Jakarta during Covid -19.

4. DISCUSSION

This study shows that prolonged use of cell phones causes problem musculoskeletal. This can be seen from the results of the bivariate test with a P value of 0.000 where $p < 0.005$ has a significant relationship. This figure corresponds to the prevalence of 20-35 years old, 98.2 percent of whom use smart phones an average of 7 hours a day. In fact, 79 percent immediately check their smart phones 1 minute after waking up [5]. Thus, resulting in excessive muscle stretching, repetitive activities, unnatural work attitudes, secondary causes and combined causes [4].

5. CONCLUSION

Based on the results of research that has been done it can be concluded that:

1. Have correlation signifiante duration of mobile phones with musculoskeletal problem in students of UPN Veteran Jakarta during Covid -19.

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