# THE DURATION OF GADGET USE WITH DISABILITY LEVEL IN TEXT NECK SYNDROME ON WIDYA MANDALA CATHOLIC UNIVERSITY STUDENTS SURABAYA

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https://doi.org/10.33508/jwmj.v5i4.4966

## ABSTRACT

**Introduction:** Technological advances in the telecommunications sector are experiencing rapid development. This lead to increasing gadget usage, which can cause neck pain, known as text neck.
**Purpose:** To determine the relationship between the duration of gadget use and the level of disabilities in text neck syndrome among students of UKWMS.
**Method:** This research used a cross-sectional design with a non-probability sampling technique, held from July 20-August 23, 2022, via questionnaire. The population of this study was UKWMS students, with a total sample of 203 subjects. The subjects entered into five groups namely group A (1-<2 hours), B (2-<3 hours), C (3-<4 hours), D (4-<5 hours), and E (≥ 5 hours). Then, it split using the NDI into without text neck, mild, moderate, severe, and complete disability.
**Result:** In group A, without text neck five subjects. In group B, 23 subjects without text neck, and six with mild. In group C, there were 23 people without text necks, eight people with mild, and one subject with moderate. In group D, there were 22 people without text necks, 14 people with mild, and one with severe. In group E, there were 82 people without text necks, 17 people with mild, and one with severe. There were no complete disabilities in this study. Data were analyzed using the Spearman correlation test, which yielded p=0.396 (p>0.05).
**Conclusion:** There's no relationship between the duration of gadget use and the level of disability in text neck syndrome in UKWMS students.

**Keyword:** Text Neck Syndrome, Duration of Gadget Use, Level of Disabilities

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## INTRODUCTION

Technological advances in the telecommunications sector in Indonesia are experiencing rapid development. Based on data from We Are Social and Hootsuite, Indonesia is known to have around 177.9 million smartphone users and 132.7 million internet users in 2018[1]. In 2021, it is recorded that Indonesia has 343.3 million smartphone users and 202.6 million internet users in Indonesia, and 170 million active social media users[2]. Based on data from We Are Social and Kepios, Indonesia is known to have 370.1 million smartphone users and 204.7 million internet users in 2022[3]. Based on data from 2018, 2021, and 2022, we can see that smartphone and internet users have shown a significant increase in Indonesia.

The gadget is an English term for a small electronic device with a specific function. Gadget function to present the latest technology to make human life more practical. Gadgets come in many variations such as smartphones, androids, tablets, computers, and laptops. This gadget can provide positive and negative impacts for each user. Gadgets usage can easily access various information, speed up the dissemination of information, make it easier to communicate with others, and make it easier to complete tasks or work[4]. However, excessive use of gadgets can have negative impacts such as lack of socializing, loss of concentration, sleep disturbances, and forgetting the time every time you use them, which can lead to addiction[5]. In addition, excessive use of gadgets can cause a problem in the body's health, one of which is musculoskeletal complaints[6]. Musculoskeletal problems include discomfort and pain in various parts of the body, such as the neck, shoulders, elbows, wrists, hands, and thumbs[7].

Text neck syndrome is neck pain caused by repetitive or excessive stress injuries. Text neck syndrome is due to neck flexion that occurs when bending the neck for a long time while looking at digital devices such as smartphones, tablets, and laptops[8]. Based on research conducted by Sathya P. (2020) noted that out of 100 people, the prevalence of text neck syndrome was 32%, and the most affected age group was 22 years[9]. Based on research conducted by Kholoud T. A. (2021) noted that from 428 people, the prevalence of text neck syndrome was 68.1%. It is known from these data that 49.5% have mild disabilities, 16.1% have moderate disabilities, and 2.6% have severe disabilities[8].

Symptoms of text neck syndrome include neck stiffness when using gadgets for a long time. The nature of the pain is a sharp pain that is localized, often found in the lower neck, and feels like a stab or sting, generally in the neck area of the trapezius muscle. Symptoms can also include pain that radiates from the neck to the shoulder of the arm, weakness, and numbness in the shoulder muscles, especially the trapezius, scalenus, rhomboids, and sternocleidomastoid muscles. Headaches caused by neck disorders, such as neck muscle tension (tension headaches), can affect the nerves and muscles. If this condition is left untreated, it can cause serious permanent damage[10]. In addition, inappropriate head and neck posture is associated with chronic musculoskeletal pain[11].

## METHOD

### Research Design

This research is an analytic observational, using a cross-sectional data collection method through a questionnaire.

In this study, the gadget use duration group divide into 5, namely A (1-<2 hours), B (2-<3 hours), C (3-<4 hours), D (4-<5 hours), and E (≥ 5 hours). This group split through questionnaires distributed to respondents.

In this study, the level of disability in text neck syndrome measures through the Neck Disability Index (NDI) questionnaire. Then the questionnaire will be divided into five groups, namely, no text neck syndrome (NDI score 0-4), text neck syndrome with mild disability (score 5-14), with moderate

disability (score 15-24), with severe disability (25-34), and with total disability (> 35).

**Statistical Analysis**

This study uses the Spearman correlation test with a significance value of p <0.05**.**

**Ethical Clearance**

This research approves by the Ethics Committee for Health Research, Faculty of Medicine, Widya Mandala Catholic University, Surabaya No. Ref: 0242/WM12/KEPK/MHS/T/2022.

## RESULTS

This study noted that in group A, there were without text neck syndrome five people. In group B, there were 23 people without text neck syndrome and six subjects with mild disabilities. In group C, there were 23 people without text neck syndrome, eight people with mild disabilities, and a person with moderate disabilities. In group D, there were 22 people without text neck syndrome, 14 people with mild disabilities, and a person with severe disabilities. In group E, there were 82 people without text neck syndrome, followed by 17 people with mild disabilities and a person with severe disabilities. In this study, there was no complete disability found. In the Spearman correlation test, the data on the duration of gadget use and the level of disability in text neck syndrome obtained insignificant results (p> 0.05). Based on the results of the Spearman correlation test, it concludes there is no relationship between the duration of gadget use and the level of disability in text neck syndrome among students at Widya Mandala Catholic University, Surabaya.

## DISCUSSION

Text neck syndrome describes a repetitive stress injury and pain due to prolonged use of gadgets. Text neck syndrome can cause neck muscle tension due to a tilted head from a forward-facing head position. In this position, the muscles in the upper back are constantly overloading against the gravity of the front of the head. This position often accompanies by rounded front shoulders and upper back. This lead to shoulder pain and neck problems. The longer the time spent with the head down, the more likely a person is to develop neck or shoulder problems[10]. Using gadgets for a long time can cause musculoskeletal disorders, like muscle pain[12].

In this study, there was no significant relationship between the duration of gadget use and the level of disability in text neck syndrome. The Spearman correlation test obtained a p-value> 0.05, which indicated no significant relationship between the duration of gadget use and the level of disability in text neck syndrome in Widya Mandala Catholic University students in Surabaya.

In this study, there were confounding variables such as illumination, device use position (neck angle and ergonomics), and heating or stretching before gadget use that the researchers did not assess, so the results were not considered significant. This is supported by research conducted by Nurhikmah (2021), that this study did not evaluate the position of gadget use, so the results of this study were not significantly assumed based on the position of gadget use[13]. Zaheen A. I.'s research (2020) shows that specific exercises on the deep cervical flexors (pressure biofeedback) in teachers with neck pain can reduce pain and disability and increase muscle endurance[14]. In addition, in this study, it was estimated that the results were not significantly influenced by other factors such as the self-administered questionnaire method and the insufficient number of research samples. This study is supported by research by Asad Ali C. (2019) regarding how to reduce research bias by filling out a questionnaire on the spot[15,16,17]. Another research by Kholoud T. (2021) noted that the minimum sample size required in this study is 370 people.[8]

## CONCLUSIONS

There's no relationship between the duration of gadget use and the level of disability in text neck syndrome in UKWMS students (p > 0,05).

## ACKNOWLEDGEMENT

Thank you address to dr. Nunung Nugroho, Sp. KFR. and Dr. Dr. Titiek Ernawati, Sp. M. for the allotted discussion time.

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