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The impact of final exams on student stress levels and sleep quality

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Abstract

Background: Scientific papers (STPs) are written presentations of case studies that discuss a problem in a specific scientific field using the principles applicable to the field. Obstacles in the process of writing scientific papers make students susceptible to stress, which impacts their sleep quality. Poor sleep quality can lead to students being unable to focus, becoming distracted, and increasing negative thoughts.

Purpose: To determine the relationship between stress levels and sleep quality among final-year nursing students preparing STPs at Poltekkes Karya Husada Yogyakarta in 2025.

Method: This study used a descriptive correlational design with a cross-sectional study design. A sample of 96 students was drawn using simple random sampling. The research instruments used a stress level questionnaire and the Pittsburgh Sleep Quality Index (PSQI) questionnaire. The results were analyzed using a gamma test.

Results: 43 students (44.8%) experienced moderate stress and 30 students (31.3%) experienced mild stress. Sleep quality: 78 respondents (81.3%) reported poor sleep quality, while 18 respondents (18.8%) reported good sleep quality. The Gamma test yielded a p-value of $0.001 < 0.005$, with a correlation coefficient of 0.441.

Conclusion: There is a significant relationship between stress levels and sleep quality in final-year nursing students.

Keywords: Stress; Sleep Quality; Students.

INTRODUCTION

Scientific works are writings or essays that are obtained in accordance with their scientific nature and are based on various observations, research, and reviews of certain fields of science, which are compiled using certain methods by paying attention to good and polite writing systematics, and can be accounted for scientifically (Kaur, 2018). Scientific Writing (KTI) is a case study writing that discusses a problem in a particular field of science using the rules that apply in the field of science concerned. This scientific paper is made based on case study reporting that has been managed by students in a planned, directed and systematic manner that seeks to obtain data and information about a problem in a particular field of science using scientific methods (Hasanah, Megawati, Shofiyah, Jannah, & Rindiani, 2020). Many

lessons and experiences are gained when students are in college such as organizing, completing individual and even group assignments given by lecturers in each different course (Astuti, 2017). Many students complain about the assignments given and the difficulty in doing them. Final semester students will tend to be heavier with the task load experienced than the task load of early semester students. Students who work on scientific papers are likely to make students vulnerable to stress, stress in working on scientific papers makes students faced with physical, emotional, intellectual and interpersonal constraints (Sugiarti, Utami, Ikhlas, Mahendika, Vanchapo, & Muis, 2024).

Stress is a bodily reaction that arises due to a mismatch between the demands received and the

ability to cope so that a person will feel a threat and pressure due to something. Stress can be felt by everyone from children to the elderly if they feel pressure and burden of unnatural intensity. Stress can cause physical, emotional, intellectual, social and spiritual disorders. One of the physical disorders caused by stress is sleep quality. Stress and sleep have a close relationship, poor sleep quality can be associated with mental health such as stress (Permatasari, 2020). Stress affects sleep quality through several mechanisms, namely through an increase in the hormones epinephrine, cortisol, and norepinephrine which stimulate sympathetic nerve activity, so that it can cause sleep disturbances in a person. Psychological mechanisms can also make it difficult for someone to start or maintain sleep (Purba, Sinolungan, & David, 2025). Stress is inevitable from a person's life, stress can occur in everyone including adolescents. Stress in adolescents occurs in both developed and developing countries where the prevalence of stress that occurs in adolescents in the world has a range ranging from 5%-70%, Health Research on the prevalence of stress events in adolescents is increasing from year to year, in 2013 it was 6.0% and in 2018 9.8% of adolescents in Indonesia experienced mental emotional disorders in the form of stress, anxiety, and depression (Permatasari, Suwarni, & Sutrisno, 2023).

Sleep is not just a mere "time out" from the daily routine, sleep is essential for health, emotional functioning, mental health and safety. Sleep is a physiological process that is very important for humans and has a major impact on mental and physical health, especially for students who are studying. Sleep quality is considered good if it does not show signs of sleep deprivation and does not have sleep problems. The normal sleep schedule for young adults is about 7-8 hours a day. At that age a person or several will experience a decrease in NREM (*nonrapid eye movement*) stage IV (Alfi & Yuliwar, 2018). Sleep pattern disorders worldwide is around 86%, the prevalence in Indonesia for sleep disorders is estimated at 10%. There are several factors that can affect sleep patterns including gender, age, marital status, income level and education level, decreased sleep quality or the occurrence of sleep

pattern disorders can be caused by activity in the sympathetic nervous system due to increased epinephrine hormones, cortisol hormones and norepinephrine hormones caused by increased stress (Cunha, Zulkarnain, & Hidayathillah, 2023).

In recent years, the relationship between stress levels and sleep disturbances in college students has been studied. Of the 18 respondents, 12 respondents (66.7%) experienced moderate stress levels and as many as 5 respondents (27.8%) experienced poor sleep quality (Zurrahmi, Hardianti, & Syahasti, 2021). The statistical test results show that there is a significant relationship between stress levels and sleep quality in final year students with a p value = 0.0003. From 80 respondents who experienced severe stress as many as 57 respondents (71.25%) and experienced poor sleep quality as many as 59 respondents (73.75), with the results of Statistical Analysis using the *Spearman Rank* test known Sig of 0.032 <0.05 (Vlaicu, Beatrice, & Alecu, 2022). Preliminary studies conducted on D3 Nursing Poltekkes Karya Husada Yogyakarta students on November 24, 2024 who were preparing the final project totaling 25 students showed signs of anxiety and anxiety experienced by 6 students, 14 people experienced signs of anxiety such as easy fatigue and difficulty concentrating besides that it was also accompanied by disturbances in sleep quality such as waking up easily at night and often drowsy during the day, while 5 people had no signs of anxiety and disturbed sleep quality.

RESEARCH METHOD

This research was conducted with a quantitative approach, type: descriptive correlation method, *cross-sectional* design. Descriptive research is a research method conducted to make a picture or describe a situation objectively. This research studies the relationship between stress levels and sleep quality in nursing students who are compiling scientific papers, the research was conducted at the Poltekkes Karya Husada Yogyakarta campus on April 20 - May 05, 2025, Population is the entire research subject to be studied. The number of samples in this study were 96 D3 Nursing students who were working on KTI at Poltekkes Karya Husada Yogyakarta.

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RESEARCH RESULTS

Table Frequency Distribution of Characteristics (n=96)

Variable	Results	R	P-Value
Age (Mean±SD)(Range)(Year)(n/%)	(21.1±1.7)(19-30)		
<21 years old	63/65.6		
22-24 Years	31/32.3		
≥25 Years	2/2.1		
Gender (n/%)			
Male	6/6.2		
Female	90/93.8		
Stress level (n/%)			
Normal	16/16.7		
Mild	30/31.3		
Moderate	43/44.8	0.485	0.012
Severe	7/7.3		
Sleep Quality (n/%)			
Good	18/18.8		
Poor	78/81.3		

Based on the table above, respondents are divided into two categories, namely men and women, it can be concluded that out of a total of 96 respondents, the majority of respondents are women with 90 respondents (93.8%). Meanwhile, based on the age distribution table of a total of 96 respondents, most of the respondents were in the age group under the age of 21 with a proportion of 65.6%, followed by the age group 22 - 23 years which had a percentage of 32.3%. Based on the table above, it shows that respondents who have moderate stress levels are 43 respondents with a percentage of 44.8%, followed by mild stress levels 30 respondents with a percentage of 31.3%. From the results of this study, it was found that the highest frequency of stress levels was respondents with moderate stress levels with a total percentage of 44.8%, this was because respondents considered the thesis as a threat that was still reasonable so that the majority of respondents could still master the stressors faced during the preparation of scientific papers. Table data shows that 78 respondents with a proportion of 81.3% stated that they had poor sleep quality and 18 respondents with a proportion of 18.8% had good sleep quality. So that

from the results of this study the majority of respondents have poor sleep quality with a proportion of 81.3%, this is due to the habit of students who often stay up late to do college assignments, besides activities that make students experience physical fatigue, causing students' sleep quality to be disturbed.

The table above shows that respondents who did not experience stress (normal) had good sleep quality as many as 5 respondents (5.2%) and respondents who were not stressed had poor sleep quality as many as 11 respondents (11.5%). Respondents who experienced mild stress with good sleep quality were 8 respondents (8.3%) and those who had mild stress levels with poor sleep quality were 22 respondents (22.9%). Moderate stress levels with good sleep quality were 5 respondents (5.2%) and for moderate stress levels with poor sleep quality were 38 respondents (39.6%). Respondents with severe stress levels with poor sleep quality were 7 respondents (7.3%). The results of the Gamma test that have been carried out, obtained the results of the *Approximate Significance* value (*P-Value*) of 0.012, the value is smaller than 0.05 (0.012 < 0.05). This means

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that there is a significant relationship between stress levels and sleep quality, while for the correlation value obtained 0.485 it can be interpreted that the strength of the correlation between stress levels and sleep quality in this study shows a moderate or sufficient correlation, and shows a positive correlation direction, which can be interpreted the higher the level of individual stress, the worse the quality of sleep.

DISCUSSION

The results showed that 90 respondents were female, it can be concluded that out of a total of 96 respondents, the majority of respondents were female with a proportion of 93.8. With the results of this study indicate that the majority of samples are female respondents. This is because the distribution of the number of nursing students who are female is greater than men. More women entered the nursing college of the medical faculty compared to men, totaling 56 students (87.5) (Umbroh, Kepel, & Hamel, 2017). Nursing is part of a health care system that deals with humans, and provides comprehensive services to all aspects of life, namely bio-psycho-social and spiritual. The philosophy of nursing is humanism, holism and prioritizes an attitude of care or concern and compassion for clients (Nasrudin, 2019).

The results showed that the stress level of final year nursing students was 43 respondents with a percentage of 44.8% experiencing moderate stress levels. Stress is a condition of physical and psychological pressure due to demands within the self and the environment, from this statement it means that it can be said that someone experiences stress when experiencing a condition of pressure within themselves due to demands that come from within and the environment (Sutjiato, 2015). Moderate stress lasts longer, can last for several hours or even up to several days. Signs of someone experiencing moderate stress are abdominal pain, muscle tension, feelings of tension, difficulty sleeping and lightness (Ahmad, Anissa, & Triana, 2022). The quality of sleep of final year nursing students in compiling scientific papers, found that 78 respondents (81.3%) had poor sleep quality. Sleep is one of the physiological needs that affects the quality and balance of life. Sleep quality is the ability of each individual to maintain a state of sleep and to obtain normal NREM and REM sleep stages. A person's sleep quality is said to be good if they do not show various signs of sleep

deprivation and do not experience problems in their sleep. Poor sleep quality can be characterized by excessive sleepiness (frequent yawning) and inability to concentrate (Zeek, Savoie, Song, Kennemur, Qian, Jungnickel, & Westrick, 2015). The results in this study are due to students still thinking about problems/KTI before bed so that students find it difficult to start sleeping where students spend an average of 16-30 minutes in bed before finally falling asleep, almost half of the students have sleep disturbances 2 times a week have an average sleep time of 5-6 hours. Most of the S-1 Nursing Professional students at Stikes Ranah Minang Padang 2016 have poor sleep quality, namely 38 students (82.6%) due to students often thinking about problems before going to bed, making it difficult to start their sleep where students spend more than 15 minutes in bed until they can finally sleep and also often wake up at night and because completing the assignment given by the lecturer requires students to finish with the specified time as a result often sleeping late at night so that it makes students change their sleep patterns which are less than 7 hours (Wahyuni, 2018).

The relationship between stress levels and sleep quality shows that there is a relationship between sleep quality and the level of stress experienced by final year students, where an increase in stress levels in a person will cause a decrease in sleep quality. Based on the results of the *Gamma* correlation test research, the *p-value* = 0.012 was obtained, which means that there is a significant relationship between stress levels and the quality of sleep of final year nursing students in compiling scientific papers. The correlation coefficient value of 0.485 which shows the closeness of the relationship between the level of stress and the quality of sleep of final year nursing students is moderate which is located in the correlation coefficient range of 0.40-0.599, The closeness of the moderate relationship between the level of stress and sleep quality is due to not being done further on other factors that affect stress and sleep quality. There is a relationship between stress and sleep quality in S-1 Nursing professional students at Stikes Ranah Minang Padang in 2016 with a *p-value* = 0.001 (Wahyuni, 2018). There is a relationship between stress in preparing a thesis and insomnia in D IV Midwife Educator students with a *p-value* = 0.004 (Olii, Kepel, & Silolonga, 2018). A relationship

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between stress levels and the incidence of insomnia in final year midwifery D IV students in preparing a thesis with a $p\text{-value} = 0.001$ (Oryza & Daryanti, 2016). Based on the results of the study, it can be concluded that the direction of the relationship in this study is positive, namely the lower the level of student stress, the better the quality of student sleep and vice versa. This is because students who are preparing a thesis will experience many obstacles and obstacles that will make stressors so that students experience stress. Students who experience stress will affect the quality of sleep of these students. High levels of stress can cause a negative impact on students' health and sleep quality (Najafi Kalyani, Jamshidi, Salami, & Pourjam, 2017). Students who are too hard in thinking will cause stress, so students will find it difficult to control their emotions which have an impact on increasing tension and difficulty in starting sleep. Feelings of tension in these students can cause students to have difficulty sleeping or often wake up during sleep, so that it will interfere with students to get the quality of sleep or sleep needs as desired. Poor sleep quality can have an impact on poor academic and cognitive, physical, psychological health of students and students' quality of life (Kaur, 2018).

CONCLUSION

Most students who are completing scientific papers experience moderate levels of stress. Most students who are working on scientific papers have poor sleep quality. There is a relationship between stress and sleep quality in final year students who are compiling scientific papers, with a positive relationship and a moderate level of closeness.

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