



The Relationship between Sleep Quality and the Incidence of Gastroesophageal Reflux Disease (GERD): A Study on Clinical Clerkship Students, Faculty of Medicine, Universitas Prima Indonesia

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ABSTRACT

Gastroesophageal reflux disease (GERD) is defined as a gastrointestinal motility disorder caused by the reflux of gastric contents into the esophagus or oral cavity. This results in symptoms or complications if persistent, resulting in a significant reduction in quality of life and morbidity. Several studies have reported an association between nocturnal GERD and sleep disturbances, which can significantly affect the quality of life. This study explores the relationship between sleep quality and the incidence of GERD in clinical clerkship students at the Faculty of Medicine, Universitas Prima Indonesia. This study is a cross-sectional observational study involving 144 clinical clerkship students. The GERDQ was used to diagnose GERD, and the PSQI questionnaire was used to measure sleep quality. Respondents who did not suffer from GERD with good sleep quality were 32 respondents (22.2%). Those who did not suffer from GERD with poor sleep quality were 65 respondents (74.8%), who suffered from GERD with good sleep quality only 1 respondent (10, 8), and 46 respondents (36.2%). There is a significant relationship between sleep quality and GERD in clinical clerkship students at the Faculty of Medicine, Universitas Prima Indonesia.

1. Introduction

Gastroesophageal reflux disease (GERD) is defined as a gastrointestinal motility disorder caused by the reflux of gastric contents into the esophagus or oral cavity. This results in symptoms or complications if persistent, resulting in a significant reduction in quality of life and morbidity. Several studies have reported an association between nocturnal GERD and sleep disturbances, which can significantly affect the quality of life. According to a survey, patients with symptoms of GERD have shorter sleep periods than those without symptoms, where GERD is also often associated with insomnia.¹⁻³

Sleep disturbances are common in the general population. One study showed that about half of study participants reported unrefreshing sleep several nights per week or more, with 42% reporting frequent awakenings during the night and 26% reporting difficulty falling asleep.^{4,5} Epidemiological studies in Japan have shown that the prevalence of sleep disorders is around 17.3-22.3% for males and 20.5-21.5% for females.^{6,7} Another study conducted in the UK showed that there was a clear association between sleep disturbances and smoking, excessive alcohol consumption, psychiatric disorders (stress and

depression), cardiovascular disease (heart), and coronary heart disease) and gastrointestinal diseases, including GERD and irritable bowel syndrome.⁸⁻¹⁰

Clinical clerkship students of the Faculty of Medicine, Universitas Prima Indonesia, are individuals with very high educational activities. Every day clinical clerkship students must participate in clinical clerkship activities at the hospital. In fact, after participating in activities from morning to evening, clinical clerkship students still have to take part in night watch activities at the hospital. Of course, this causes irregularity in the rhythm and quality of sleep for clinical clerks. This decrease in sleep quality causes a decrease in the quality and physical performance of clinical clerkship students. The potential for experiencing GERD is also believed to be quite high in clinical clerkship students due to poor sleep rhythms and irregular eating schedules. This study aims to explore the relationship between sleep quality and the incidence of GERD in clinical clerkship students at the Faculty of Medicine, Universitas Prima Indonesia.

2. Methods

This study is an analytic observational study with a cross-sectional approach. The research subjects were 144 clinical clerkship students at the Faculty of Medicine, Universitas Prima Indonesia. This study has been approved by the Medical and Health Research Ethics Committee, Faculty of Medicine, Universitas Prima

Indonesia, Number: 032/SK/UNPRI/III/2022.

This study used a gastroesophageal reflux disease questionnaire (GERDQ) and a Pittsburgh sleep quality index (PSQI) questionnaire. The GERDQ was used to diagnose GERD, and the PSQI questionnaire was used to measure sleep quality. The GERDQ consists of 6 question items. The PSQI consists of 7 assessment components, which consist of subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication (use of sleeping medication), and daytime dysfunction. The data source of this study was taken from primary data, which was obtained directly by the researcher using a questionnaire conducted through Google Forms on the research sample.

The analysis used in this research is univariate and bivariate analysis. The univariate analysis aims to explain the characteristics of each variable and produce the distribution and percentage of variables. The characteristics of respondents in this study are age and gender. Bivariate analysis, which aims to determine whether there is a significant relationship between the two variables, was tested using the Chi-Square with an error rate of 5% ($p < 0.05$).

3. Results and Discussion

The female gender has a higher number of 98 respondents (68.1%), compared to males with 46 respondents (31.9%), and the age of most respondents is 22 years old, with a total of 63 respondents (43.8%). Table 1.

Table 1. Distribution of respondents' characteristics.

Demographic characteristics	N	Percentage (%)
Gender		
Male	46	31.9
Female	98	68.1
Age		
21	31	21.5
22	63	43.8
23	40	27.8
24	9	6,3
25	1	0.7
Total	144	100

Table 2. Distribution of GERD diagnosis.

GERD diagnosis	N	Percentage (%)
Not suffering from GERD	97	67.4
Suffering from GERD	47	32.6
Total	144	100

Based on table 2 about the diagnosis of GERD shows that the distribution of respondents who suffer from GERD is 47 respondents (32.6%), while

respondents who do not suffer from GERD are 97 respondents (67.4%).

Table 3. Distribution of sleep quality.

Sleep quality	N	Percentage (%)
Good	33	22,9
Bad	111	77.1
Total	144	100

Based on table 3, regarding sleep quality, shows that the distribution of poor sleep quality is higher

with a total of 111 respondents (77.1 %), compared with good sleep quality 33 respondents (22.9%).

Table 4. Bivariate analysis of GERD on sleep quality.

		Sleep quality				Total		p-value*
		Good		Bad		N	%	
		N	%	N	%			
GERD Diagnosis	Not suffering from GERD	32	22.2	65	74.8	97	97.0	0.000
	Suffering from GERD	1	10.8	46	36.2	47	47.0	
	Total	33	33.0	111	111.0	144	144.0	

*Chi-square, p<0,05

Based on Table 4 shows that respondents do not suffer from GERD with good sleep quality, as many as 32 respondents (22.2%) do not suffer from GERD with poor sleep quality, as many as 65 respondents (74.8%) who suffered from GERD with good sleep quality, only 1 respondent (10.8), and who suffered from GERD with poor sleep quality were 46 respondents (36.2%). There is a significant relationship between sleep quality and GERD in clinical clerkship students at the Faculty of Medicine, Universitas Prima Indonesia.

The results of this study indicate that the prevalence of GERD in clinical clerkship students is 32.6%. This prevalence rate is not much different from the results of other studies on medical students, which showed a prevalence of 31.8% of 365 respondents who were diagnosed based on the Gastroesophageal Reflux

Disease Questionnaire (GERDQ) score.¹¹⁻¹³ Another study among medical students using the Frequency Scale for the Symptoms of GERD (FSSG) questionnaire found that the prevalence of GERD was 25% out of 500 respondents.¹⁴⁻¹⁶ Sleep quality with GERD is associated with the presence of acid regurgitation as an independent factor in the occurrence of sleep disturbances. There is a reciprocal relationship between these two conditions. Stress conditions can cause poor sleep quality, and GERD worsens sleep quality. In addition, poor sleep habits such as sleeping late, daytime sleepiness, and waking up late in the morning can cause changes in the timing of food intake and consumption of fast food, which can worsen GERD.¹⁷

4. Conclusion

There is a relationship between sleep quality and the incidence of gastroesophageal reflux disease (GERD) in clinical clerkship students at the Faculty of Medicine, Universitas Prima Indonesia.

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