



The Relation Between Asthma Control and Sleep Quality in Asthmatics at Community Health Centre of Kongbeng Kutai Timur

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Abstract. Asthma is a disease that cannot be eliminated entirely in sufferers but can be controlled with proper management. Patients need enough sleep because many diseases require rest and sleep, but the condition of the disease also makes sufferers unable to sleep. This study aims to determine the relationship between asthma control and sleep quality in asthma patients at the Community Health Centre of Kongbeng Kutai Timur. This study used a type of quantitative research using a cross-sectional design. Total sampling obtained 35 samples and data were analyzed using the Chi-Square test. The results showed that the age of most respondents was female, namely 18 respondents (51.4%), the most respondents' occupations were housewives, namely 21 respondents (60%), the most respondents' education was elementary school, namely 21 respondents (60%), and respondents with economic status were many below the UMR 22 people (62.9%). The results of the analysis showed that there was a relationship between asthma control and sleep quality in asthmatics at the Community Health Centre of Kongbeng Kutai Timur ($p = 0.46$). It is recommended for cross-program officers to improve health services and counseling about asthma and the importance of providing an understanding of asthma control.

Keywords: Asthma, Control, Sleep Quality.

1 Introduction

Asthma is a chronic respiratory disease characterized by recurrent wheezing, shortness of breath, chest pressure, and coughing, especially at night or early in the morning. Asthma symptoms that often appear can reduce sleep quality. Asthma control is defined as a condition where you have few or no symptoms, no use of lozenges, waking up during the night, almost normal lung function, no exacerbations, no side effects from treatment, and no emergency visits [1] [2].

Asthma is a disease that cannot be completely eliminated from sufferers but can be controlled with proper management so that asthma symptoms and attacks can be controlled [3]. To be able to achieve the criteria for expected results, the management of

asthma must be carried out in an integrated manner that includes all elements, including patient education, parents and caregivers, identification and prevention of trigger factors, and the use of drugs properly, correctly, and regularly to control health services regularly [4] [5]. Asthma in children and adolescents gets better, and the severity of asthma becomes lower when asthma is well controlled.

The prevalence of asthma in the world is estimated to be around 7.2% i.e. 6% occurs in adults and 10% in children [10]. The incidence of asthma in developed countries, namely the United States by age of 7.4% occurs in adults and 8.6% in children which increases annually, based on sex 6.3% in men and 9.0% in women while race 7.6% in white and 9.9% in black [11].

Indonesia is the thirteenth-ranked country in the world and fifth in Asia, with a fairly high percentage of asthmatic deaths. The incidence of asthma in Indonesia at all ages is 4.5%, which is quite high compared to other respiratory diseases (as much as 3.7%) and lung cancer (as much as 1.4%). The number of asthmatics in Indonesia based on gender, namely in men and in women, reached 505,409 people. Asthma data in South Sulawesi province is 2400 cases after Central Java and West Java [12].

In patients with uncontrolled asthma, 48.1% had severe persistent asthma, 22.2% had moderate persistent asthma, 18.5% had mild persistent asthma, and 11.1% had intermittent asthma. These results concluded that there was an association between the level of asthma control and the severity of asthma [13]. It also conducted studies related to the level of asthma control associated with children's sleep quality. The results explained that children experience poor nighttime sleep quality due to uncontrolled asthma status; they will then experience excessive daytime sleepiness. Poor sleep and excessive daytime sleepiness will affect their daily functional and social status.

Asthma is a disease that cannot be eliminated entirely in sufferers but can be controlled with proper management. Patients need enough sleep because many diseases require rest and sleep, but the condition of the disease also makes sufferers unable to sleep. The Community Health Centre of Kongbeng Kutai Timur is located in East Kutai Regency and has a complete address at Jalan Poros Ma Wahau Berau, Kongbeng District, East Kutai Regency, East Kalimantan, with the vision and mission are: 1) Increase the quantity and quality of human resources in the health sector as well as quality health facilities and infrastructure; 2) Realize a good, healthy, and comfortable environmental quality for people's lives; 3) Realize professional, credible, and public service-oriented community health centre governance; 4) Provide quality, equitable, and affordable health services oriented to patient health; 5) Establish cooperation with the linear sector related to regional development that is health-minded. This study aims to determine the relationship between asthma control and sleep quality in asthmatic patients at The Community Health Centre of Kongbeng Kutai Timur.

2 Method

This study used a quantitative approach. The time approach used in this study was cross-sectional. The research was conducted at the Community Health Centre of Kongbeng Kutai Timur and was carried out in March–April 2023. The population taken in this study was asthma patients who were at the Community Health Centre of Kongbeng Kutai Timur with a population of 35 patients. Sampling is carried out by the Total Sampling method, which involves the entire population of 35 samples. The types of data sources collected and differentiated in this study are: 1) primary data collected by conducting guided interviews with respondents using a list of questions that have been provided (questionnaires); and 2) secondary data obtained from documents in the treatment room or on medical records.

Data analysis using the SPSS program in univariate analysis of research results is described in the form of tables, graphs, and narratives to evaluate the proportion of each variable found in the sample. A bivariate analysis was carried out to answer the research objectives and test the research hypothesis using a chi-square statistical test with a significance level of $\alpha = 0.05$ in the SPSS program. Research ethics aims to protect rights; subjects in all disciplines must be well protected. If the subject is particularly vulnerable (as is the case with samples), the research must explain the rights of subjects such as 1) informed consent, 2) anonymity, and 3) confidentiality.

3 Result and Discussion

Based on the results of research and data processing that have been carried out, this discussion will explain, in accordance with the purpose of the study, namely to "Determine the relationship between asthma control and sleep quality in asthma patients at Community Health Centre of Kongbeng Kutai Timur".

3.1 Univariate Analysis

A description of respondent characteristics consisting of gender, occupation, education, economic status, asthma control, and sleep quality is shown in the following Table 1.

Table 1. Univariate Analysis of Respondents at Community Health Centre of Kongbeng Kutai Timur.

Variable	Total	Percentage (%)
<i>Gender</i>		
Male	17	48.6
Female	18	51.4
<i>Job</i>		
Housewife	21	60
Self-employed	2	5.7
Civil Servants	12	34.4

<i>Education</i>		
Junior High School	21	60
Senior High School	3	8.6
Bachelor	12	31.4
<i>Economic Status</i>		
Under The Minimum Wage	22	62.9
Minimum Wage	13	37.1
<i>Asthma Control</i>		
Good	22	62.9
Bad	13	37.1
<i>Sleep Quality</i>		
Good	21	60
Bad	14	40

Based on Table 1 of 35 respondents, shows that the gender distribution of respondents is female at 18 respondents (51.4%) and male at least 17 respondents (48.6%). In respondents' jobs, the most were housewives, namely 21 respondents (60%), and the least self-employed, namely 2 people (5.7%). In education, the respondents in elementary and junior high school education were 21 respondents (60%), and at least in high school, there were as many as 3 people (8.6%). In terms of economic status, the most respondents under UMR were 22 people (62.9%), and at least UMR had as many as 13 people (37.1%). In asthma control, the respondents were in the good category, as many as 22 people (62.9%), and the least in the bad category, as many as 13 people (37.1%). In sleep quality, respondents were in the good category, as many as 21 people (60%), and at least in the bad category, as many as 14 people (40%).

3.2 Bivariate Analysis

The relationship between asthma control and sleep quality in asthmatics at Community Health Centre of Kongbeng Kutai Timur is shown in Table 2.

Table 2. Bivariate Analysis of Respondents at Community Health Centre of Kongbeng Kutai Timur

Asthma Control	Sleep Quality		Total	P Value
	Good	Bad		
Good	13	9	22	0.46
Bad	8	5	13	
Total	21	14	35	

Based on Table 2, the results of the chi-square test showed that the significant value is $0.46 < 0.05$ ($P < 0.05$), and it can be concluded that there is a relationship between asthma control and sleep quality in asthmatics at the Community Health Centre of Kongbeng Kutai Timur.

Asthma Control. Based on the results of descriptive tests, it showed that of the 35 respondents at the Community Health Centre of Kongbeng Kutai Timur, good asthma control was more dominant, as many as 22 (62.9%), and for respondents with poor asthma control, as many as 13 (37.1%).

From the results of the study, it was found that the mothers of Integrated Healthcare Center cadres at the Community Health Centre of Kongbeng Kutai Timur were more dominant with good asthma control compared to bad asthma control. The relationship between the level of asthma control and sleep quality in asthmatics is very related, where uncontrolled asthma will make sleep quality worse, and if asthma control is good, the quality of sleep in asthmatics is good. In other studies, uncontrolled asthma was most commonly found in study subjects with an overweight or obese BMI and looked at patient compliance with therapy. Due to good therapy, asthma patients are able to reset abnormal breathing rhythms [14] - [17].

Asthma Control. Based on the results of the descriptive tests, it showed that of the 35 respondents at the Community Health Centre of Kongbeng Kutai Timur, good sleep quality was more dominant, as many as 21 (57.1%), and for respondents with poor sleep quality, as many as 14 (42.9%). From the results of the study, it was found that sleep quality in asthmatics at the Community Health Centre of Kongbeng Kutai Timur was more dominant, with good sleep quality compared to poor sleep quality. People with asthma are at risk of experiencing poor sleep quality. The incidence of poor sleep quality in people with asthma is associated with poor levels of asthma control. Poor sleep quality can cause disruptions in carrying out daily activities, resulting in a decrease in the quality of life for people with asthma. Sleep quality has a relationship with work fatigue, emotional stress, sports activities, short sleep duration, and sleep disorders. Combining spirituality, psychological energy, and energy in the body is quite effective in neutralizing negative emotions so that sleep quality is good [18] - [22].

Based on the results of the Chi-square test, which showed a sig value of $0.46 < 0.05$ ($p < 0.05$), it can be concluded that there is a relationship between asthma control and sleep quality in asthmatics at the Community Health Centre of Kongbeng Kutai Timur. According to the results of the research that has been done, the better the level of asthma control, the better the quality of sleep in asthmatics, and if the level of asthma control is poor, then the quality of sleep in asthmatics is bad too. There is a relationship between the level of anxiety and sleep quality, and anxiety related to sleep quality in asthmatics can cause psychological symptoms such as difficulty concentrating, feeling tense, restlessness, and being irritable. Anxiety states affect sleep quality, which is an aspect of a person's psychological state [23] - [25].

Asthma is an obstruction in the airway caused by several factors. One of the trigger factors for asthma is sleep quality. Poor sleep quality is when a person has difficulty starting and maintaining sleep. This is in line with research [26], which is the result of a study that showed 42 people who were respondents were taken using consecutive sampling techniques. A significant association was found between asthma control levels and sleep quality

4 Conclusion

Based on the results of this study, it was found that there was a relationship between asthma control and sleep quality in asthma sufferers at the Community Health Centre of Kongbeng Kutai Timur. It is recommended for cross-program officers to improve health services and counseling about asthma and the importance of providing an understanding of asthma control. It is hoped that the results of this study can be used as material for further research related to factors that control asthma.

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