Anxiety and Sleep Quality among Medical Workers in Harjono S Hospital

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ABSTRACT

Anxiety rate is widely increased and has become the most common symptom experienced by medical staff during the COVID-19 pandemic since the end of 2019. Recent data referred that more than 50% of medical staff experience moderate to high levels of anxiety. Sleep quality is variable that is highly associated with the human physical condition including anxiety. A person with good sleep quality is less likely to feel stressed, anxious, depressed, or experience physical fatigue. This study aims to determine the anxiety level among medical staff based on their sleep quality.

Forty-eight (48) medical staff were involved as respondents in this study which was taken randomly using a simple random sampling method. The independent variable is the sleep quality index (SQI), which is measured using the Pittsburg Sleep Quality Index (PSQI) instrument. While the dependent variable is the depression score which is measured using the Zung Self-rating Scale (SAS) instrument. Comparative analysis was used to compare anxiety scores within 2 groups based on SQI categories using an independent t-test test using 95% of Confidence Interval (CI).

Comparison test between 2 groups of sleep quality shows a significant difference (p-value/sig. 0.20) with a mean difference of 5,78. Based on the maximum score of anxiety, it can be concluded that HCW with good sleep quality has a 7.35 % lower level of anxiety compared to those who had worse sleep quality.

Keywords: *anxiety, sleep quality, health car workers*.

INTRODUCTION

The COVID-19 pandemic has widely increased workload for Health Care Workers (HCW) (1)which could causing impact on the quality of services and productivity(2). This situation will affecting not only the physical but also the mental health of HCWs(3). According to Labrague (2021)(4) anxiety is the most common symptom experienced by medical taff during the COVID-19 pandemic since the end of 2019. Recent data referred that more than 50% of medical taff experience moderate to high levels of anxiety. The rate were significantly higher than those observed in the general population(5–7).

While a low level of anxiety is benefical to motivate,maintain self-defense and improved safety behavior, higher level of anxiety may have negative consequences on themental-psychological health and work performance among workers. Several studies have found that the negative effects of a higher level of anxiety, including neural disorders,dizziness, sleep disturbance, vomiting and nausea(8,9).Extreme level of anxiety levels were also associated with impaired body function, negative coping mechanisms (such as increased intake of alcohol or drugs) stress, depressionand increased burnout risk even suicidal ideation (10–12).

Factors related to the pandemic that are often associated with the physical problems of medical staff are intensive patient care, high patient mortality, high workload, role conflict and lack of time available to meet patient needs, etc.(4,13). Issues such as social stigmatization, shortage of personal protection equipment supplies, and heavy workload on the staff can aggravate this situation.

These condition will lead to serious consequences for both patients and the healthcare professionals(2). Several systematic reviews have found that high levels of burnout in health care professionals are associated with less-safe patient care. These consequences impose immense costs on the society(14,15).

Sleep quality is variable that is highly associated with human physical condition(16). It has been estimated that 90% of patients with depression complain about sleep quality(17). A person with good sleep quality is less likely to feel stressed, anxious, depressed or experience physical fatigue(18–20). For workers, having goodquality of sleep is very important to maintain their physical and psychological condition while working. According to Arifah(21), the sleep quality index affects the level of fatigue experienced by medical taff who work in shifts. According to the study, workers with night shifts can maintain the quality of their sleep to prevent the risk of fatigue that occurs due to shift work. A workers with good sleep quality tends to feel

relaxed and stable so as to minimize the risk of psychological disorders such as stress, depression and anxiety.
Based on M Söderström(22), insufficient sleep can be a used as clinical indicator of burnout. Giorgi's(23)also proves that personal burnout was significantly associated with sleep disturbance among shift-work nurses.
Harjono Hospital is one of the Covid-19 care and isolation center in Ponorogo district. It provides isolation room with a capacity that can accommodate about 35 patients. However, the increasing number of cases caused the number of COVID-19 patients being overloaded. The Emergency Unit is a room for emergency patients entrance which operating 24 hours a day, 7 days a week. Patients received in emergency unit usually had acute cases occur suddenly or by accident without warning and require prompt and appropriate help. Due to the emergency unit operations require high accuracy that highly depends on human resources. High perfomanceof medicaltaff in the emergency unit needed to provide health care services whatever patient's condition is. The risk of receiving patients with COVID-19 infection is high during pandemic.
This study aims to analyze anxiety experienced by Medical taff in the emergency Unit of RSUD dr. Harjono based on the their sleep quality.

METHODS

This study is an analytic observational study using a cross-sectional design. Data were collected in February to March 2021 at Dr. Hospital. Harjono S. Ponorogo. Fourty eight (48) medical taff involved as respondents in this study which taken randomly using simple random sampling method. Before the data collection, respondents were given an explanation and the research procedures and voluntary filled out informed consent form. The collection procedure is described in the following chart:

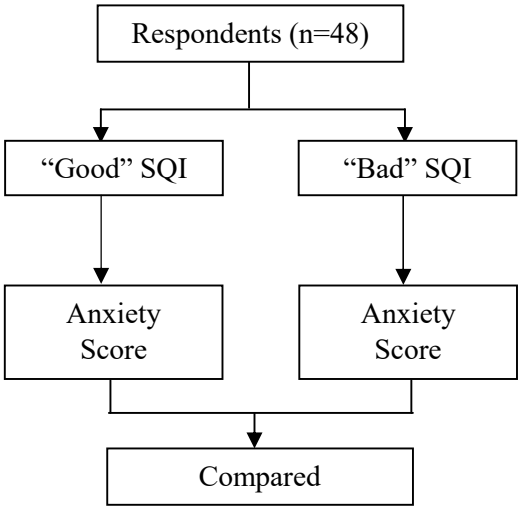


Figure 1. Data collecting and analysis procedure

The independent variable is the sleep quality index (SQI)(24), which is categorized into ; "Good" (score <5) and "Bad" (score >5) based on the score of 7 indicators measured using the Pittsburg Sleep Quality Index (PSQI) instrument. While the dependent variable is the depression score which is measured using the Zung Self-rating Scale (SAS) instrument(25).
Data were both descriptive and analytically analysed. Microsoft Excel and Statistical Package for Social Sciences Software (SPSS) version 24.0 was used in all step of analyses. Comparative analysis will be used to compare anxiety scores within 2 groups based on SQI categories using independent t-test test using 95% of Confidence Interval (CI).

RESULTS

Table 1 described the Sleep experience in the last monthand average depression score among 48 respondents. There are 7 components as indicators for sleep quality which indicates the symptoms experienced by average respondents in percentage. Overall sleep quality classified as “Good” or “Bad” based on the score in the 7 indicators.

Table 1. Respondent Characteristics based on Sleep quality and Anxiety Indicators

Indicators	Percentage
Sleep Quality Indicators	
Subjective Bad Sleep Quality	28,47 %
Sleep Latency*Frequence	29,16 %
Sleep Duration	**34,02 %**
Sleep Efficiency	29,16 %
Sleep Disturbance	17,36 %
Drugs Usage	0,00 %
Day Dysfunction	27,77 %
Anxiety Indicators	
Feel more nervous and anxious than usual	16,67%
Feel afraid for no reason at all	26,39%
Get upset easily or feel panicky	20,83%
Feel like falling apart	**30,56%**
Feel that something bad will happen	**31,94%**
Arms and legs shakedand trembled	19,44%
Bothered by headaches and back pain	**29,17%**
Feel weak and get tired easily	25,00%
Can't feel calm and hard to sit still	27,78%
Feel heart beating fast	19,44%
Bothered by dizzy spells	25,00%
Fainting spells or felt like it	9,72%
Can't breathe in and out easily	6,94%
Get numbness and tingling in the tingers and toes	15,28%
Bothered by stomach aches or indigestion	22,22%
Frequently urinate	19,44%
Hands are usually dry and warm	13,89%
Face gets hot and blushed	16,67%
Can't fall asleep and rest easily	25,00%
Had nightmares	18,06%

Table 1 describes the symptoms experienced by respondents based on indicators to assess sleep quality and anxiety levels on the PSQI and SAS instruments. Sleep problems that are most often experienced by medical personnel are lack of sleep duration (34.02%). A total of 54.17% of respondents with sleep problems stated that their sleep duration was less than 7 hours/day. Based on anxiety symptoms, most or 31.94% of medical personnel felt “Feel that something bad will happen”, “Feel like falling apart” (30.56 %) and “Bothered by headaches and back pain” (29.17 %). In general, the comparison of the Average anxiety score based on sleep quality is described in the table 2.

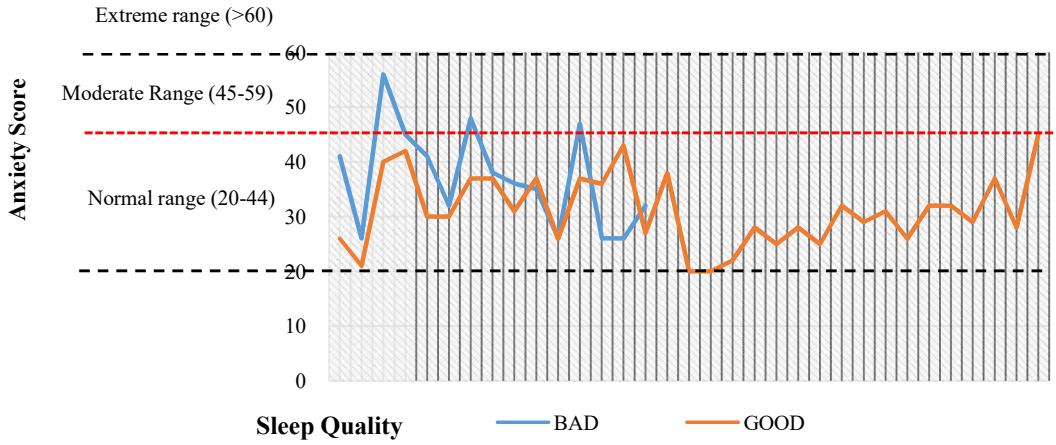
Table 1. Average Anxiety Score based on Sleep Quality

Sleep Quality	N	Percentage	Average Anxiety Score
Good	33	72,9 %	31.12
Bad	15	27,1 %	37.00

∑	48	100 %	32.95

Based on table 2, as many as 27.1% of medical personnel have bad sleep quality and an average anxiety score of 32.95. Medical personnel with bad sleep quality have an average anxiety score of 37.00 or 7.35% smaller than medical personnel with good sleep quality. Figure 1 described the comparison of anxiety score of medical personnel between 2 groups of sleep quality.

Figure 1. Anxiety comparison based on Sleep Quality



In figure 1, the anxiety score level is classified as normal, moderate and extreme based on clinical anxiety range in the SAS instrument. Based on the figure, respondents who are at moderate anxiety level are dominated by medical personnel with bad sleep quality (blue line). Meanwhile, almost all medical personnel who have good sleep quality are in the normal range of anxiety level. Table 3 shows the result of comparison analysis based on paired t-test analysis.

Comparison pair	Levene's Test for Equality of Variances		T-test for Equity of Means	
	F	**Sig.**	**Sig. (2-tailed)**	**Mean Difference**
anxiety of "good" SQ - Anxiety of "bad" SQ	2,391	0,129	**0,020**	5,78788

Comparison test between 2 groups of sleep quality shows a significant difference (p-value/sig. 0.20) with a mean difference of 5,78. Based on the maximum score of anxiety, it can be concluded that HCW with good sleep quality has a 7.35 % lower level of anxiety compared to those who had worse sleep quality..

DISCUSSION

During the pandemic the workload of medical taff in emergency unit had increased(1). They have to deal with the unusual condition which extra effort and energy needed. These condition will potentially increase the mental and physicologicalproblem among medical taff such as anxiety. In this study, the average score of anxiety among HCP in Harjono S Hospital is 32.9 which categorizes into normal range(25). But some medical personnel have a score of more than 45 so they are included in the moderate category on the level of anxiety. Based on data obtained, there are 4 HCP with moderate range of anxiety. Based on the follow-up interview, these anxiety usually caused by the fear of transmitting the disease to their families, the case increased, intensive PPE usage and the more absent number of personnel caused by isolation .

Sleep quality has been widely known to be related to many physical states and physiological functions of humans. Insufficient sleep even become a predictor for clinical burnout (22). Of all the psychiatric disorders associated with insomnia, depression and anxiety is the most common(5).Fredriksen(26) provided longitudinal data to show that sleep loss was a significant predictor of increased depressive feeling and self-esteem. Sleep disturbances encompass various potentially overlapping symptoms and disorders including insomnia, hypersomnia, excessive daytime sleepiness, circadian rhythm disturbance, and extrinsic sleep

disorders (related to insufficient sleep and sleep hygiene). Sleep disturbances, anxiety and depression are common problems that lead to neuropsychological impairment. Neuropsychological evidences suggest that both quality and quantity of sleep are vital to the optimal functioning of brain activity in regulating our emotions (16).Sleep disturbance is diagnostic criteria for depression in the Diagnostic and Statistical Manual of Mental Disorders.Treatment forsleep disorders has been shown to reduce symptoms of depressionandanxiety (27).

The goal of this study is to determine whether improved sleep quality could reduce anxiety among medical taffespecialy in the emergency unit which assumed had more risk to depression and exhaustion. But to get more representative result, avdvanced study with more samples and instrument might be needed.

The Pittsburgh Sleep Quality Index (PSQI) is a self-rated questionnaire which assesses sleep quality and disturbances over a 1-month time interval. Nineteen individual items generate seven "component" scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The instrument however is only evaluating sleep experiences and not as diagnostic instrument.

In this study, sleep quality is categorized to good and bad instead of numerical scale because it would be easier to determine only “good” or “bad” than increased sleep quality. Though it is suggested that in future research the correlational analysis used within a numeric-numeric scale to obtain more representative results.

Theres no intervention in this study.Sleep quality is measured by evaluating respondent experience in sleep in the past month. This quasy method may caused the sample size among 2 groups of sleep quality isn’t equal. However, the equality number is not required in the independent t-test as long as the number difference is less than 1:4.In the future research, interventions may be needed to obtain an ideal and proportionate sample size for each group.

CONCLUSION

Based on the result concluded that there are significant differences the anxiety score within 2 groups of sleep quality. There are 7.35 % lower scores of anxiety in the workers with good sleep quality compared to those with bad sleep quality.

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