

Sleep Quality Among College Students

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Abstract: Many activities and lecture assignments of student cause students unable to divide their time well. Playing games or social media cause students often sleep late at night, and this has an impact on the disturbance of sleep quality. This study aims to identify the sleep quality of college students at Manokwari West Papua Province. We conducted cross sectional research in male and female students aged of 18-25 years who carry out activities on campus. Sleep quality data was collected through semi-structural interviews using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. Our results showed that most Papua University students had poor sleep quality (78%) in the past 1 month. The sleep quality of girls (48%) were poorer than boys (30%).

Keywords: Papua university; PSQI; Sleep quality; Students

Introduction

Many activities and lecture assignments cause students unable to divide their time well. Meanwhile, playing games or social media through smartphone cause students often sleep late at night, and this has an impact on the disturbance of sleep quality.

The consequence of sleep disturbance in children related to the behavioural problems and cognitive function includes lower grade point averages, increased risk of academic failure, compromised learning, bad mood, and increased risk of traffic accidents. In long term consequence, sleep disruption causes several diseases in adult people like obesity risk hypertension, diabetes mellitus, cardiovascular, and metabolic syndrome, and mental health (Shochat et al., 2014; Owens et al., 2014; Medic et al., 2017; Hershner & Chervin, 2014; Ramadhani et al., 2020; Widiani et al. 2023).

Several studies used the Pittsburgh Sleep Quality Index questionnaire (PSQI) to assess sleep quality based on seven components of sleep quality. The component of PSQI include quality of sleep, disturbance of sleep, and the effect on all day activities (Araujo et al. 2013; Saji et

al., 2019; Faulkner & Sidey-Gibbons, 2019; Jahrami et al., 2021; Jalali et al., 2020; Park, 2020).

Previous studies showed that average sleep quality of students was categorized as poor (Sastrawan & Griadhi, 2017; Nilifda et al., 2016; Sarfriyanda et al., 2015; Fenny & Supriatmo, 2016). It indicate that the sleep quality of children in the level of serious problem. The college students face the overload task, the bad habit related to hanging out with peers, play game and social media over night. These activities certainly disturbed their sleep, and it effect their health, emotional and memories. Therefore, this study will examine whether students of Papua University also have poor sleep quality using PSQI quetionnaire. This study aims to identify the sleep quality of Papua University students in Manokwari West Papua Province.

Method

The research was conducted from April - June 2019 at the Papua University Manokwari West Papua Province. The study was conducted with a cross-sectional design. The male and female respondents were 18-25 years old with total number of 515 students from

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nine faculties of Papua University (Figure 1). The inclusion criteria were active students at the University of Papua at the time of data collection, while the exclusion criteria were students who were inactive due to illness or dropout. Sleep quality data was collected through semi-structural interviews using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. Before data collection was carried out, an explanation was given to the respondent about the purpose and benefits of the study, and the risks that would not be caused during the research. If the student understands and is willing to volunteer as a respondent, a blank consent statement will be given to be involved in the research (informed consent).

In order to determine the sleep quality of respondents, PSQI calculation are grouped into 7 component scores, all of which are scored on a scale of 0-3. The seven components were subjective sleep quality, sleep latency, sleep efficiency, sleep disturbances, drug use, and daytime dysfunction. The seven component scores were then added up to produce a global PSQI score in the 0-21 range. The higher the score indicates poor sleep quality.

Result and Discussion

The students from this study came from various faculty including mathematics and natural science (FMIPA), Bisnis and economic (FEB), Engineering (F.Teknik), Agricultural Technology (FATETA), Agricultural (FAPERTA), Animal Husbandry (FAPET), Literature and Culture (F.SASBUD), Forestry (FAHUT), Education (FKIP). The student education level ranged between the year of 2013-2018.

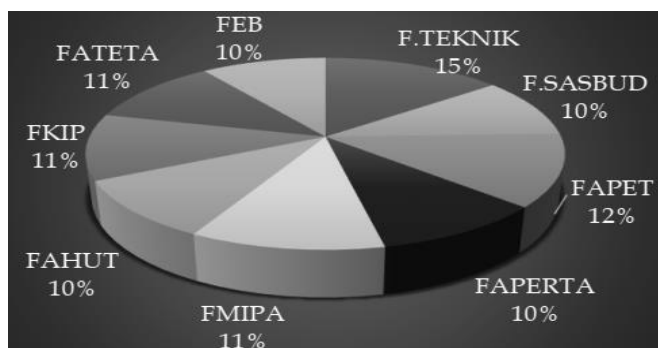


Figure 1. The percentage of respondent by faculty

Students of Papua University dominantly have poor sleep quality (78%), while others have good sleep quality (22%), based on the seven components of sleep quality: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, the habit of using drugs, and daytime dysfunction associated with sleep (Figure 2). Figure 3 showed that girls have more poor

sleep quality than boys. Likewise for good sleep quality, the percentage of girls also showed more than boys.

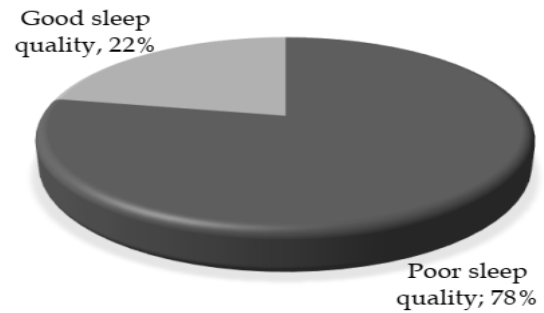


Figure 2. Sleep quality of Papua University students

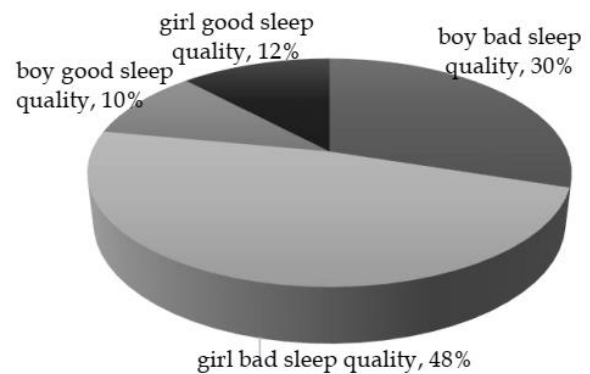


Figure 3. Comparing of boy and girl sleep quality

Table 1. Subjective Sleep Quality, Sleep Latency, and Sleep Duration of Papua University Students

| Component | Frequency | Percentage (%) |
|---------------------------------------|-----------|----------------|
| Subjective Sleep Quality | | |
| Very Good | 53 | 10 |
| Fairly Good | 315 | 61 |
| Fairly Bad | 107 | 21 |
| Very Bad | 40 | 8 |
| Total | 515 | 100 |
| Sleep Latency | | |
| ≤15 Minutes + not during past month | 68 | 13 |
| 16-30 Minutes + less than once a week | 174 | 34 |
| 31-60 Minutes + once or twice a week | 193 | 37 |
| >60 Menit + ≥3 times a week | 80 | 16 |
| Total | 515 | 100 |
| Sleep Duration | | |
| >7 Hours | 97 | 18 |
| 6-7 Hours | 163 | 32 |
| 5-6 Hours | 143 | 28 |
| <5 Hours | 112 | 22 |
| Total | 515 | 100 |

Table 1 explained three components of sleep quality: subjective sleep quality, sleep latency and sleep duration. Subjective sleep quality is the average overall

sleep quality of the individu in the last month. The subjective sleep quality of students dominantly was good (71%) in the last month. These findings were different with the sleep quality based on 7 components in Figure 1 which showed bad sleeper of students.

Most the students needed less than 60 minutes to fall asleep in the last month (84%). Based on the sleep duration, 18% of students sleep more than 7 hours, while most of the students sleep in the interval between 5 and 7 hours (28% and 32%).

Table 2. Sleep Efficiency and Sleep Disturbance

| Component | Frequency | Percentage (%) |
|--------------------------|-----------|----------------|
| Sleep Efficiency | | |
| >85% | 247 | 48 |
| 75-84% | 103 | 20 |
| 65-74% | 79 | 15 |
| <65% | 86 | 17 |
| Total | 515 | 100 |
| Sleep Disturbance | | |
| Never during last month | 14 | 3 |
| 1 times/week | 278 | 54 |
| 2 times/week | 211 | 41 |
| ≥3 times/week | 12 | 2 |
| Total | 515 | 100 |

Sleep efficiency is defined as the ratio of the length of sleep to the number of hours spent in bed. The highest sleep efficiency of 247 students (48%) were >85% and the lowest answer 65-74% were answered by 79 students (15%).

Sleep disturbances involve frequent awakenings at night, coughing or snoring loudly, feeling hot or cold, having nightmares and feeling pain. The most disturbance experienced by students occurred 1-2 times/week (95%), and the lowest disturbance occurred every 3 times a week (2%).

Table 3. Medicine Consumption and Daytime Disfunction

| Component | Frequency | Percentage (%) |
|----------------------------|-----------|----------------|
| Used Drug | | |
| Never during last month | 456 | 89 |
| 1 times/week | 34 | 7 |
| 2 times/week | 18 | 3 |
| ≥3 times/week | 7 | 1 |
| Total | 515 | 100 |
| Daytime Dysfunction | | |
| Never during last month | 79 | 15 |
| 1 times/week | 281 | 55 |
| 2 times/week | 133 | 26 |
| ≥3 times/week | 22 | 4 |
| Total | 515 | 100 |

Table 3 describes the last 2 components of sleep quality: drug use habits and daytime dysfunction. The students (89%) never taken medication in the last 1

month were the highest percentage, and 11% students taken medication several times a week.

Daytime dysfunction is a disturbance in the activities carried out for example disturbances when drowsy, falling asleep while driving, falling asleep after eating, or falling asleep when engaging in social activities. Most students (81%) experienced 1-2 times a week daytime dysfunction, while 15% of students never experienced daytime dysfunction.

Most Papua University students (78%) had poor sleep quality in the last 1 month. A big percentage of bad sleepers from these studies also found in students came from Indonesia and other countries such as Riau Indonesia 82.2% (Sarfriyanda et al., 2015; Brazil 95.3% Araujo et al. 2013), Iran 56% (Akhlaghi & Ghalebandi, 2014.), and America 60% (Lund et al., 2010).

There are two components of PSQI that have a different assessments in this study, subjective sleep quality and objective sleep quality. Subjective sleep quality is the quality of sleep during the past 1 month as a whole and assessed individually, while objective sleep quality is sleep quality that is assessed based on the sum of the scores of the 7 PSQI components. The objective sleep quality of Papua University students in the bad category was 78%, while the subjective sleep quality in the quite poor and very bad category was 29%. Thus, there were differences in the answers given by the respondents. These differences between subjective and objective sleep quality were also reported by Akhlaghi et al. (2014), the objective sleep quality is poor (56%) and the subjective sleep quality is in a good category (84%). This difference has two possibilities. Based on an objective assessment, might be the respondents do not know the symptoms associated with their sleep problems, and the perspective of sleep quality is only based on one component of PSQI.

The study of Ohayon et al. (2017) described a sleep latency of 15 minutes as an appropriate measure to assess good sleep quality. Sleep latency ranging from 16 to 30 minutes is rated the same as good sleep quality. However, about 53% of Papua University students had poor sleep latency. These finding might be related to the habit of using electronic media such as smartphones, internet or television before going to bed, which can make students' sleep latency worse. The use of smartphones before going to bed among Papua University students was 38%. Mesquita et al. (2010) stated that internet use between 19.00 WIT and 00.00 WIT increased the risk of sleep deprivation among young adults, compared to watching television. The use of electronic media makes a person closer to the electronic media screen and involves mental and physical factors in operating it. This makes a person's

level of alertness increase and more concerned with electronic media activities than sleep.

Sleep duration varies for each person according to age level. Ohayon et al. (2017) showed that sleep duration for adolescents was around 8-10 hours, 7-9 hours for young adults and adults, and 7-8 hours for older adults. Most Papua University students have a sleep duration of 6 hours, while the research of (Sutrisno et al., 2017) showed that students' sleep duration of 5 hours was 87%. Research by Araujo et al. (2013) showed that the time taken by students to sleep was around ± 6.3 hours. Individuals with sleep durations far outside the normal range have serious health problems. Individuals who deliberately limit sleep for a long time can be harmful to health (Medic et al., 2017).

The percentage of sleep efficiency of Papua University students in poor category was relatively small (17%). This results were the same as the research of Sutrisno et al. (2017), but different with Araujo et al. (2013), which showed that 99% students classified as bad sleeper efficiency (<65%).

Sleep disturbance of students according to Sutrisno et al. (2017) occurring once a week was 84%, but sleep disturbance was relatively small in Papua university students (54%). Disturbances that are often experienced including insomnia, hungry, assignments, playing smartphones, fatigue and writing manuscript of thesis. Research by Schlarb et al. (2017) showed that 74% of respondents reported symptoms of insomnia disorders.

Most Papua University students have never consume the drug in a last month (89%). These results were different from the study by Lund et al. (2010) which showed students almost consume the drug for sleep. Sleep disturbances at night usually have an impact on activities during the day. However, most Papua University students have no difficulty still awake while doing their activities during the day. In contrast to the research conducted by Sutrisno et al. (2017) and Araujo et al. (2013), daytime dysfunction often occurs 1-2 times a week.

Conclusion

The sleep quality of Papuan university students was categorized as poor. Girls categorized as more bad sleeper than boys. This study is consistent with previous research that most college students have poor sleep quality.

Author Contributions

AKJ contributed in writing original draft preparation, administration; EIJK, FD contributed in formal analysis, data curation, writing, editing, and finalization the manuscript.

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Conflicts of Interest

The authors declared no conflict of interest.

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