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## Preliminary Study: Sleep Duration and Sleep Quality in Male College Students

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### Abstract

College students are in the period of transition from adolescence to adulthood. This transition period can bring some obstacles for them, for example, disruption in sleeping pattern. According to Tsai & Li (2004), emerging adults usually have sleep deprivation. Another recent study found that college-age teens or emerging adults do have changes in sleep patterns (Lund, Reider, Whiting, & Prichard, 2010). Those emerging adults tend to stay up late and then delay waking up-time. Based on the initial interview, many students complaint that sleep later affects their academic performance, for instance, being late to the class; daytime sleepiness; and difficulties in paying attention in the class. Thus, we would like to examine the relationship between the duration of sleep with sleep quality. The result shows that there was a significant and negative correlation between sleep duration and sleep quality, which means that the sleep quality was slightly determine by how long someone sleeps. Besides, only 5% of the respondents are not using their gadget before bed. The use of gadget affects sleep difficulties and lead to poor sleep quality. Thus, the result of this research will be used as our initial data to study further.

**Keywords:** Sleep Quality, Sleep Duration, Gadget, Male Student

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## Introduction

College students are in the period of transition from adolescence to adulthood and they also has a lot of developmental task that they must fulfill. However, while they are trying to adapt with the situation, there might be a problem appear for example disruption in sleep pattern. According to Tsai & Li, (2004), emerging adults usually has sleep deprivation. In addition, several other studies also mentioned that the result of insufficient and inconsistent sleep in adolescents or emerging adults is low academic achievement, often absent from school, driving while sleepy, substance abuse and difficulties in emotional regulation (Danner & Phillips, 2008; Hardway & Fuligni, 2006; Johnson & Breslau, 2001; Wolfson, 2010).

Another study found that college-age teens or emerging adults do have changes in sleep patterns (Lund, Reider, Whiting, & Prichard, 2010). The result of the study that conduct by Lund et al. (2010) shows that insufficient sleep was found both in high school students and college students, but college students has later bedtimes and risetimes compare to the high school students. National Sleep Foundation (NSF) recommend there is differences between sleep duration among different age level. For emerging adults, with the age range 18- 25 years old, The NSF suggests seven to nine hours should be sufficient for them (Hirshkowitz, Whiton, Albert, Alessi, Bruni, DonCarlos, Hazen, Herman, Adams Hillard, et al., 2015; Hirshkowitz, Whiton, Albert, Alessi, Bruni, DonCarlos, Hazen, Herman, Katz, et al., 2015).

As mentioned earlier, emerging adults are prone to have sleep deprivation. According to Hirshkowitz, Whiton, Albert, Alessi, Bruni, DonCarlos, Hazen, Herman, Adams Hillard, et al. (2015), sleep in emerging adults differs significantly from college students who starting to enter the workforce, suddenly have reduced parental supervision, strict studies and many new social events in life. In addition, the panel in the earlier

research also mention that sacrificing sleep duration is associated with health and well-being, for instance increased fatigue, decreased the performance of psychomotor, accidents, psychological health and low academic performance.

Lack of sleep condition in emerging adult affect the sleep quality. Even though, sleep quantity is part of sleep quality, it has qualitative differences. Sleep quantity has easier quantifiable component that measure how long someone's sleep, while sleep quality talking about depth of sleep, how people feels after sleep and the satisfaction about the sleep (Pilcher, Ginter, & Sadowsky, 1997). According to Pilcher et al. (1997) there was a correlation between sleep quantity and sleep quality, which means that emerging adult who has short of sleep duration prone to have poor sleep quality.

Good sleep quality indicated by people who has shorter time to be fully awake after sleep, fewer time awakenings in the night and reduced wake after starting to sleep (Ohayon et al., 2017). People who has a good sleep quality tend to have better health condition, better psychological functioning, greater well-being and less daytime sleepiness (Harvey, Stinson, Whitaker, Moskowitz, & Virk, 2008). While people with poor sleep quality usually experience conversely.

The explanation earlier shows that having enough amount of sleep is important for everyone and also it is linked to a good sleep quality. Thus, in this study we are intended to determine the relationship between sleep duration and sleep quality in male college students.

## Method

The study was using a quantitative research method. The participants of this preliminary study consisted of 45 male students that recruited from Psychology Department, Universitas Negeri Padang. These male students were 18 – 22 years old with a mean age of 20.11 (SD: .959) years. The sleep quality data was collected by adapting a Sleep Quality Scale (SQS) questionnaire that developed by Yi, Shin, & Shin, (2006). A forward and backward translation was conducted in order to adapt this questionnaire, so that it can be use in Indonesia. In addition, demographic data was documented as well in the process of data gathering, and it consist of the bedtime and risetime, sleep duration. The use of gadget before bed was self-reported by the subject. The participants were randomly selected and will get a set of paper that consisted of several questions for demographic data and the SQS questionnaire. The data gathering was only take around 5-10 minutes to finish for each subject. We recruited 68 male participants who filled the paper until the last part. The participants doing a self-administered questionnaire after agreed with the term and condition in informed consent.

## Results and Discussion

Table 1 and table 2 presented descriptive statistic (mean and standard deviation) and correlation between variables.

Table 1 Descriptive Statistic

| Variables      | M     | SD     |
|----------------|-------|--------|
| Sleep Duration | 5.75  | 1.490  |
| Sleep Quality  | 36.85 | 11.453 |

Looking at table 2, it is apparent that sleep quality was significant negative correlation with sleep duration.

Table 2 Correlation between variables

|                | Sleep Quality |
|----------------|---------------|
| Sleep Duration | -.247*        |

Note : \*p<.05

The purpose of this study was to investigate the correlation between sleep duration and sleep quality in male student college student. The result showed that these two variables was significantly correlated, even though the

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correlation is small (-.247). Surprisingly, since the correlation was significant and negative means that the shorter duration of the sleep, the better of sleep quality.

According to the recommendation from National Sleep foundation related to sleep duration, young adult with the age around 18-25 is suggested to have seven to nine hours of sleep (Hirshkowitz, Whiton, Albert, Alessi, Bruni, DonCarlos, Hazen, Herman, Adams Hillard, et al., 2015; Hirshkowitz, Whiton, Albert, Alessi, Bruni, DonCarlos, Hazen, Herman, Katz, et al., 2015). However, according to the finding of the study, the average time of sleeping duration was around 5.75 hours. On the other hand, the average score of sleep quality was 36.85 which is categorize as good.

As described earlier, poor sleep quality can lead to bad health condition, daytime sleepiness, worse well-being and poor academic performance, while having a good sleep quality leads to better mood states and less negative impact on personality (tend to avoid harm behavior) (Harvey et al., 2008; Takeuchi et al., 2018). On the other hand, some research finds that sleep deprivation can cause low academic achievement, often absent from school, substance abuse and lower cognitive performance (Harvey et al., 2008; Pilcher & Huffcutt, 1996), some other find that shorter sleep duration associated with better executive function, higher persistence, hardworking, and stable despite frustration (Takeuchi et al., 2018).

In a study with healthy young adult, Takeuchi et al., (2018) found that longer sleep duration and poorer sleep quality lead to an atypical neural condition. Consistent with the literature, this research found that a good quality of sleep is negatively corelated with shorter time of sleep. These result suggest that people who has shorter duration of sleep may have a good quality of sleep. It can therefore be assumed that having a short duration of sleep can also beneficial to people's life.

As an essential thing in life, sleep duration and sleep quality is also plays important role on people conditions. The neural correlates with these two variables were varies. Takeuchi et al., (2018) explains that poor sleep quality associated with lower regional grey matter volume (rGMV) in the area of Prefrontal Cortex (PFC) and Hippocampus, which related to negative affect and poor academic performance (Dewald, Meijer, Oort, Kerkhof, & Bögels, 2010; Gray & Watson, 2002; Weng et al., 2014). On the other hand, Takeuchi et al., (2018) found that short sleep duration better executive function that contradict the previous study related the duration of sleep. Sleep deprivation is not always related to aberrant neurocognitive mechanism in healthy adult. Even though, short sleep duration may increase fatigue. Thus, sleep duration and sleep quality should be investigate to improve the sleep to avoid negative effect that may happen (Kohyama, 2021).

Another important finding was that 95% of the participants was using their gadget (especially mobile phone) before bed time. The use of gadget before sleep may influence the duration and the quality of sleep, which can explain the short duration of participant's sleeping behavior. These finding is consistent with Mak et al., (2014) who explain that mobile phone viewing correlates with sleep duration, sleep quality and daytime sleepiness. People who use their phone before bed tend to delay their sleep time. These situation can lead to shorter sleep duration and increase daytime sleepiness that might disturb the activity during the day.

Returning to the question posed at the beginning of the beginning of this study, it is possible to state that a shorter sleep duration related to a better sleep quality. Furthermore, the use of gadget before sleep also can cause delay sleep time which may lead to shorter sleep duration and poorer sleep quality.

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