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THE EFFECTS OF INADEQUATE SLEEP ON ONE'S PHYSICAL AND MENTAL WELL-BEING

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Abstract:
By assessing the frequency of poor sleep quality in this understudied population and investigating the connection between poor sleep quality and psychological issues among Thai undergraduates, we hope to close the gap in the research. Cross-sectional surveying was employed in this study. The Pittsburgh Sleep Quality Index (PSQI), the Epworth Sleepiness Scale, the Depression, Anxiety and Stress Scale, and the Thai General Health Questionnaire were among the self-administered surveys. Among the 1,055 undergraduates in the research group were 18 to 25-year-olds. 42.4% of people reported having poor-quality sleep. Pupils who were categorized as having poor sleep quality reported noticeably more psychological issues. This suggests a linear relationship between increasing levels of global sleep quality and elevated mood and anxiety symptoms. More research is required to properly create targeted health promotion initiatives for Southeast Asian undergraduates, including prospective studies with objective assessments of sleep duration and quality.

Keywords: poor sleep quality; mental health issues

❖ Introduction:

It is thought that shorter and lower-quality sleep is a common occurrence in contemporary society. Sleep disturbances are linked to significant declines in life quality and are thought to be a symptom and predictive indicator of numerous disorders [1,2]. The Diagnostic and Statistical Manual of Mental diseases, Fourth Edition (DSM-IV) lists sleep disruptions as a diagnostic criterion because they are frequently seen as signs of specific psychiatric diseases [3]. The National College Health Risk Survey (NCHRS) of the Centers for Disease Control revealed that 11.8% of undergraduate students at a large university in the USA's Southeast reported having poor quality of sleep, while 76.6% of students at the same university reported having occasional sleep problems [4].

Health risk behaviors, which include physical and psychological health issues such chronic illness, drowsy driving, fighting, smoking, alcohol usage, anxiety, tension, academic stress, somatic discomfort,

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melancholy, and suicidal thoughts, appear to be linked to poor sleep quality [1,4,5]. Many people think that having a bad night's sleep makes you more irritable and depressed [6]. High levels of psychosocial distress, which show up as increased irritability, anxiety, tension, sadness, confusion, and overall health issues, are typically displayed by students who report having poor quality sleep [7, 8]. There are, however, few published investigations on the relationship between psychological issues and poor sleep quality among Thai undergraduates [9, 10].

By assessing the prevalence of poor sleep quality in this understudied population, the study aimed to close the observed gap in the existing literature. Additionally, we looked into the connection between psychological issues and poor sleep quality among southern Thai undergraduate students. We reasoned that the findings of this study will spur the creation of wellness and health initiatives tailored to the requirements of young adults in Thailand and other Southeast Asian nations.

❖ Materials and methods

Research design and sample

In January 2011, a cross-sectional investigation was carried out. Of the 1,500 undergraduate students (N=1,130) from one independent institution who were asked to participate in our survey, approximately 75.3% chose to join in the current study. Undergraduate students, both male and female, participated. Students with vision impairments and those who couldn't read the questionnaire forms weren't allowed to participate in the study. Students enrolled part-time or through remote learning were also ineligible for this study. Posters and flyers detailing the study and its methods were put up all over campus. Each participant was given a color pen highlighter as a minor incentive. Every participant was fully aware of the purpose and content of the questionnaire.

In writing, each participant provided informed consent. Subjects received an anonymous questionnaire after providing written informed consent for the study. The University of Washington's Human Subjects Committee, in conjunction with Walailak University's Ethical Clearance Committee on Human Rights Related to Research Involving Human Subjects, examined and approved all study protocols. Filling out a self-administered questionnaire was part of the data collection process. After 75 questionnaires with missing data on sleep quality (6.6% of 1,130) were removed, 1,055 undergraduate students made up the final analytical sample size.

Questionnaire

The self-reported questionnaire included demographic information as well as lifestyle questions (such as use of energy drinks, tobacco products, and alcohol), the Epworth Sleepiness Scale (ESS) [12], the Pittsburgh Sleep Quality Index (PSQI) [11], the Depression, Anxiety and Stress Scale (DASS 21) [13], and the Thai General Health Questionnaire (Thai GHQ-12) [14].

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Evaluation of the quality of sleep

The PSQI evaluates sleep quality over a period of one month and is suitable for people who are eighteen years of age or older [5,7]. The seven components of the PSQI are duration of sleep, sleep disruption, sleep latency, habitual sleep efficiency, use of sleeping medication, dysfunction throughout the day, and overall quality of sleep. All of these components are related to sleep habits within the last month. A global score was defined as both a dichotomous variable (with a range of 0 to 21) and a continuous variable (with higher scores indicating lower sleep quality). A global score of five or less was thought to indicate a good-quality sleeper, whereas a score of more than five was thought to indicate a poor-quality sleeper [1]. Previous reports have demonstrated that a global PSQI's internal consistency reliability is 0.71 [5].

Similarly, the PSQI instrument's Cronbach's alpha has been reported to be 0.71. The PSQI questionnaire, which asked participants how many hours they actually slept at night in the month before they joined the study, was used to measure the participants' amount of sleep. Two variables were calculated: a continuous variable representing the number of hours of sleep as defined by the Pittsburgh Sleep Quality component [15]; and a dichotomous variable representing the number of hours of optimal and suboptimal sleep (>7 vs. ≤7 h).

The Epworth Sleepiness Scale (ESS) was used to evaluate daytime tiredness. This tool was used to detect excessive sleepiness linked to clinical sleep disorders or accumulated sleep debt [1]. The participants' propensity to nod off in various scenarios was ranked using the ESS. The scoring system for this 8-item scale was 4-points. A score ranging from 0 to 24 was obtained by adding up all 8 items; scores higher than 9 were considered to indicate considerable levels of daytime sleepiness. According to Cronbach's alpha, the ESS has an internal consistency of 0.75 [1]. For the current sample, the ESS's coefficient alpha was 0.63.

Assessment of psychological problems

The sadness, Anxiety and Stress Scale (DASS 21) is a short form that is used to evaluate students' symptoms of stress, anxiety, and sadness [13]. The DASS 21 is a 21-item, 4-point rating system used to assess a symptom's prevalence during the preceding week. The scores for the identified elements on each scale (Depress, Anxiety, and Stress) were added up. A wide range of symptoms had high levels of severity, as shown by the high scores on each scale. Cronbach's alphas for the subscales range from 0.81 to 0.94, indicating strong internal consistency. The scale also has adequate validity when tested on a range of non-clinical samples [16]. Chronbach's alpha for the anxiety subscale in this study was 0.73, while for the depression and stress subscale it was 0.80, indicating moderate to excellent internal consistency. With a Chronbach's alpha of 0.90, the overall scores demonstrated a high level of internal consistency.

In the month before study participation, the Thai General Health Questionnaire (Thai GHQ-12) was utilized as a self-administrative screening tool for mental health issues. A shortened variant, the Thai GHQ-12, has 12 items. In Thailand, a GHQ-12 score of two or more is seen as indicative of serious

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psychological distress. Thailand has reported the Thai GHQ-12's reliability, with a Cronbach's alpha coefficient of 0.84. The tool is thought to be suitable for usage with Thai people [14]. For the current study, the Thai GHQ-12's internal reliability was 0.82.

Statistical analysis:

For all statistical studies, the STATA (version 10) software program was utilized. The usual analysis for continuous variables and proportions were carried out. The correlation coefficients between psychological issues and sleep quality were calculated using Pearson's method.

❖ Results

Eighty-four percent of all undergraduate students were from southern Thailand. 804 (76.2%) of the participants were female, and the average age of the group was 20.17 ± 1.22 (range: 18–25 years). Among these students, there were 35.2% sophomores, 30.7% freshmen, 27.1% juniors, and 7% seniors. About 26% of students said they woke up at 7:00 am, while 32% said they went to bed at midnight the previous month. Seventy-six percent of the individuals reported sleeping for less than seven hours a night, and the average number of hours they slept was 6.64 (standard deviation 1.40).Every participant's average global PSQI score (mean ± standard deviation, 5.50 ± 2.46, range 0 - 18) was higher than the >5 threshold for poor sleep quality. 42.4% of participants in total were categorized as having trouble sleeping. Pupils who were categorized as having trouble sleeping said they slept for 6.0 hours on average every night (standard deviation 1.43, range 1.5–13.0). Men and women experienced comparable rates of poor sleep quality (42.6 and 42.3%). With a range of 0 to 18, the mean Epworth Sleepiness Score was 7.44 ± 3.36. In 26.2% of cases, excessive daytime drowsiness (ESS >9) was seen. Of all the participants, 42 percent reported drinking alcohol on a regular basis within the preceding 12 months, and 3 percent said they currently smoke cigarettes. Of the participants, almost 51% said they drank energy drinks. With a Thai GHQ-12 score of 1.22 ± 0.42, 22.0 % of participants reported experiencing psychological distress (Thai GHQ-12 score of 2 or higher).

Stress, anxiety, and depressive symptoms were statistically substantially correlated with poor sleep quality. Among male students who were categorized as poor sleepers, the prevalence of mild to extremely severe symptoms of depression, anxiety, and stress scores were 54.3, 67.0, and 43.8%, respectively. Among female students who were categorized as poor sleepers, the associated prevalence of mild to extremely severe symptoms of depression, anxiety, and stress scores were 42.7, 72.0, and 41.8%, respectively. Daytime sleepiness ($R=0.17$; $p < 0.001$), mental health issues ($R=0.36$; $p < 0.001$), the degree of depressive symptoms ($R=0.34$; $p < 0.001$), anxiety ($R=0.35$; $p < 0.001$), and stress ($R=0.38$; $p < 0.001$) were all significantly correlated with the PSQI score, suggesting progressively worse global sleep quality associated with higher levels of daytime sleepiness and higher levels of stress.

❖ Discussion

This study adds to the body of research by examining the frequency and relationships between poor sleep quality and psychiatric issues in young adults in Thailand. Overall, our data support earlier research' findings that many undergraduate students report having poor-quality sleep [1,4, 17, 18]. The majority of undergraduates across a variety of worldwide settings and racial and ethnic groupings

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frequently experience poor sleep quality, sleep disruptions, and at least occasionally, unhappiness with their sleep [19]. A prior study conducted at a sizable public institution in the southeast of the country discovered that 1,845 college students said they slept 6.8 hours on average every night on a typical night for job or school [20]. According to our research, students claimed to have slept for an average of 6.6 hours, although though they needed 7-9 hours of sleep for optimal functioning [21,22]. Furthermore, our data lend credence to the theory that the transition to early adulthood is associated with altered sleep patterns, which frequently lead to lower-quality sleep and subsequently higher levels of daytime sleepiness [23]. According to our study, 32.7% of students who were categorized as low quality sleepers complained of being overly tired during the day. This observation aligns with the results of an earlier investigation using Malaysian medical students. Remarkably, researchers have shown that severe daytime sleepiness was experienced by 35.5% of Malaysian medical students [23]. This conclusion, however, is less than that of a 2010 study conducted at a public institution with Thai medical students and students from the Faculty of Humanities [9]. 48.9 and 49.4% of Thai medical students and Faculty of Humanities students, respectively, reported being very sleepy during the day [9].

According to more research, college students frequently experience excessive daytime sleepiness, which is brought on by their social and academic obligations [8,10].Our results are in line with earlier research that found significantly higher self-reported negative moods were linked to poor sleep quality [1,9,24, 25]. For instance, Steptoe and associates observed that young adults with self-rated health assessments of ≤7 hours per night were more likely to have lower sleep quality [25]. The negative moods of anger, bewilderment, despair, exhaustion, and tension were considerably higher among undergraduate students who were classified as having poor-quality sleep. According to a recent study, 29.1% of medical students in southern Thailand felt psychological discomfort, which is similar to the 22% of undergraduates in our study [26].

Furthermore, 45.5% of the students in our study who were categorized as having poor sleep quality also had a high prevalence of depression. Male undergraduates who are categorized as having poor sleep quality reported moderate levels of stress (22.9%), moderate anxiety (29.3%), and moderate sadness (26.7%). Compared to their male counterparts, female students who experienced poor sleep quality reported a higher prevalence of moderate anxiety (31.9%). The limitations of our study need to be taken into account when interpreting the findings. Since just one autonomous university participated in this study, it is not possible to extrapolate the findings to all Thai undergraduate students. Further research will benefit immensely from a multi-center study that includes both public and private universities.

Furthermore, because this study only included a single survey, we are unable to pinpoint the precise timing of the association between poor sleep quality and the emergence of mood and anxiety disorders' new onset symptoms. Finally, because a laboratory research was not used in this investigation, objective measurements of the quantity, quality, and associated neuroendocrine dysregulation of sleep—such as fragmentation—could not be evaluated. Nevertheless, our study has significant advantages in spite of the aforementioned drawbacks. First off, a wide range of academic programs, including the social

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sciences, health sciences, technology, and natural sciences, were used to attract the participants. Second, compared to all other research conducted in Thailand, the sample size was higher. Finally, worries regarding selection bias were reduced by the high participation rate.

❖ Conclusion

In conclusion, our research showed links between symptoms of anxiety and mood disorders and self-reported sleep quality. Higher prevalence and increasing intensity of depressed, anxiety, and stress symptoms have been linked to poor global sleep quality. Our results support the idea that university health care providers should work to improve undergraduate students' understanding of sleep health and to promote individual wellness by highlighting behaviors that improve sleep hygiene. [1, 10, 27].These findings are in line with those of other studies.

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