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Exploring the Relationship Between Sleep Quality and Mental Health Among College Students

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Abstract

The study examines the brittle connection that exists between sleep quality and mental health for college students, putting much emphasis on gender differences. In order to evaluate sleep quality, a comprehensive questionnaire was given to a heterogeneous sample of university students while psychological wellbeing scores were used to determine mental health outcomes. The findings signify that there is a strong negative correlation midst sleep quality and mental health among students because poor sleep quality is correlated with impaired psychology wellness. In addition, male and female participants displayed notable variations in their psychological well-being scores. The gender disparity underscores why multiple factors are crucial in understanding and dealing with mental issues in academic settings' populations. This investigation underlines the need for specific programs that target sleeping improvement and also enhanced emotional performance knowing where it is necessary to keep in mind special gender approach towards supporting welfare of college student.

Keywords: Sleep quality, Mental health ,College students, psychological well-being,

Introduction

In the past few years, people have started taking seriously mental health of college students because it has caught their attention as a growing issue that has considerable impact on academic performance, personal development and general well-being. Of the many factors influencing mental health outcomes, sleep quality has taken center stage as a serious determinant requiring examination. Cognitive functioning, emotional regulation, and stress management are crucial components of mental health that require individuals to get enough sleep (Hershner & Chervin, 2014). However, meeting these standards is not easy for many college students due to rigorous academic work and social lifestyle they live in schools; this can adversely affect their mental health. Sleep does impact health in big ways. Physical well-being, brain function, and emotional balance all hinge on quality sleep time. How well and how long we¬ snooze impacts mood, stress-coping, and overall mental fortitude (Alvaro et al., 2013). Poor sleep patterns mean higher chances of feeling depressed, anxious, and generally unwell (Baglioni et al., 2011). Mental health encompasses feelings, thoughts, and social connections. Robust mental health brings purpose, reSilience, independence, and positive self other bonds (Keyes, 2007). Struggling mentally often looks like sadness, worry, stress, and reduced wellness. The literature is replete with studies that have investigated the complicated feedback system between sleep quality and mental health in both ways. Poor sleep has a pronounced effect on worsening mental health by symptoms that in turn make sleep worse (Baglioni et al., 2011; Taylor et al., 2005). From a college student's standpoint, the correlation between stress, anxiety, and depression, and sleep disruption, manifesting as forms of insomnia and other disorders, can be particularly troubling. Acquiring such understanding will help relate intervention strategies that could produce a better sleep hygiene and create a healthy mind among college students. Furthermore, what the data reveals is that gender, another sensitive factor in the social context, may influence the reciprocal relationship as well.

Here are some signs of poor sleep quality:

Day-time symptoms

These include yawning all the time, feeling tired or irritable, or otherwise fatigued, poor concentration, poor memory, decreased sex drive, feeling dull or drowsy, poor judgment, short episodes of sleep during the day or sleep generally, or unplanned naps, reduced

social activity, problems remaining awake while in warm rooms, while in meetings and lectures, while driving, commuting, or having a large meal.

Night-time symptoms

Possible problems with sleep are procuring more than 30 minutes to fall asleep after one get into bed; more than one episode of waking up during the night; or lying up for more than 20 minutes when one wake up in the middle of the night and passing less than 85% of one's time in bed asleep.

Other signs: Some of the indicators include breaking out on the skin, breaking out of the eyes, feeling more hungry than usual, especially wanting to eat junk food, gaining weight, getting sick, feeling stressed, and having a sleep disorder such as snoring or gasping for air.

Biopsychosocial: This means that the quality of sleep and mental health still remains interlinked with a complex web of relations subject to a myriad of biopsychosocial factors. In simple terms, disruption of these sleep patterns on the biological end can result in dysregulation of the neuroendocrine systems, whereby the function of neurotransmitters is impaired and causes a compromise in immune responses, as stated in Harvey (200). Psychological mechanisms include cognitive distortions, negative mood, and maladaptive coping strategies adopted due to poor sleep quality that result in further worsening of symptoms (Taylor et al., 2005). However, the social environmental stressors, peer relations, and academic pressures are found to be interacting with sleep disturbances in predicting their influences on the mental health outcomes of college students (Gaultney, 2010).

Some petty things may result in sleep deficiency, but some of the prime symptoms of some illnesses are precisely that. Conditions linked with sleep deficiency are the cause of many chronic health problems, including heart diseases, kidney diseases, high blood pressure, diabetes, stroke, overweightness, and despair.

Through research, the issue has been confirmed that it is mostly the females who when they study at colleges that are the ones who complain more about stress and poor health conditions rather than their male colleagues (American College Health Association, 2019). In the same way, it has been observed that, the sleep patterns of women and men don't follow similar rhythms and they may have different degrees of sleep disorders. Therefore, the study of if there are gender differences in

students sleep and mental health is required (Krishnan & Collop, 2006).

Sleep is a fundamental biological process; a physiologic need in human life develops diverse aspects of functioning physiology, cognitive performance, and emotional control. During sleep, the restorative sequence of bioprocesses supports physical recovery, neural consolidation, and immune function. Strongly related to such findings, sleep disturbance has not only underscored a strong relationship with matters of mental health but is also often a presenting complaint or part of a cluster of symptoms for a given mental health disorder.

Sufficient and restorative sleep contributes to ensuring the optimal functioning of cognitive processes. Memory consolidation in the learning process occurs during sleep, and this enables the brain to process and store information that has been gathered in the course of the day. During sleep, it's believed to reorganize neural networks afresh, transfer memories from short- to long-term storage, and possibly reinforce learning and problem-solving powers. The poor quality of, or deprivation from, sleep, on the other hand, might impair cognitive performance to the extent that one may find it hard to concentrate, memorize things, and make decisions.

In addition to its role in promoting cognitive function, this kind of rest is paramount to assist in emotional regulation and overall psychological health. In so doing, it means that sleep becomes a buffer against adverse mood, affective processing, and stress resilience effects brought about by daily stressors. Adequate sleep helps in the emotion regulation of responses, therefore keeping a person on even keel with the ability to respond adaptively to challenging situations. Sleep disturbances are associated with an increase in vulnerability to disturbances of mood taking the form of anxiety and depression. Long-term lack of sleep or chronic sleep disorders are one of the factors that make the symptomology of mood disorder worse due to increased emotional reactivity, irritability, and hopelessness.

Given all the academic pressure and social obligations and financial concerns and fundamental life changes associated with college, students can easily become stressed. The aforementioned factors may dramatically disrupt their sleep in terms of timing, hours, and overall quality , as evidenced by Sleep . Additionally, college life has the potential to make one’s mental health condition worse or even cause new problems to develop. Thus, it is clear that

sleep and mental health must be addressed together. Thus, our mental health is positively correlated with the quality and duration of sleep.

Anxiety and disposition that gender causes to students hinder the quality of sleep of students and cause mental health problems among them. That is why a deeper and more meaningful investigation is required. This research aims to soon broaden the existing framework by pinning down the link between sleep quality and college students' overall mental health status, as well as to explore whether this relationship is gender specific. This entails gathering information, understanding the implication of the nature of their concerns as well as how it might influence our judgment, and lastly developing supporter system that will help motivate and improve their health condition throughout the academic endeavours. The sleeping process, considered the onset of the physiological state, is the basis for regulating mood, thinking and emotional competence. On the other hand, affected sleep schedules or sleep quality can have equally significant effects on a person's mental health outcomes (Harvey, 2008). For instance, college students who have chaotic and misaligned with natural cycles may experience any negative effects of sleep quality to their mental health more. Much of the time of students is spent on reading and studying, spending time with friends, and attending extracurricular activities. However, their vales of sleep become weaker when these activities intrude on their sleep time leading to sleep deprivation and sleep disruptions (Gaultney, 2010). On the other hand, you'd face chronic fatigue, less focus, and increased emotional reactivity which in turn worsen existing mental health long term problems.

College students' mental health and quality of sleep have been trying to break through as a relevant study subject for years now Our research shows that the bidirectional relationship exists where decreased quality of sleep predicts a greater risk of mental health issues, and, in turn, deterioration of mental health contributes to sleep problems (Roberts & Duong, 2013). Aside from feminism, new research also claims that gender influence this relationship, where notable differences are observed in patterns, disorders of sleep and increased vulnerability of College- marks a major life change for young people-. They experie-nce freedom, acade-mics, social life. Still, this exciting time brings issue-s that impact well-

being like poor sleep and mental health trouble.

To measure mental health, researchers often use Ryff's Psychological Wellbeing Scale-(PWS). This scale evaluates diffe-rent parts of psychological well-being. These include self-direction, control over life situations, personal growth, positive- relationships, purpose, self-acceptance (Ryff, 1989). By looking at many aspects of well-be-ing, the PWS gives a complete- picture of someone's mental health state health among male and female college students (Troxel et al., 2014). To help achieve this goal of designing solutions and mechanisms that are individualized to the needs of students in college, it is necessary to have a deep understanding of the intricate interaction of the three elements, i.e., sleep quality, mental health and gender. Through a thorough exploration of these complicated issues, the purpose of this study is, not only to add, but to be a factor to the current pool of literature in which the current status of college student well-being is being examined, and in addition to that, to inform focused interventions designed to promote health and resilience in the university environment.

A good physical health, as we all know, reflects very greatly on sleep. One should sleep regularly, without any restrictions. Medical research says that unhealthy sleep can bring many other diseases related to cardiology, starting from heart failure to diabetes of the second type. But if there is any connection between mental health and sleep?

Some psychiatric conditions may cause sleep problems, and sleep disturbances may also make some psychiatric conditions worse, such as depression, anxiety, and bipolar disorders. Exploration alludes that the affiliation relating “sleep” and “mental health” is multifaceted.

However, since then, a whole set of psychiatric conditions were found to be associated with sleep deprivation. Current surveys imply that sleep deprivation might perform a causal role in the growth and holding of altered mental health problems. (‘Scott AJ, Webb TL, Rowse G’.) “Does improving sleep lead to better mental health?’ A procedure for a meta-analytic review of randomised controlled trials.

In other words, trouble sleeping can cause alteration to one's mental health, but mental conditions can also worsen trouble sleeping. Though researchers are not quite sure of the underlying causes, they generally think that lack of sleep may be a cause of the onset of some psychological conditions. This is why it is important for one to see a doctor if there

is indeed a problem either falling or staying asleep. The two could lock one in a vicious circle that needs to be broken by professional medical intervention.

This research, therefore, aims to contribute new knowledge in this field of the relationship between the mental health of college students and the quality of sleep. Further, this research has a possibility to explain the mechanisms behind this relationship and may even identify the moderators or mediators of this relationship, thereby helping them to know how they might be able to better facilitate student well-being and better the experience of college. The ultimate goal is to inform colleges of evidence-based recommendations so that policies are put in place that may be of help to students in helping maintain good sleeping habits and mental wellness. This is benefiting college students with better academic performance, a decrease in stress, and improved quality of life. Addressing the underlying causes at the level of the university, is what would give universities the ability to nurture those enabling conditions that students need to be able to do well, both in relation to poor sleep and in relation to mental health problems, among other illnesses.

Current evidence also shows that there is a potential difference in the effect of sleep quality on mental health between male and female students at university. The literature does suggest that differences between the sexes in sleep patterns, sleep disorders, and vulnerability to mental health issues really do exist and may warrant further investigation into gender-sensitive factors among college populations.

With such a high prevalence of sleep disturbances and poor mental health in college students, understanding the relationship that exists with the gender of the student and mental health is very important. The present investigation tries to cover this ground by examining the link between sleep quality and mental health amongst college students gauged through two different indicators of psychological well-being, keeping an eye on gender. Thus, we try to explain the complexities with the aim of providing information in developing interventions and support strategies tailor-suited to specifics of college students' needs so that they can be healthy and reach their well-being goals throughout the journey in universities.

Rationale: College life brings a lot of changes to students working cycle, that often affects their sleep patterns. It is mainly

scheduled activities, rising workload and social events. The majority of college students experience low quality sleep; poignantly, literature supports that one in three college students has insomnia symptoms and disturbs sleep (Lund et al., 2010). Simultaneously, these collegegoers suffer from mental stress as well as depression. To help students in college cope, more targeted interventions are required to promote their total well-being (American College Health Association, 2019). Through the investigating of the association amongst sleep quality and mental health this research endeavours to support the work published so far and help understand better the ways of improving university students' mental health.

Purpose of the Study: In this research the study will determine the link between mental health and poor sleep of college student. Primarily, the aim of the investigation is to proves whether quality of "sleep" is a good interpreter of mental health outcomes and whether there are significant differences between male and female students' mental health scores.

Research Gap: While previous research has examined the link between 'sleep quality" and 'mental health' in various populations, limited studies have specifically focused on college students. Furthermore, the probable gender variations in this relationship remain underexplored. Addressing these gaps is crucial for developing targeted interventions to promote mental health and wellbeing among college students.

Need for and importance of the study: One should pay close attention to the psychological consequences of sleep quality on students' mental health concerning their life outside school, academic performances, this to provide a path for the improvement of students' emotional state and their learning performance. Both deciding which factors can lead to students experiencing mental health problems and form policies considering this, the universities have the opportunity to design approaches such as healthy ones that make students change their lifestyle and protect their health. In this case, the most basic sense is quite important to understand if a gender difference would exist in this perception. This would provide males and females and then followed by some approved actions as a way to deal with students and their needs respectively.

Objective: The objective of this study is to explore the corelation between sleep quality and mental health among college students. Specifically, the study aims to:

Assess the relationship between sleep quality and mental health.
Explore potential gender differences in mental health outcomes.

Hypothesis: Grounded on the objectives outlined above, the subsequent hypotheses are proposed: H1: There is a negative relationship between sleep quality and mental health among college students.

H2: There is a significant difference between the mental health scores of male and female students.

METHODOLOGY

In this empirical study, the data was collected through online questionnaire which was filled by the participants who come under the category of university students. Sleep condition was measured with "Pittsburgh Sleep Quality Index", a 19- item self-report questionnaire frequently used to examine different aspects of sleep quality and disturbances over the last month. For higher PSQI scores, sleep quality is worse. Mental health was assessed using the 18-item "Psychological Wellbeing Scale developed by Ryff's". This scale captures six dimensions of psychological wellbeing: "autonomy", "environmental" "mastery", "personal growth", "positive relations with others", "purpose in life", and "self-acceptance". The items are rated on a 7-point Likert-type scale and greater scores indicate a higher level of psychological wellbeing.

SAMPLE

The study included a sample of 100 college students ("50 males and 50 females") recruited from several universities using convenience sampling. Participants were aged between 18 and 25 years and currently enrolled in undergraduate, post graduate programs.

Variable	Frequency	Percentage
MALE	50	50%
FEMALE	50	50%

TABLE1 Frequencies of demographics for sample

PSYCHOLOGICAL TOOLS

This study used two questionnaire namely: "Pittsburgh Sleep Quality Index (PSQI)" which was used to measure sleep quality of the participants and "18-item version of Ryff's Psychological Wellbeing Scale" was used to assess the mental health of the participants. The "Pittsburgh Sleep Quality Index (PSQI)" is a self-rated questionnaire that assesses sleep quality and disturbances over a 1-month period. The PSQI has 19

items that generate seven "component" scores, which are then added together to produce a universal total. The seven elements are:

- “Subjective sleep quality”
- “Sleep latency”.
- “Sleep duration”.
- “Habitual sleep efficiency”.
- “Sleep disturbances”.
- “Use of sleep medication”.
- “Daytime dysfunction”.

Each element score ranges from “0 to 3”, with 3 indicating the greatest dysfunction. The global score ranges from “0 to 21”, with higher scores signifying more sleep disturbance. A score of 5 or higher is considered a significant sleep disturbance. The PSQI is one of the most widely used sleep questionnaires. It should take between 5 and 10 minutes to complete. The scale's psychometric qualities have been evaluated in much research. The original study indicated an internal reliability of a =.83, a test-retest reliability of.85, an accuracy of 89.6%, and a preciseness of 86.5%.

“Ryff's Psychological Wellbeing Scale”, an 18-item self-report test, assesses six characteristics of psychological well-being:

Autonomy
Environmental mastery
Self-acceptance
Personal development.
Positive relationships with others.
purpose in life.

According to a 2006 study, the Swedish “18-item version of Ryff's Psychological Wellbeing Scale” outperforms the original 120-item version in terms of overall internal consistency coefficients. Most studies indicate that the 18-item version is generally valid and reliable when assessing Ryff's comprehensive approach to psychological well-being..

The “Ryff Scales of Psychological Well-Being” have standard internal consistency, with alpha values ranging from .93 to .86. Test-retest reliability over six weeks ranges from .88 to .81.

The 18-item Psychological Wellbeing Scale takes 3 to 5 minutes to complete.

STATISTICAL ANALYSIS

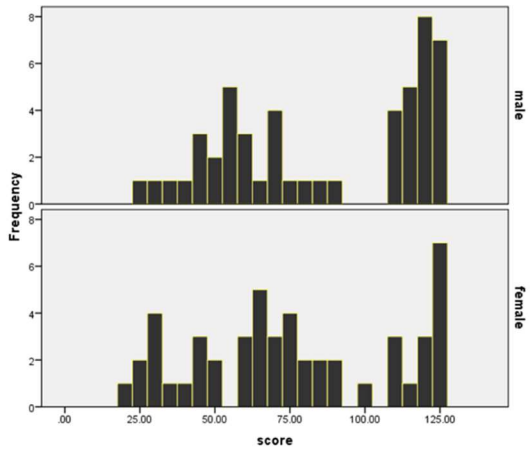
In this study, survey data were evaluated using, IBM SPSS version 22.0. Two major statistical tools were used in order to evaluate the hypothesis mentioned earlier that is t-test and Pearson correlation coefficient. The result for each test is mentioned below in form of tables, graphs and discussion. t test was used to know

whether there is a difference exists among male and female mental health score. Pearson correlation was used to find out any relationship exists between sleep quality and mental health.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
score	Equal variances assumed	1.022	.315	1.601	98	.113	10.68000	6.66988	-2.55617	23.91617
	Equal variances not assumed			1.601	97.999	.113	10.68000	6.66988	-2.55617	23.91617

TABLE 2 The above table represents the significant difference between male and female mental health score t=1.601



GRAPH1: The following graphs shows histogram which depicts male and female differences in psychological well-being scores.

Variable	Mean	Pearson's r
SLEEP INDEX	11.75	
		r=-0.95, p<0.05
PSYCHOLOGICAL WELLBEING	29.91	r=-0.95, p<0.05

Table3 the above table represents the correlation between "sleep quality and mental health" of college students along with their mean score.

Results

The results signified a strong negative correlation, r= -0.95, p<0.05, between sleep quality and mental health among college students, confirming Hypothesis 1. Thus, this indicates that as sleep quality decreases, mental health decreases. Therefore, students whose sleep quality is lower experience more adverse psychological effects. Furthermore, a significant mean difference, t=1.601, p<0.05, between male and female students was also found to uphold Hypothesis 2. Female students have better mental health than male students. Hence, gender plays a role in the mental health status of college students. Discussion These results emphasize the role that sleep quality plays on college student mental health. Programs that increase sleep hygiene and promote good sleep patterns could

potentially lead to better mental health and academic success. They also highlight how important it is to consider that male and female students experience mental health differently. Therefore, interventions should be tailored to meet the needs of both male and female college students.

Discussion

The present study confirms the relationship of sleep quality and psychological well-being among college students. As expected, the study found a strong negative correlation between sleep quality and mental health status. The results are consistent with previous research pointing to the harmful effects that poor quality sleep can produce in mental health.

These findings indicate that sleep disturbances should be addressed, and healthy sleep habits should be promoted as part of an intervention for mental health in college students. The data also found gender differences in the psychology well-being scores. Female college students consistently reported less psychological well-being than male students, indicating that they could be more susceptible to the negative psychological consequences of poor quality sleep.

The relationship between sleep quality and mental health is therefore bidirectional—each influences the other. Therefore, they could form a premorbid factor for the development of mental health disorders, also enhancing or opposing the existing symptoms and signs or serving as risk factors for vulnerability toward similar problems in the future (Roberts & Duong, 2013). On the other side, mental health diseases like anxiety and depression intrude into sleep patterns and result in insomnia, hypersomnia, or even fragmented sleep (Baglioni et al., 2011). This complex bidirectional relationship is one of pivotal importance to understand, as it may lend itself to interventions that focus on the improvement of sleep and mental health overall.

These results are consistent with the evidence that female college students have higher levels of stress and are more likely to take unhealthy measures to cope with it, as well as to suffer from emotional problems and psychological disorders (“American College health Association, 2019”). Meaningful gender differences in the correlates of sleep and mental health within our sample call for the inclusion of gender in conceptual models and the development of interventions.

Given these differences, one-size-fits-all mental health programs for college students

that do not account for gender, may not capture the true solutions and alternatives that enhance well-being, mental health, and the positive effects of sleep and strategies to improve sleep quality across gender.

The findings further suggest that interventions might benefit from a multi-level approach, including a combination of universal and gender-specific interventions. Theories and interventions that target improvements in sleep hygiene and stress management for the entire college student population likely have value, but they may lack sufficient power to bring about change in absence of gender-specific strategies or broader, systemic intervention. Addressing the systemic elements of college life, such as academic strain, availability of social networks, and campus life might require the involvement of many actors within the institution.

Beyond these immediate conclusions, this study also points to the broader implications of campus mental health promotion. Although efforts to improve sleep quality may be more obviously relevant to students' overall mental health, interventions need to be contextualized in a more comprehensive, multi-level approach to college student mental health (Czyz et al., 2012), in which poor sleep quality is but one of many problems that students face. Previous studies have highlighted many other factors that are associated with college student mental health, such as high levels of academic stress, potentially inadequate social support networks, and insufficient access to mental health resources (Eisenberg et al., 2007). Thus, large-scale interventions that target other aspects of the student's life, or systemic campus-wide approaches to mental health that create a culture in which mental health is valued and students feel a sense of belonging and connectedness to the university, are likely more effective in reducing mental health pathology among college students.

Conclusion

In conclusion this study intends to uncover the¬ link between good sleep habits and body/mind health for college¬ students. Figuring out what affects student well-being is a major goal for universities trying to look out for their students. The aim here¬ also stresses how getting enough sleep is a big wellness factor for students. The findings also looking into whether gender makes a difference in any of this. Basically, if colleges uses this findings they can make intervention policies, that could really help out a lot. Colleges should absolutely prioritize student wellness—not only does

this show students their own health matters, but it helps build the inner strength needed to get through tough times.

Gender Differences: There is, in fact, preliminary evidence that suggests gender as a moderator to the relations of sleep quality with mental health among students in college. For example, female students at colleges experience higher levels of stress, anxiety, and depression in terms of proportions than do male students ("American College Health Association, 2019"). The later gender differences are in hormonal changes, social expectation, and coping mechanisms that may be counted towards the gendered differential mental health outcomes (Krishnan & Collop, 2006). Furthermore, it is likely that such gender differences in sleep patterns and vulnerability to sleep disorders will fuel mental health disparities amidst college students (Troxel et al., 2014). One that acknowledges such differences in gender for interventions that relate to needs and experiences particular to male and female students.

Need for Intervention: The colleges can actually use the report outcomes, which will play a vital part of the strategies that will be implemented in the students' wellness pursuit. Interventions that improve the quality of sleep are effective, like CBT-I, mindfulness interventions, and sleep education. These interventions can help to ensure that students sleep well, which in turn reduces the chances of mental health problems (Lund et al., 2010). Along these lines the campuses need to draft and incorporate mental health promotion policies into their campus-wide policies as well as programs while counselling services should be accessible as well. Lastly but certainly not the least, constructing a school atmosphere where student mental health is greatly esteemed seems to be extremely vital (Eisenberg et al., 2007). In that respect the women need to equally take account of gender-based factors while coming up with the intervention design and implementation as this is the only way to intentionally address the mental requirement of boys and girls.

Future Directions: The present study certainly added value with regard to the relation of sleep quality with gender and its effect on mental health among college students; however, there lie various future research orientations. Research needs to carry on with the longitudinal design to delve into the temporal relationships among sleep disturbances and outcomes related to mental health. Research of the kind to

explain mechanisms, which underlie gender differences in "the relationship between sleep quality and mental health among college students", is warranted to continue informing and providing further ground for appropriate targeted interventions and support strategies. The current study, therefore, is an area for potential promising future research, as the effectiveness testing of these gender-sensitive interventions aimed to enhance the quality of the mental health consequences of students.

LIMITATIONS

The study was limited to selected participants (100) and conclusion is drawn based on the result of few samples.

The survey was limited to only college students.

The survey was conducted within single geographical location and ethnicity i.e., Indians.

The study was unable to find the long-term effect of sleep patterns and it's link to mental health.

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