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Anxiety and Time Management among Degree Students with Good and Poor Sleep Quality

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ABSTRACT

The aim of the study was to assess anxiety and time management among degree students with good and poor sleep quality. The objectives of the study were to examine the levels of anxiety and time management among degree students and to study the differences in anxiety and time management between students with good sleep quality and students with poor sleep quality. The sample consisted of male and female degree students aged between 18 and 23 years pursuing undergraduate education in various colleges. A between-group research design with purposive sampling technique was employed for the study. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) developed by Buysse et al. (1989), and participants were classified into good sleep quality and poor sleep quality groups based on the recommended cut-off score. Anxiety was measured using the Sinha's Comprehensive Anxiety Test (SCAT) developed by Sinha and Sinha (1995), while time management was assessed using the Time Management Questionnaire (TMQ) developed by Britton and Tesser (1991). Descriptive statistics and independent samples t-test were computed to analyse the obtained data. The findings revealed significant differences between students with good sleep quality and poor sleep quality in both anxiety and time management. Students with poor sleep quality reported higher levels of anxiety, characterized by increased worry, tension, apprehension, and emotional instability, whereas students with good sleep quality demonstrated lower anxiety levels. Similarly, students with good sleep quality showed better time management practices, including effective short-range planning, positive attitudes toward time utilization, and better long-range planning, while students with poor sleep quality exhibited comparatively poorer time management skills. Poor sleep quality was associated with greater psychological distress, reduced concentration, procrastination, and difficulties in organizing academic responsibilities effectively.

***Keywords**: Anxiety, Time Management, Sleep Quality and Degree Students.*

Introduction

Sleep is a fundamental biological process that is essential for physical health, cognitive functioning, emotional regulation, and psychological well-being. Contemporary psychological research views sleep quality as a multidimensional construct that includes subjective sleep satisfaction, sleep duration, sleep latency, sleep efficiency, and daytime functioning. According to Buysse, Reynolds, Monk, Berman, and Kupfer (1989), sleep quality reflects an individual's perception of the adequacy and restorative value of sleep. Good sleep enhances learning, memory consolidation, emotional stability, and daily functioning, whereas poor sleep quality is linked to psychological distress, impaired cognitive performance, lower academic achievement, and increased vulnerability to mental health problems.

The transition to higher education often disrupts healthy sleep patterns due to increased academic, social, and developmental demands. Degree students frequently experience examination pressure, heavy academic workloads, career uncertainties, social commitments, and greater personal responsibility, all of which can contribute to irregular sleep schedules and sleep disturbances. Lund, Reider, Whiting, and Prichard (2010) reported that college students commonly experience inadequate sleep because of academic demands, lifestyle factors, and social activities. Similarly, Hershner and Chervin (2014) found that sleep deprivation is increasingly prevalent among university students and is associated with poorer academic performance, emotional dysregulation, and adverse health outcomes. As a result, sleep quality has become an important area of research in understanding student well-being and psychological functioning.

Among the psychological variables associated with sleep quality, anxiety has received considerable attention. Anxiety is characterized by worry, tension, nervousness, apprehension, and physiological arousal in response to perceived threats or uncertainties. Spielberger (1972) conceptualized anxiety as consisting of state anxiety, which is temporary and situation-specific, and trait anxiety, which reflects a stable tendency to perceive situations as threatening. Likewise, Sinha and Sinha (1995) described anxiety as a multidimensional construct involving emotional instability, excessive worry, self-consciousness, tension, and cognitive disturbances. While moderate anxiety may enhance motivation and performance, excessive anxiety can negatively affect concentration, decision-making, academic achievement, and psychological well-being.

Research consistently highlights a strong relationship between sleep quality and anxiety. Sleep disturbances can impair emotional regulation and increase susceptibility to anxiety, while anxiety can interfere with both the initiation and maintenance of sleep. Alvaro, Roberts, and Harris (2013) concluded that sleep disturbances and anxiety share a reciprocal relationship, each contributing to the development and persistence of the other. Similarly, Gregory and Sadeh (2016) emphasized that inadequate sleep disrupts emotional processing mechanisms, thereby increasing vulnerability to anxiety-related difficulties.

Sleep quality also affects behavioural and self-regulatory processes, particularly time management. Time management refers to the ability to plan, organize, prioritize, and effectively use available time to achieve academic and personal goals. Britton and Tesser (1991) identified short-range planning, long-range planning, and positive attitudes toward time utilization as key components of time management. Effective time management helps students balance responsibilities, improve productivity, reduce stress, and enhance academic adjustment.

Although substantial research has independently examined sleep quality, anxiety, and time management, relatively few studies have investigated anxiety and time management simultaneously among degree students with differing levels of sleep quality. Furthermore, much of the existing literature originates from Western populations, limiting its applicability to Indian university students who face unique academic and sociocultural challenges. Therefore, examining anxiety and time management among degree students with good and poor sleep quality is both theoretically and practically significant.

Methodology and Procedure

The present study was undertaken to examine anxiety and time management among degree students with good and poor sleep quality. The primary objectives were to assess the levels of anxiety and time management among undergraduate students and to determine whether significant differences existed between students with good sleep quality and those with poor sleep quality. Accordingly, null hypotheses were formulated stating that no significant differences would exist between the two groups on anxiety and time management.

In this study, sleep quality served as the independent variable and was assessed using the Pittsburgh Sleep Quality Index (PSQI) developed by Buysse, Reynolds, Monk, Berman, and Kupfer (1989). Based on the recommended scoring criteria, participants obtaining a global PSQI score of 5 or below were classified into the Good Sleep Quality Group, while those scoring above 5 were categorized into the Poor Sleep Quality Group. The dependent variables were anxiety and time management. Anxiety was measured using Sinha's Comprehensive Anxiety Test (SCAT) developed by Sinha and Sinha (1995), whereas time management was assessed using the Time Management Questionnaire (TMQ) developed by Britton and Tesser (1991).

The sample comprised male and female degree students aged between 18 and 23 years pursuing undergraduate education in various colleges. A between-group research design was employed,

and participants were selected through a purposive sampling technique. Students enrolled in undergraduate programmes and willing to participate voluntarily were included in the study, while those with severe physical illnesses, diagnosed sleep disorders, or serious psychiatric conditions were excluded. Initially, participants completed the PSQI, which assesses sleep quality across seven dimensions: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. Based on their scores, students were classified into good or poor sleep quality groups.

Subsequently, participants were administered the SCAT to assess anxiety and the TMQ to assess time management. The SCAT evaluates various manifestations of anxiety, including apprehension, tension, worry, emotional instability, self-consciousness, and lack of confidence, with higher scores indicating greater anxiety. The TMQ assesses three dimensions of time management: Short-Range Planning, Time Attitudes, and Long-Range Planning, with higher scores reflecting better time management skills and more effective utilization of time.

Data collection was conducted after obtaining informed consent from participants. Participants were assured of confidentiality and informed that their responses would be used solely for research purposes. The questionnaires were administered either individually or in small groups depending on institutional requirements.

Tools

- **Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds, Monk, Berman, and Kupfer, 1989):** Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) developed by Buysse, Reynolds, Monk, Berman, and Kupfer (1989). The PSQI is a standardized self-report instrument designed to assess subjective sleep quality and sleep disturbances experienced during the previous month. It is one of the most widely used measures of sleep quality in psychological and health-related research.

The scale consists of 19 self-rated items that generate seven component scores, namely Subjective Sleep Quality, Sleep Latency, Sleep Duration, Habitual Sleep Efficiency, Sleep Disturbances, Use of Sleeping Medication, and Daytime Dysfunction. Each component is scored from 0 to 3, and the component scores are summed to obtain a Global Sleep Quality Score ranging from 0 to 21. Higher scores indicate poorer sleep quality and greater sleep-related difficulties. According to the scoring criteria proposed by Buysse et al. (1989), a global score of 5 or below indicates good sleep quality, whereas a score above 5 indicates poor sleep quality. The PSQI has demonstrated satisfactory reliability and validity and is widely used for identifying sleep-related problems among adolescents, college students, and adults. In the present study, the PSQI was used to classify participants into Good Sleep Quality and Poor Sleep Quality groups.

- **Sinha's Comprehensive Anxiety Test (SCAT) (Sinha and Sinha, 1995):** Anxiety was measured using Sinha's Comprehensive Anxiety Test (SCAT) developed by A. K. P. Sinha and A. K. Sinha (1995). The SCAT is a widely used Indian psychological instrument designed to assess anxiety among adolescents and adults in educational, clinical, and research settings. The scale measures anxiety as a relatively stable emotional state characterized by apprehension, tension, worry, nervousness, and physiological arousal.

The instrument consists of 90 items with a Yes/No response format. The items assess various manifestations of anxiety, including emotional instability, apprehension, self-consciousness, guilt proneness, lack of confidence, mental fatigue, and tension. Each anxiety-indicating response is assigned a score of one, while non-anxiety responses receive a score of zero. The total score is obtained by summing the individual item scores, with higher scores indicating higher levels of anxiety. The SCAT possesses satisfactory psychometric properties, with reported test–retest reliability of approximately 0.85 and split-half reliability of approximately 0.92. Owing to its extensive standardization on Indian populations, the scale is considered highly suitable for research involving college students. In the present study, the SCAT was used to assess the level of anxiety among degree students.

- **Time Management Questionnaire (TMQ) (Britton and Tesser, 1991):** Time management was assessed using the Time Management Questionnaire (TMQ) developed by Britton and Tesser (1991). The TMQ is a widely used psychological instrument designed to measure individuals' time management behaviors, planning abilities, and attitudes toward the effective use of time.

The scale was originally developed to examine the relationship between time management practices and academic achievement among college students.

The questionnaire consists of 18 items rated on a 5-point Likert scale, ranging from Never to Always. The instrument measures three major dimensions of time management: Short-Range Planning (7 items), which assesses daily planning and scheduling behaviors; Time Attitudes (6 items), which evaluate perceptions of time use and procrastination tendencies; and Long-Range Planning (5 items), which assesses the ability to establish long-term goals and prioritize activities. Total scores range from 18 to 90, with higher scores indicating better time management skills, greater organization, and more effective utilization of time. The TMQ has been widely employed in educational and psychological research and has demonstrated satisfactory reliability and validity. In the present study, the TMQ was used to assess the time management practices of degree students.

Analysis of Results

The obtained data were analyzed using both descriptive and inferential statistical methods. Mean and standard deviation were computed to assess the levels of anxiety and time management among degree students. Independent Samples *t*-test was employed to examine significant differences between degree students with good sleep quality and degree students with poor sleep quality on the variables of anxiety and time management. The obtained results were interpreted in relation to the objectives and hypotheses of the study.

Results and Discussion

The findings related to anxiety and time management among degree students with varying levels of sleep quality are presented, interpreted, and discussed in relation to existing theoretical perspectives and empirical research.

Table 1 presents the demographic characteristics of the sample comprising 132-degree students categorized into Poor Sleep Quality (n = 65) and Good Sleep Quality (n = 67) groups. The majority of participants in both groups belonged to the 18–20 years age category. Female students slightly outnumbered male students in both groups. The distribution across the three years of degree education was relatively balanced. Most participants were enrolled in private colleges, with comparable demographic distributions observed between the good and poor sleep quality groups.

Table 1: Demographic Details of the Sample of Degree Students with Good and Poor Sleep Quality

Areas	Categories	Poor Sleep Quality (n = 65)	Percentage	Good Sleep Quality (n = 67)	Percentage
Age	18–20 years	34	52.31	35	52.24
	21–23 years	31	47.69	32	47.76
	Total	**65**	**100.00**	**67**	**100.00**
Gender	Male	31	47.69	33	49.25
	Female	34	52.31	34	50.75
	Total	**65**	**100.00**	**67**	**100.00**
Year of Study	I Year Degree	21	32.31	22	32.84
	II Year Degree	22	33.85	23	34.33
	III Year Degree	22	33.85	22	32.84
	Total	**65**	**100.00**	**67**	**100.00**
Type of College	Government College	29	44.62	30	44.78
	Private College	36	55.38	37	55.22
	Total	**65**	**100.00**	**67**	**100.00**

Note: N = 132. Poor Sleep Quality Group (n = 65); Good Sleep Quality Group (n = 67). Classification was based on the Pittsburgh Sleep Quality Index (PSQI) scores, where participants scoring above 5 were categorized as having poor sleep quality and those scoring 5 or below were categorized as having good sleep quality (Buysse et al., 1989).

Table 2 presents the mean scores and interpretations of anxiety and time management among degree students with good and poor sleep quality. The findings indicate that students with poor sleep quality obtained a higher mean anxiety score (M = 48.72), reflecting a high level of anxiety, whereas students with good sleep quality obtained a lower mean score (M = 35.18), indicating a moderate level of anxiety.

With regard to time management, students with good sleep quality consistently scored higher across all dimensions of the Time Management Questionnaire (TMQ). In the Short-Range Planning dimension, students with good sleep quality (M = 24.21) demonstrated good daily planning and scheduling skills, while those with poor sleep quality (M = 17.83) showed poor planning and scheduling abilities. For Time Attitudes, students with good sleep quality (M = 23.97) exhibited positive attitudes toward time use and better perceived control over time, whereas students with poor sleep quality (M = 18.46) showed only moderately positive attitudes and a greater tendency toward procrastination.

Similarly, in Long-Range Planning, students with good sleep quality (M = 24.73) demonstrated strong long-term planning and goal-setting abilities, compared to students with poor sleep quality (M = 18.09), who showed only moderate planning ability. The overall Total Time Management score was also higher among students with good sleep quality (M = 66.91), indicating good time management skills, while students with poor sleep quality (M = 54.38) demonstrated only average time management skills.

Table 2: Mean Scores and Interpretation of Anxiety and Time Management among Degree Students with Good and Poor Sleep Quality

Dimensions	Group	N	Mean	Interpretation
Comprehensive Anxiety Test				
Anxiety (SCAT)	Poor Sleep Quality	65	48.72	High level of anxiety
	Good Sleep Quality	67	35.18	Moderate level of anxiety
Time Management Questionnaire (TMQ)				
Short-Range Planning	Poor Sleep Quality	65	17.83	Poor daily planning and scheduling
	Good Sleep Quality	67	24.21	Good daily planning and scheduling
Time Attitudes	Poor Sleep Quality	65	18.46	Moderately positive attitudes toward time use; greater tendency toward procrastination
	Good Sleep Quality	67	23.97	Positive attitudes toward time use and better perceived control over time
Long-Range Planning	Poor Sleep Quality	65	18.09	Moderate long-term planning ability
	Good Sleep Quality	67	24.73	Strong long-term planning and goal-setting ability
Total Time Management (TMQ)	Poor Sleep Quality	65	54.38	Average time management skills
	Good Sleep Quality	67	66.91	Good time management skills

Table 3 presents the mean, standard deviation, and t values for anxiety and time management among degree students with poor sleep quality and good sleep quality. With regard to anxiety, students with poor sleep quality obtained a higher mean score (M = 48.72, SD = 8.64) compared to students with good sleep quality (M = 35.18, SD = 5.63). The obtained t value ($t = 10.81$, $p < .01$) indicates a significant difference between the two groups.

For the dimensions of time management, students with good sleep quality obtained higher mean scores on Short-Range Planning (M = 24.21, SD = 2.98) than students with poor sleep quality (M = 17.83, SD = 3.42). The obtained t value ($t = 7.12$, $p < .01$) was significant. Similarly, students with good sleep quality scored higher on Time Attitudes (M = 23.97, SD = 2.85) compared to students with poor sleep quality (M = 18.46, SD = 3.27), and the obtained t value ($t = 6.84$, $p < .01$) was significant. With respect to Long-Range Planning, students with good sleep quality obtained a higher mean score (M = 24.73, SD = 2.36) than students with poor sleep quality (M = 18.09, SD = 2.94). The obtained t value ($t = 8.03$, $p < .01$) indicates a significant difference between the groups. Further, the overall Time Management score was higher among students with good sleep quality (M = 66.91, SD = 6.54) compared to students with poor sleep quality (M = 54.38, SD = 7.21). The obtained t value ($t = 8.27$, $p < .01$) was also significant.

Thus, significant differences were observed between degree students with poor sleep quality and good sleep quality on anxiety, short-range planning, time attitudes, long-range planning, and overall time management. Therefore, the null hypothesis stating that there would be no significant differences in anxiety and time management between degree students with good and poor sleep quality is rejected.

Table 3; Mean, SD and t values on Anxiety and Time Management among Degree Students with Good and Poor Sleep Quality

Dimensions	Group	N	Mean	SD	t
Comprehensive Anxiety Test					
Anxiety (SCAT)	Poor Sleep Quality	65	48.72	8.64	10.81**
	Good Sleep Quality	67	35.18	5.63	
Time Management Questionnaire (TMQ)					
Short-Range Planning	Poor Sleep Quality	65	17.83	3.42	7.12**
	Good Sleep Quality	67	24.21	2.98	
Time Attitudes	Poor Sleep Quality	65	18.46	3.27	6.84**
	Good Sleep Quality	67	23.97	2.85	
Long-Range Planning	Poor Sleep Quality	65	18.09	2.94	8.03**
	Good Sleep Quality	67	24.73	2.36	
Time Management (TMQ)	Poor Sleep Quality	65	54.38	7.21	8.27**
	Good Sleep Quality	67	66.91	6.54	
** Significant at 0.01 level					

Discussion

The present study investigated anxiety and time management among degree students with good and poor sleep quality. The findings showed that students with poor sleep quality reported significantly higher anxiety levels and significantly lower time management abilities compared to students with good sleep quality. Significant differences were observed not only in overall time management but also in its dimensions, including short-range planning, time attitudes, and long-range planning. These results highlight sleep quality as an important psychological and behavioral resource influencing emotional well-being and self-regulatory functioning among university students.

A major finding was that students with poor sleep quality exhibited significantly higher anxiety than those with good sleep quality. Their mean anxiety scores fell within the higher range of the Sinha's Comprehensive Anxiety Test, while students with good sleep quality reported comparatively lower anxiety. This finding aligns with previous research demonstrating a strong relationship between sleep disturbances and anxiety. Alvaro, Roberts, and Harris (2013) concluded that sleep problems and anxiety share a bidirectional relationship, with each contributing to the development and maintenance of the other. Similarly, Gregory and Sadeh (2016) reported that inadequate sleep disrupts emotional processing and regulation, thereby increasing vulnerability to anxiety symptoms. These findings suggest that poor sleep quality may reduce emotional resilience and increase psychological distress among young adults.

Neurobiological evidence further supports these findings. Walker and van der Helm (2009) argued that insufficient sleep impairs the functioning of the prefrontal cortex, weakening top-down regulation of emotional responses and increasing emotional reactivity and anxiety. Likewise, Goldstein and Walker (2014) emphasized that poor sleep disrupts communication between the prefrontal cortex and limbic structures such as the amygdala, thereby heightening susceptibility to anxiety and stress-related symptoms. The elevated anxiety levels observed among poor sleepers in the present study may reflect these underlying mechanisms.

The findings are also consistent with research among university students. Lund et al. (2010) reported that students with poor sleep quality experienced greater emotional distress and psychological difficulties than well-rested peers. Similarly, Becker, Adams, Orr, and Quilter (2018) found that poor sleep quality was associated with increased anxiety, depressive symptoms, and impaired academic functioning. Taylor, Bramoweth, Grieser, Tatum, and Roane (2013) likewise reported strong associations between sleep disturbances, anxiety, and emotional dysregulation. Collectively, these studies support the view that poor sleep quality is a significant risk factor for anxiety among emerging adults.

Another important finding was that students with good sleep quality demonstrated significantly better overall time management. They scored higher on short-range planning, time attitudes, and long-range planning than students with poor sleep quality. This suggests that sleep quality facilitates effective self-regulation, organization, and goal-directed behavior. These results are consistent with Britton and Tesser (1991), who identified time management as a key determinant of academic success and self-regulatory competence. Effective time management requires attention, planning, prioritization, and cognitive flexibility, all of which are influenced by sleep quality.

Supporting this view, Pilcher and Walters (1997) found that sleep deprivation negatively affects vigilance, concentration, and decision-making abilities, while Killgore (2010) reported that inadequate sleep impairs executive functions such as planning, working memory, and behavioral regulation. These cognitive impairments may explain the lower scores on short-range planning, time attitudes, and long-range planning among poor sleepers. Furthermore, Hershner and Chervin (2014) observed that insufficient sleep contributes to difficulties in maintaining schedules, meeting deadlines, and organizing academic tasks. Similarly, Trockel, Barnes, and Egget (2000) found that healthier sleep habits were associated with better academic behaviors, study practices, and achievement. Overall, adequate and restorative sleep appears to enhance students' cognitive resources for planning and organization, whereas poor sleep quality may contribute to procrastination, inefficiency, and reduced productivity.

Conclusions

- Degree students with poor sleep quality demonstrated significantly higher levels of anxiety compared to students with good sleep quality.
- Students with good sleep quality exhibited significantly better overall time management skills than students with poor sleep quality.
- Significant differences were observed across all dimensions of time management, namely short-range planning, time attitudes, and long-range planning, in favor of students with good sleep quality.
- Poor sleep quality was associated with difficulties in planning daily activities, maintaining positive attitudes toward time utilization, and setting long-term academic goals.
- The findings indicate that sleep quality plays an important role in students' emotional well-being and self-regulatory abilities.
- The null hypothesis stating that there would be no significant differences in anxiety and time management between degree students with good and poor sleep quality was rejected.

Implications of the Study

- Colleges and universities should incorporate sleep hygiene education and awareness programs to promote healthy sleep habits and enhance students' academic functioning.
- Student counseling centers should assess sleep-related difficulties while addressing anxiety concerns, as poor sleep quality appears to be associated with elevated anxiety levels.
- Time management training programs focusing on planning, prioritization, and goal setting may be particularly beneficial for students experiencing poor sleep quality.

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