

**Cause & Effect of Sleep Deprivation on Students of
Professional Courses in Thiruvananthapuram**

*A Dissertation submitted to the University of Kerala in Partial Fulfilment
of Requirements for the Master of Social Work Degree Examination*

SUBMITTED BY

Name: Mr. FELIX MATHEWS

Candidate Code: LC24PSW10

Subject Code: SW 547



**DEPARTMENT OF SOCIAL WORK
LOYOLA COLLEGE OF SOCIAL SCIENCES (AUTONOMOUS)
SREEKARIYAM, THIRUVANANTHAPURAM**

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CERTIFICATE OF APPROVAL

This is to certify that this dissertation entitled **“Cause & Effect of Sleep Deprivation on Students of Professional Courses in Thiruvananthapuram”** is a record of genuine work done by Mr. FELIX MATHEWS, fourth semester Master of Social Work student of this college under my supervision and guidance and that it is hereby approved for submission.

10-07-2026

Thiruvananthapuram

Dr. Sabu P Thomas

Research Dissertation Supervisor

Department of Social Work

Loyola College of Social Sciences, (Autonomous)

Sreekariyam, Thiruvananthapuram

Dr. Francina PX

HoD, Department of Social Work

Loyola College of Social Sciences, (Autonomous)

Sreekariyam, Thiruvananthapuram

Dr. Prakash Pillai. R

Principal

Loyola College of Social Sciences, (Autonomous)

Sreekariyam, Thiruvananthapuram.

DECLARATION

I, **FELIX MATHEWS**, do hereby declare that the dissertation “**Cause & Effect of Sleep Deprivation on Students of Professional Courses in Thiruvananthapuram**” is the result of my original research conducted during the academic years 2024-2026. This work is submitted to the University of Kerala as part of the requirements for the Master of Social Work Degree Examination. I confirm that it has not been previously submitted for any other degree, diploma, fellowship, or similar academic recognition.

Sreekariyam

FELIX MATHEWS

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ABSTRACT

Sleep deprivation has become an increasingly important public health concern among college students especially those pursuing academically demanding professional courses. The present study titled Impact of Sleep Deprivation on Students of Professional Courses in Thiruvananthapuram, sought to examine the sleep patterns of professional course students, identify the major factors contributing to sleep deprivation, assess its effects on academic performance, cognitive functioning, and psychological well-being, and explore the association between sleep deprivation and selected socio-demographic characteristics. The study adopted a quantitative research approach with a descriptive correlational research design. A total of 67 students from engineering, medicine, law, social work, nursing, and MBA programmes in aided colleges of Thiruvananthapuram district were selected using stratified random sampling. Data were collected through a structured questionnaire and analysed using SPSS with frequency distribution, percentage analysis, Cronbach's alpha, Chi-square test, and Spearman's rank correlation.

The findings revealed that 68.6% of respondents slept for less than six hours per night, while nearly half reported sleeping after midnight. Academic factors such as examinations, assignments, heavy workload, academic stress, and late-night studying were the major contributors to sleep deprivation. Late-night studying showed a significant negative correlation with sleep duration ($r = -0.279$, $p = 0.022$), and place of stay was significantly associated with sleep duration and sleep quality ($p = 0.036$). Sleep deprivation adversely affected classroom attention, memory, concentration, and psychological well-being, with irritability, lack of motivation, and increased stress emerging as the most common effects. The study highlights the need for institutional interventions promoting healthy sleep practices, balanced academic schedules, and mental health support for professional course students.

Keywords: Sleep deprivation, professional course students, academic performance, psychological well-being, sleep patterns, academic stress, Thiruvananthapuram, screen time.

CHAPTER I

INTRODUCTION

1. CHAPTER I: INTRODUCTION

1.1. Introduction

Sleep is a fundamental biological process that plays a crucial role in maintaining physical health, cognitive functioning, emotional stability, and overall well-being. Adequate sleep is essential for memory consolidation, learning, attention, decision-making, and the effective functioning of various physiological systems. According to the National Sleep Foundation, young adults and adults require approximately seven to nine hours of sleep per night for optimal functioning. However, in today's fast-paced and technology-driven society, obtaining sufficient sleep has become increasingly difficult, especially among students pursuing professional courses.

Sleep deprivation refers to the condition of not obtaining enough sleep to meet an individual's physiological and psychological needs. It can occur due to reduced sleep duration, poor sleep quality, irregular sleep schedules, or frequent interruptions during sleep. Sleep deprivation has emerged as a significant public health concern affecting people across all age groups. Among college students, the problem has become particularly prominent due to increasing academic demands, competitive educational environments, extensive use of electronic devices, social commitments, and lifestyle changes. Students often sacrifice sleep to meet academic requirements, prepare for examinations, complete assignments, participate in extracurricular activities, or engage in social media and entertainment.

Professional course students are especially vulnerable to sleep deprivation because of the rigorous nature of their academic programmes. Courses such as medicine, nursing, engineering, law, social work, and other professional disciplines require intensive study schedules, practical training, internships, and continuous assessments. These academic pressures often result in irregular sleeping patterns and inadequate sleep duration. As a result, many students experience daytime sleepiness, difficulty concentrating, memory problems,

reduced academic performance, emotional distress, and decreased productivity. Research studies across the world have highlighted the adverse consequences of sleep deprivation on students. Inadequate sleep has been associated with poor concentration, impaired cognitive functioning, reduced academic achievement, increased stress levels, anxiety, irritability, and decreased motivation. Long-term sleep deprivation may also contribute to various physical health problems, including weakened immunity, obesity, cardiovascular disorders, and metabolic disturbances. The increasing dependence on smartphones, social media platforms, online learning environments, and digital entertainment has further intensified the issue by encouraging late-night screen exposure and delaying sleep onset.

In India, sleep deprivation among college students has become a growing concern due to changing lifestyles, academic competition, urbanisation, and technological advancements. Many students struggle to maintain healthy sleep habits while balancing educational responsibilities and personal commitments. Although awareness regarding the importance of sleep is increasing, sleep-related problems continue to remain common among university and college students. The issue demands greater attention because sleep is directly linked to students' academic success, mental health, and overall quality of life.

Thiruvananthapuram, being an educational hub of Kerala, accommodates a large number of students enrolled in various professional courses. Students in the city often face multiple challenges such as academic workload, examination pressure, long travel durations, hostel living conditions, excessive screen time, and lifestyle factors that may negatively affect their sleeping patterns. Understanding the extent of sleep deprivation and its impact on students is therefore essential for developing appropriate interventions and promoting healthy sleep practices among young adults.

The present study, titled “Cause & Effect of Sleep Deprivation on Students of Professional Courses in Thiruvananthapuram”, seeks to examine the sleeping patterns of professional course students, identify the factors contributing to sleep deprivation, and analyse its effects on academic performance and psychological well-being. The study aims to generate empirical evidence regarding the prevalence and consequences of sleep deprivation among

students and contribute to the development of strategies that can enhance students' health, academic effectiveness, and overall well-being.

1.2. Statement of the Problem

In the contemporary world, sleep deprivation has emerged as a significant public health concern affecting individuals across different age groups. Sleep is a fundamental biological necessity that supports physical health, cognitive functioning, emotional regulation, memory consolidation, and overall well-being. However, increasing academic demands, technological advancements, changing lifestyles, and social commitments have contributed to a decline in sleep duration and sleep quality, particularly among young adults and university students. According to the Center for Disease Control and Prevention, insufficient sleep is recognised as a major public health problem, with a substantial proportion of young adults failing to obtain the recommended seven to nine hours of sleep per night (CDC, 2022). The issue has become increasingly relevant among students pursuing higher education, where academic responsibilities often take precedence over healthy sleep practices. Students enrolled in professional courses experience unique academic and practical demands that increase their vulnerability to sleep deprivation. Professional education often requires extensive coursework, practical training, assignments, clinical postings, internships, project work, and continuous assessments. As a result, students frequently sacrifice sleep to meet academic expectations and performance standards. The widespread use of smartphones, social media platforms, online learning systems, and digital entertainment has further contributed to delayed sleeping schedules and poor sleep hygiene. Consequently, sleep deprivation has become a common phenomenon among university students worldwide.

Research evidence indicates that sleep deprivation has serious consequences for students. A systematic review and meta-analysis conducted among higher education students found that poor sleep quality is highly prevalent among university populations and is significantly associated with stress, anxiety, depression, emotional difficulties, and reduced academic functioning (Al Maqbali

et al., 2022). The review highlighted that inadequate sleep negatively affects concentration, attention, memory, learning capacity, and overall academic performance. Similarly, Gaultney (2010) reported that students experiencing sleep disturbances were more likely to experience daytime sleepiness, fatigue, impaired cognitive functioning, and poor academic outcomes. Another study found that sleep quality is closely associated with mental health and academic effectiveness among university students, emphasising the need to address sleep-related problems in higher education settings (Benham, 2021). Studies have further estimated that nearly 60% of college students experience poor sleep quality, while a significant proportion report regular sleep disturbances that interfere with their daily activities and educational performance (Al Maqbali et al., 2022).

In India, sleep deprivation among students has become an increasingly important issue due to intense academic competition, changing lifestyle patterns, and the growing influence of digital technology. A survey conducted by LocalCircles (2023) revealed that nearly 61% of Indians sleep for less than six hours per night, which is considerably lower than the recommended sleep duration. Studies conducted among college students in India have found that a substantial proportion of students suffer from inadequate sleep because of examination stress, academic workload, excessive smartphone usage, social media engagement, and irregular daily routines. These factors have resulted in increased levels of stress, reduced concentration, poor academic performance, and mental health concerns among students (Kaur & Bhardwaj, 2021).

Kerala is widely recognised for its high literacy rate and educational achievements. The state attracts a large number of students pursuing professional courses in disciplines such as medicine, nursing, engineering, law, management, social work, and allied sciences. Thiruvananthapuram, being the capital city of Kerala, serves as an important educational centre with numerous institutions offering professional education. Students in these institutions often encounter academic pressure, practical requirements, long study hours, hostel-related challenges, travel-related fatigue, and increased screen exposure. These circumstances may contribute significantly to sleep deprivation and its associated consequences. Despite the growing importance of student well-being and mental health, limited studies have specifically examined the impact of

sleep deprivation among students pursuing professional courses in Thiruvananthapuram.

The researcher selected this topic due to the increasing prevalence of sleep-related problems observed among professional course students. During interactions with students from various professional disciplines, concerns regarding inadequate sleep, daytime fatigue, reduced concentration, stress, and academic difficulties were frequently reported. Although several studies have examined sleep deprivation among students in different contexts, there remains a lack of focused research exploring the factors contributing to sleep deprivation and its impact on academic performance and psychological well-being among professional course students in Thiruvananthapuram. Therefore, the present study seeks to assess the sleep patterns of students pursuing professional courses, identify the major factors contributing to sleep deprivation, and examine its effects on academic performance and psychological well-being.

1.3. Background of the Study

As the modern world continues to progress through technological advancements and changing lifestyles, sleep deprivation has emerged as one of the major concerns affecting the health and well-being of individuals, especially young adults and students. Sleep plays an important role in maintaining physical health, cognitive functioning, emotional stability, memory consolidation, and learning ability. Despite its importance, studies suggest that an increasing number of students are not receiving adequate sleep due to academic pressure, excessive use of digital devices, changing lifestyle habits, and social commitments. According to the Center for Disease Control and Prevention (CDC), insufficient sleep has become a significant public health issue because of its association with various physical and psychological health problems (CDC, 2022).

Research conducted across different countries indicates that sleep deprivation is highly prevalent among university students. A systematic review and meta-analysis conducted by Al Maqbali et al. (2022) among higher education students found that poor sleep quality is common among university populations

and is associated with increased stress, anxiety, depression, and reduced academic functioning. The study identified that inadequate sleep negatively affects concentration, memory, learning capacity, and overall student well-being (Al Maqbali et al., 2022). Similarly, studies have shown that students experiencing sleep deprivation often report daytime sleepiness, fatigue, difficulty concentrating during classes, and reduced academic productivity.

The relationship between sleep quality and mental health has also gained considerable attention among researchers. A study conducted by Sajan et al. (2025) among young adults examined the association between sleep quality and psychological well-being. The study identified that poor sleep quality was significantly associated with higher levels of depression, anxiety, and stress among young adults. The findings highlighted that students experiencing inadequate sleep were more likely to report emotional distress and psychological difficulties compared to those with healthy sleeping patterns (Sajan et al., 2025).

In India, sleep deprivation among students has become increasingly common due to intense academic competition, extensive use of smartphones, social media engagement, examination pressure, and irregular lifestyle practices. Studies conducted among college students have identified poor sleep quality as a major concern affecting both academic performance and mental health.

Sleep deprivation has been linked with reduced concentration, impaired memory, poor classroom performance, emotional instability, and decreased motivation among students.

Kerala, known for its high literacy rate and educational achievements, has a large population of students pursuing professional education. Despite the state's progress in educational development, sleep-related problems continue to be reported among students. A study conducted among clinical postgraduate students in Kerala found that 62.7 percent of the participants experienced poor sleep quality. The study identified factors such as academic workload, clinical responsibilities, stress, lack of physical activity, and social anxiety as major contributors to sleep disturbances among students. The study further highlighted that poor sleep quality negatively affects cognition, learning ability, memory, concentration, and academic performance (Gopika et al.,

2025).

Thiruvananthapuram is one of the major educational centres in Kerala and accommodates a large number of students pursuing professional courses such as medicine, nursing, engineering, law, management, social work, and allied sciences. Students in these programmes often face demanding academic schedules, practical training requirements, assignments, examinations, internships, hostel-related challenges, and long hours of screen exposure. These factors may significantly influence sleeping patterns and contribute to sleep deprivation among students.

In this backdrop, studying the impact of sleep deprivation among students of professional courses in Thiruvananthapuram becomes crucial. The researcher observed through interaction with students that many experience inadequate sleep due to academic workload, examination stress, late-night study habits, smartphone usage, hostel environment, and travel-related factors. The present study attempts to understand the sleep patterns of professional course students, identify the factors contributing to sleep deprivation, and examine its impact on academic performance and psychological well-being. By focusing on students pursuing professional education in Thiruvananthapuram, the study aims to provide a better understanding of the challenges associated with sleep deprivation and contribute to the development of strategies that promote healthy sleep habits and overall student well-being.

1.4. Relevance and Significance

The study on the impact of sleep deprivation among students of professional courses in Thiruvananthapuram has the potential to significantly contribute towards understanding one of the major health concerns affecting students. Sleep deprivation has become increasingly common among young adults due to academic workload, examination pressure, extensive use of digital devices, and changing lifestyle patterns. Studies have shown that inadequate sleep is associated with poor academic performance, reduced concentration, stress, anxiety, depression, and decreased overall well-being (Al Maqbali et al., 2022). By examining the factors contributing to sleep deprivation and its effects on

students, the study can help in understanding the extent of the problem among professional course students.

One of the primary benefits of the study is the potential to create awareness regarding healthy sleeping habits among students. The findings of the study can provide valuable insights into how academic responsibilities, smartphone usage, social media engagement, hostel environment, and travel-related factors influence sleep patterns. Understanding these factors can encourage students to adopt healthier lifestyle practices and improve their sleep hygiene. Improved sleep quality can positively influence academic performance, concentration, memory, and learning ability, thereby contributing to the overall development of students.

In addition to academic benefits, the study may contribute towards improving the psychological well-being of students. Research has identified a significant relationship between poor sleep quality and higher levels of depression, anxiety, and stress among young adults (Sajan et al., 2025). Sleep deprivation can negatively affect emotional stability, motivation, and mental health, making students more vulnerable to psychological difficulties. By highlighting these issues, the study can help educational institutions recognise the importance of sleep as a component of student mental health and well-being.

The study can also assist educational institutions in developing programmes and interventions aimed at promoting healthy sleep habits among students. Colleges and universities can utilise the findings to introduce awareness programmes, counselling services, stress management initiatives, and time-management strategies that help students balance academic responsibilities with healthy lifestyle practices. Furthermore, the study may encourage institutions to address factors that contribute to sleep deprivation and support students in maintaining better physical and psychological health.

From the perspective of social work, the study provides an opportunity to understand the psychosocial factors associated with student well-being. Social workers working in educational institutions can use the findings to develop preventive and promotive interventions that address academic stress, mental health concerns, and lifestyle-related challenges faced by students. The study may also contribute to awareness campaigns and counselling programmes that

promote healthy behavioural practices among young adults.

Finally, the findings of the study can provide useful information for educators, mental health professionals, policymakers, and researchers working in the field of student welfare. A recent study conducted among clinical postgraduate students in Kerala reported that more than half of the students experienced poor sleep quality, highlighting the need for focused interventions and awareness regarding sleep health among students (Gopika et al., 2025). Therefore, the present study is relevant in understanding the impact of sleep deprivation among professional course students and promoting measures that enhance their academic performance, psychological well-being, and overall quality of life.

1.5. Chapterization

Chapter I: The first chapter attempts to provide an introduction to the study and various concepts related to sleep deprivation. The chapter discusses the statement of the problem, background of the study, relevance and significance of the study, objectives of the study, and chapterization. The chapter provides an understanding of the issue of sleep deprivation among professional course students and its relevance in the present educational scenario.

Chapter II: The second chapter attempts to deal with the review of literature available in international, national, and Kerala perspectives. The literature is categorised under various themes such as sleep deprivation and academic performance, sleep deprivation and cognitive functioning, sleep deprivation and psychosocial well-being, factors contributing to sleep deprivation, and interventions for improving sleep health among students. The chapter also discusses the theoretical framework and research gap identified from previous studies.

Chapter III: The third chapter discusses the methodology adopted by the researcher for conducting the study. It includes the title of the study, objectives, definition of concepts, details of the pilot study, research approach, research design, universe of the study, sampling design, data collection methods, pre-test, data analysis, ethical considerations, assumptions, limitations, and scope of the study.

Chapter IV: The fourth chapter presents the analysis and interpretation of the

data collected from the respondents. The chapter includes the socio-demographic profile of the respondents, sleep patterns and sleep disturbances among professional course students, factors contributing to sleep deprivation, impact of sleep deprivation on academic performance, psychological effects of sleep deprivation, and discussion of the findings in relation to the objectives of the study.

Chapter V: The fifth chapter deals with the major findings of the study followed by suggestions and conclusion. The chapter summarises the key findings related to sleep deprivation among professional course students and provides recommendations for improving sleep habits and promoting healthier academic environments. The final pages of the dissertation include the references, annexures, and the tools used for data collection in the study.

CHAPTER II: REVIEW OF LITERATURE

2. CHAPTER II: REVIEW OF LITERATURE

2.1. Summary of the Review of Literature

The review of literature reveals a consistent and well-documented relationship between sleep deprivation and its adverse effects on the academic, cognitive, psychological, and physical well-being of students across various educational settings. The studies reviewed span multiple countries and contexts, including India, Malaysia, Pakistan, Nigeria, and other regions, and collectively highlight the widespread prevalence of sleep deprivation as a growing concern among students in professional and higher education.

Several studies conducted in the Indian context have confirmed the high prevalence of sleep deprivation among students pursuing professional courses. Gopika et al. (2025) found that 62.7% of clinical postgraduate students in Kerala experienced poor sleep quality, with academic stress and clinical responsibilities being major contributing factors. Similarly, Sabu et al. (2025) reported that 63.7% of undergraduate dental students in Kerala had poor sleep quality, with significant negative associations with academic performance and health-related quality of life. Prasad et al. (2022) further documented the high prevalence of sleep deprivation among school-going adolescents in an urban setting in Kerala, identifying academic demands and excessive electronic device use as primary causes.

The reviewed studies collectively identify a range of academic, lifestyle, behavioral, and environmental factors contributing to sleep deprivation. Academic workload, examination stress, late-night studying, and adjustment to professional education are consistently identified as major academic contributors. Behavioral factors such as excessive internet use, mobile phone usage, and unhealthy lifestyle habits including caffeine consumption were also found to significantly disrupt sleep. Maithani, Prabhu, and Pant (2024), in their study of professional college students in South India, found that lifestyle habits, environmental conditions, and psychological stress were significantly associated with poor sleep quality and daytime sleepiness.

The impact of sleep deprivation on academic performance emerged as a central theme across multiple studies. Khan and Mobeen (2025) reported a significant negative correlation between sleep deprivation and academic motivation among university students. Akhigbe et al. (2026) found a strong positive correlation between sleep quality and academic and clinical performance among nursing students. Nor et al. (2025) similarly identified sleep deprivation as the most significant factor affecting academic performance among university students, noting its negative influence on concentration, motivation, and achievement.

The cognitive consequences of sleep deprivation were extensively documented across the reviewed studies. Ahmad et al. (2025) demonstrated that 24-hour sleep deprivation caused significant declines in attention, reaction time, memory performance, and psychomotor coordination among college students. Awan et al. (2025) further established that sleep deprivation impairs executive functions including planning, reasoning, judgment, and decision-making. Mohammed et al. (2025) reported that sleep-deprived medical students experienced significantly higher levels of memory complaints and cognitive difficulties, further confirming the detrimental impact of inadequate sleep on cognitive functioning.

The psychological and mental health consequences of sleep deprivation were equally significant findings across the literature. Rani et al. (2025) found that students experiencing sleep deprivation reported higher levels of psychological distress including stress, anxiety, and emotional instability. Mishra and Singh (2025) reported a significant association between poor sleep quality and increased anxiety among female university students. Anand et al. (2025) highlighted the relationship between sleep deprivation and depressive symptoms among first-year medical and dental students, while Sharma et al. (2025) confirmed the strong association between sleep disturbances and anxiety and depression across medical, dental, and nursing students in a multicentric study. Chellaiyan et al. (2025) further documented the burden of sleep deprivation among healthcare professionals, finding that 82.3% of participants were sleep deprived, with adverse effects on daytime functioning and well-being.

2.2. Introduction

The review of literature is a systematic examination of previous studies and scholarly works related to the research topic. It helps the researcher gain an understanding of the existing knowledge, identify research gaps, and establish a foundation for the present study. For the current research on “Causes and Effects of Sleep Deprivation among Students of Professional Courses in Thiruvananthapuram,” various studies related to sleep deprivation, sleep quality, academic performance, cognitive functioning, psychological well-being, and factors contributing to inadequate sleep were reviewed. These studies provide valuable insights into the prevalence, causes, and consequences of sleep deprivation among students and help in guiding the objectives and methodology of the present study.

In a study conducted by Gopika et al. (2025), the objective was to assess the sleep quality among clinical postgraduate students and identify the factors associated with poor sleep quality. The researchers adopted a cross-sectional study design and collected data using a structured questionnaire among clinical postgraduate students in Kerala, India. The study examined various factors such as academic workload, stress, social anxiety, physical activity, family relationships, and sleeping patterns. The findings revealed that 62.7% of the participants experienced poor sleep quality. The study identified that academic stress, clinical responsibilities, lack of physical exercise, social anxiety, and poor family relationships were significantly associated with sleep disturbances among postgraduate students. Students with severe stress were found to have a substantially higher risk of poor sleep quality compared to others. The researchers also reported that poor sleep quality negatively affected cognitive functions such as concentration, learning, memory, decision-making, and academic performance. Overall, the study highlighted that sleep deprivation is highly prevalent among clinical postgraduate students and emphasised the need for interventions aimed at improving sleep quality and psychological well-being among students.

In a study conducted by Rani et al. (2025) titled “Sleep Deprivation and Its Association with Psychological Distress among College Students: A Cross-

Sectional Observational Study” the objective was to examine the association between sleep deprivation and psychological distress among college students. The researchers adopted a cross-sectional observational research design and collected data from college students using structured assessment tools to evaluate sleep patterns and psychological distress. The study focused on understanding how inadequate sleep influences students’ mental health and emotional well-being. The findings revealed that students experiencing sleep deprivation were more likely to report higher levels of psychological distress, including symptoms of stress, anxiety, emotional instability, and reduced psychological well-being. The study identified sleep deprivation as a significant factor influencing students’ mental health and highlighted the negative consequences of inadequate sleep on emotional functioning and daily activities. Overall, the study emphasised that poor sleep quality and insufficient sleep are strongly associated with psychological distress among college students and underscored the need for interventions promoting healthy sleep habits to improve mental well-being among students.

2.3. Review of Literatures

In a study conducted by Prasad et al. (2022) titled “Sleep Deprivation Among School-Going Adolescents in an Urban Setting in Kerala, India: A Descriptive Study,” the objective was to assess the prevalence of sleep deprivation among school-going adolescents and identify the factors associated with inadequate sleep. The researchers adopted a descriptive cross-sectional research design and collected data from adolescents using a structured questionnaire that assessed sleep duration, sleep habits, lifestyle factors, and academic-related variables. The study involved school-going adolescents from an urban setting in Kerala. The findings revealed that sleep deprivation was highly prevalent among the participants, with a considerable proportion of students obtaining less than the recommended duration of sleep. Academic demands, late-night studying, excessive use of electronic devices, and poor sleep habits were identified as major contributors to sleep deprivation. The study further reported that inadequate sleep was associated with daytime sleepiness, reduced concentration, fatigue, and difficulties in academic functioning. Overall, the study highlighted that sleep deprivation is a significant concern among

adolescents and emphasized the importance of promoting healthy sleep practices and awareness regarding sleep hygiene among students.

In a study conducted by Chellaiyan, Nirupama, and Ravivarman (2025) titled “Burden of Sleep Deprivation among Healthcare Professionals in India: The SNORE Study,” the objective was to determine the burden of sleep deprivation and daytime sleepiness among healthcare professionals working rotational night shifts and to examine the relationship between hours of sleep and Epworth Sleepiness Scale (EPSS) scores. The researchers adopted a comparative hospital-based observational study design and collected data using a semi-structured questionnaire. The study involved 293 healthcare professionals selected through stratified random sampling from a tertiary healthcare facility after excluding individuals with factors that could interfere with sleep deprivation assessment. The findings revealed that the mean duration of self-reported sleep during the night-shift period was 5.43 ± 1.38 hours, and 82.3% of the participants were found to be sleep deprived, receiving less than seven hours of sleep. The study also reported that the burden of sleep deprivation was 30.7%, while 16.4% of the participants experienced excessive daytime sleepiness. Furthermore, EPSS scores decreased with an increase in sleep duration, indicating that individuals who slept longer were less likely to experience excessive daytime sleepiness. The study highlighted the significant burden of sleep deprivation among healthcare professionals working rotational night shifts and emphasized its adverse effects on daytime functioning, well-being, and occupational performance. The researchers recommended the implementation of strategies to improve sleep health and reduce the negative consequences of sleep deprivation among healthcare workers.

In a study conducted by Saha et al. (2025) titled “Comparison of Sleep Quality and Internet Addiction among Medical and Engineering Students in Eastern India,” the objective was to compare sleep quality and levels of internet addiction among medical and engineering students and examine the relationship between internet use and sleep disturbances. The researchers adopted a comparative cross-sectional study design and collected data from medical and engineering students using standardized assessment tools to

evaluate sleep quality and internet addiction. The study focused on understanding how excessive internet use influences sleeping patterns among students pursuing professional education.

The findings revealed that a considerable proportion of students experienced poor sleep quality and problematic internet use. Engineering students demonstrated comparatively higher levels of internet addiction, while poor sleep quality was prevalent among both groups. The study identified a significant association between internet addiction and sleep disturbances, indicating that excessive internet use contributes to delayed bedtime, reduced sleep duration, and poor sleep quality. Students with higher internet addiction scores were more likely to experience sleep-related problems, daytime fatigue, and difficulties in maintaining concentration and academic performance.

The study highlighted that internet addiction is an important behavioral factor contributing to sleep deprivation among professional course students. The researchers emphasized the need for awareness programmes and interventions aimed at promoting responsible internet usage and healthy sleep habits among students to improve their academic performance and overall well-being.

In a study conducted by Mishra and Singh (2025) titled “A Study on the Effect of Sleep Deprivation on Mental Health in University Girl Students,” the objective was to examine the effect of sleep deprivation on the mental health of female university students and to assess the relationship between sleep quality and anxiety levels. The researchers adopted a descriptive survey research design and selected 100 undergraduate and postgraduate female students from Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh, using a random sampling technique. Data were collected using the Effects of Sleep Deprivation on Mental Health Questionnaire, Anxiety Scale, and General Health Questionnaire (GHQ). Statistical techniques such as mean, standard deviation, and t-test were used to analyze the data. The findings revealed a significant difference in anxiety levels between undergraduate and postgraduate female students. The study further indicated that poor sleep quality and sleep deprivation were associated with increased anxiety levels, which adversely affected the mental health of female students. The researchers concluded that inadequate sleep contributes to psychological distress and

negatively influences emotional well-being among university students. Overall, the study highlighted the importance of maintaining healthy sleep patterns to promote better mental health and reduce anxiety among female university students.

In a study conducted by Muhammed and Abdul Sahib (2025) titled “Physiological and Psychological Factors Associated with Sleep Deprivation among High School Students,” the objective was to identify the physiological and psychological factors associated with sleep deprivation and examine their relationship with selected sociodemographic characteristics among high school students. The researchers adopted a quantitative cross-sectional research design and conducted the study from November 2024 to May 2025. A representative sample was selected from five randomly chosen public schools using stratified random sampling. Data were collected through a structured questionnaire developed from relevant literature and standardized tools. The study involved 327 high school students, of whom 229 students who reported sleep deprivation were included in the detailed analysis. The findings revealed that 76.9% of the students experienced physiological factors associated with sleep deprivation, including caffeine consumption, physical discomfort, and hunger before sleep. Furthermore, 54.6% of the participants reported psychological factors such as academic workload, personal concerns, emotional stress, and school-related pressures affecting their sleep patterns. The study found significant associations between psychological factors and variables such as gender, grade level, parental occupation, and socioeconomic status, whereas physiological factors showed no significant relationship with sociodemographic characteristics. Overall, the study highlighted that psychological stressors play a major role in sleep deprivation among adolescents and emphasized the need to address both psychological and behavioral factors to improve sleep health among students.

In a study conducted by Anand et al. (2025) titled “Sleep Deprivation and Its Association with Depression in First-Year Medical and Dental Students in Kanchipuram District, Tamil Nadu, India,” the objective was to assess the prevalence of sleep deprivation among first-year medical and dental students and examine its association with depression. The researchers adopted a cross-sectional study design and collected data from first-year medical and dental

students using standardized questionnaires to assess sleep patterns and depressive symptoms. The study focused on understanding how inadequate sleep influences the mental health of students pursuing professional education. The findings revealed that a considerable proportion of students experienced sleep deprivation and that inadequate sleep was significantly associated with symptoms of depression. Students who reported shorter sleep duration and poor sleep quality were more likely to exhibit depressive symptoms compared to those with adequate sleep. The study further identified academic workload, adjustment to professional education, and lifestyle changes as factors contributing to sleep deprivation among students. The researchers emphasized that sleep deprivation negatively affects emotional well-being and may increase the risk of mental health problems among students in professional courses.

The study highlighted the significant relationship between sleep deprivation and depression among first-year medical and dental students and stressed the importance of early identification and intervention to promote healthy sleep habits and psychological well-being among students.

In a study conducted by Khan and Mobeen (2025) titled "Sleep Deprivation, Academic Motivation and Quality of Life among University Students," the objective was to investigate the relationship between sleep deprivation, academic motivation, and quality of life among university students. The researchers adopted a descriptive correlational research design and collected data from 328 university students (167 males and 161 females) aged between 20 and 40 years through purposive sampling. Data were gathered using standardized instruments, including the Sleep Quality Scale, Academic Motivation Scale, and Quality of Life Scale. Statistical analyses such as descriptive statistics, Pearson correlation, linear regression, and independent sample t-tests were conducted using SPSS. The findings revealed a significant negative correlation between sleep deprivation and academic motivation ($r = -0.328$, $p < .001$) and between sleep deprivation and quality of life ($r = -0.424$, $p < .001$). The study also identified a positive correlation between academic motivation and quality of life ($r = 0.447$, $p < .001$). Female students reported higher levels of sleep deprivation compared to male students, while male

students demonstrated better quality of life scores. The study highlighted that sleep deprivation significantly reduces academic motivation and quality of life among university students and emphasized the importance of promoting healthy sleep habits and motivational support to improve students' academic and psychological well-being.

In a study conducted by Akhigbe et al. (2026) titled "The Influence of Sleep Quality on Academic and Clinical Performance among Student Nurses," the objective was to examine the relationship between sleep quality and academic as well as clinical performance among nursing students. The researchers adopted a descriptive cross-sectional survey design and collected data from 215 nursing students at Edo State College of Nursing Sciences using a validated self-structured questionnaire. The participants were selected through stratified random sampling, and the collected data were analysed using SPSS version 27. Descriptive statistics and Spearman's Rank Correlation were employed to determine the relationship between sleep quality and academic and clinical performance. The findings revealed a high prevalence of poor sleep quality among nursing students, characterised by difficulty initiating sleep and frequent nocturnal awakenings. The study reported a significant positive correlation between sleep quality and academic as well as clinical performance ($r_s = 0.976$, $p < .001$), indicating that students with better sleep quality demonstrated better academic achievement and clinical competence. Furthermore, participants reported that inadequate sleep adversely affected their emotional resilience, physical health, concentration, and confidence regarding their future professional careers. The study highlighted that sleep quality is a critical determinant of both academic and clinical performance among nursing students and emphasized the need for interventions promoting healthy sleep habits and student well-being.

In a study conducted by Mansoor, Haroon, Aziz, and Muhammad (2025) titled "Cognitive and Functional Impacts of Sleep Deprivation on Neurological Health among Working Professionals," the objective was to evaluate the influence of chronic sleep deprivation on neurological functioning, cognitive performance, and overall health outcomes among working professionals. The researchers adopted a cross-sectional research design and conducted the study

over a period of four months among 380 full-time professionals aged between 25 and 55

years from healthcare, education, corporate, and administrative sectors in South Punjab. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), cognitive performance was measured through the Montreal Cognitive Assessment (MoCA), neurological alertness was evaluated using the Psychomotor Vigilance Test (PVT), and overall health status was assessed using the Short Form Health Survey (SF-36). Data were analysed using descriptive statistics, Pearson's correlation, t-tests, ANOVA, and multiple linear regression techniques. The findings revealed that chronic sleep deprivation was significantly associated with impaired cognitive functioning, reduced neurological responsiveness, poorer attention, decreased decision-making ability, and lower overall health status. The study further reported that sleep duration independently predicted cognitive and health outcomes even after controlling for confounding variables. Overall, the study highlighted that chronic sleep deprivation adversely affects cognitive efficiency, neurological functioning, and general well-being, emphasizing the importance of adequate sleep and workplace wellness initiatives in preserving cognitive health and improving functional performance among individuals.

In a study conducted by Mohammed et al. (2025) titled "Sleep Deprivation, Memory Complaints and Aggression among Medical Students," the objective was to examine the relationship between sleep deprivation, memory complaints, and aggressive behavior among medical students. The researchers adopted a cross-sectional research design and collected data from medical students using structured questionnaires that assessed sleep patterns, subjective memory complaints, and levels of aggression. The study focused on understanding the cognitive and behavioral consequences of inadequate sleep among students pursuing professional education. The findings revealed that students experiencing sleep deprivation reported significantly higher levels of memory complaints and aggressive behavior compared to students with adequate sleep. Poor sleep duration and sleep quality were found to negatively affect cognitive processes such as memory retention, concentration, and information processing. The study further indicated that sleep-deprived

students were more likely to experience irritability, emotional instability, and behavioral difficulties, which could adversely affect their academic and interpersonal functioning. Overall, the study highlighted that sleep deprivation has substantial cognitive and psychological consequences among medical students and emphasised the importance of promoting healthy sleep practices to improve memory functioning, emotional regulation, and overall well-being. In a study conducted by Sabu et al. (2025) titled “Influence of Altered Sleep Patterns on Health-Related Quality of Life and Academic Performance Among Dental Students: A Cross-Sectional Study,” the objective was to assess sleep quality, daytime sleepiness, sleep deprivation, and health-related quality of life (HRQoL) and to examine their association with academic performance among undergraduate dental students. The researchers adopted a cross-sectional research design and collected data from 102 undergraduate dental students in Kerala, India using validated instruments, including the Pittsburgh Sleep Quality Index (PSQI) for sleep quality, the Epworth Sleepiness Scale (ESS) for daytime sleepiness, the Sleep Deprivation Index (SDI), and the SF-36 questionnaire for health-related quality of life. Academic performance was assessed using self-reported grade point averages. The findings revealed that 63.7% of the students experienced poor sleep quality, indicating a high prevalence of sleep-related problems among dental students. The study found that students with higher PSQI scores, indicating poorer sleep quality, were more likely to report lower academic performance. Furthermore, altered sleep patterns were associated with excessive daytime sleepiness, psychological distress, and poorer health-related quality of life. The researchers observed that inadequate sleep negatively affected concentration, learning ability, academic achievement, and overall well-being.

The study highlighted that poor sleep quality and sleep deprivation significantly influence both academic performance and quality of life among dental students. The researchers emphasized the importance of promoting healthy sleep habits and implementing interventions to improve sleep quality in order to enhance students' academic success and overall well-being.

In a study conducted by Gupta, Malik, Ranjan, Singh, Shastri, and Chaudhary (2025) titled “Sleep Hygiene, Sleep Patterns and the Impact of Sleep Insufficiency

Among University Students in North India: A Cross-Sectional Study,” the objective was to assess sleep hygiene behaviors, sleep patterns, and the perceived effects of sleep insufficiency among university students in North India. The researchers adopted a descriptive cross-sectional research design and collected data from 250 undergraduate students studying in the first to third years at Subharti Medical College, Meerut. Data were gathered using a semi-structured self-administered online questionnaire that assessed sleep hygiene practices, sleep patterns, and the effects of insufficient sleep among students.

The findings revealed that although 94% of the students believed that more than six hours of sleep were necessary to feel refreshed, only 56% actually obtained this amount of sleep on weekdays. The study identified several behaviours influencing sleep patterns. Sleep-promoting habits included academic reading (72.4%), physical activity (83.2%), and relaxation techniques (24%), whereas disruptive behaviours included heavy use of electronic devices (89.2%), tea or coffee consumption (62%), and smoking (6.4%). The researchers found that sleep insufficiency was associated with multiple adverse outcomes, including low energy levels (80.8%), stress (74.8%), difficulty maintaining focus (74%), behavioral changes (71.2%), academic hindrance (70%), and feelings of sleep deprivation (62%).

The study highlighted that there exists a considerable gap between the amount of sleep students require and the amount they actually obtain. The findings emphasized that poor sleep hygiene practices, excessive screen exposure, and unhealthy lifestyle behaviors contribute significantly to sleep insufficiency, which in turn negatively affects students' academic performance, concentration, stress levels, and overall well-being. The researchers recommended promoting healthy sleep hygiene practices among university students to improve both academic and health outcomes.

In a study conducted by Ahmad et al. (2025) titled “The Effects of 24-Hour Sleep Deprivation on Cognitive and Motor Skills of Male College Students,” the objective was to examine the effects of 24-hour sleep deprivation on cognitive and motor performance among college students. The researchers adopted an experimental research design to evaluate the impact of acute sleep

deprivation on various cognitive and motor functions. The study involved male college students who were assessed under normal sleep conditions and again after 24 hours of continuous wakefulness. Standardized cognitive and motor skill assessments were utilized to measure attention, reaction time, memory performance, coordination, and psychomotor functioning.

The findings revealed that participants who underwent 24-hour sleep deprivation demonstrated significant declines in cognitive and motor performance compared to their baseline assessments. Sleep-deprived students experienced reduced attention span, slower reaction times, impaired memory performance, decreased concentration, and poorer psychomotor coordination. The study further reported that prolonged wakefulness negatively affected decision-making ability and task performance, increasing the likelihood of errors and reduced efficiency. These findings suggest that even short-term sleep deprivation can substantially impair cognitive and functional abilities that are essential for academic and daily activities.

The study highlighted that sleep deprivation has a detrimental effect on cognitive functioning and motor performance among college students. The researchers emphasized the importance of adequate sleep in maintaining optimal cognitive efficiency, memory, concentration, and psychomotor skills, particularly among students who are required to perform academically demanding tasks.

In a study conducted by Sharma et al. (2025) titled “Sleep Disturbances and Their Association with Anxiety and Depression among Medical, Dental, and Nursing Students: A Multicentric Study in India,” the objective was to assess the prevalence of sleep disturbances among students pursuing healthcare professions and examine their association with anxiety and depression. The researchers adopted a multicentric cross-sectional research design and collected data from medical, dental, and nursing students from various institutions across India using standardized instruments to assess sleep quality, anxiety, and depression. The study focused on understanding the relationship between sleep disturbances and psychological well-being among students undergoing professional training.

The findings revealed a high prevalence of sleep disturbances among healthcare students. Students experiencing poor sleep quality and inadequate sleep duration were found to have significantly higher levels of anxiety and depression compared to students with healthy sleep patterns. The study further identified academic workload, examination stress, clinical responsibilities, and lifestyle-related factors as important contributors to sleep disturbances. The researchers observed that sleep-related problems adversely affected emotional stability, stress management, concentration, and overall mental health among students. The findings emphasized that sleep disturbances not only influence academic functioning but also increase the risk of psychological distress among students in professional courses.

The study highlighted the strong association between sleep disturbances, anxiety, and depression among medical, dental, and nursing students. The researchers recommended the implementation of mental health support services, stress-management programmes, and sleep hygiene interventions within educational institutions to improve students' psychological well-being and academic functioning.

In a study conducted by Maithani, Prabhu, and Pant (2024) titled "Daytime-Sleepiness, Factors Affecting Sleep and Sleep-Quality among Professional College Students of South India – A Correlative Study," the objective was to assess daytime sleepiness, factors affecting sleep, and sleep quality among students studying in professional colleges and to determine the relationship between these variables. The researchers adopted a correlational research design and collected data from 400 professional college students from selected colleges in South Karnataka, India. Data were gathered using the Epworth Sleepiness Scale (ESS), Pittsburgh Sleep Quality Index (PSQI), and a structured questionnaire designed to assess factors affecting sleep.

The findings revealed that 47.8% of the students experienced moderate excessive daytime sleepiness, while 55% reported poor sleep quality. The study identified a strong positive relationship between poor sleep quality and daytime sleepiness ($r = 0.569$, $p < 0.001$). It also found significant associations between sleep quality and lifestyle and habitual factors ($r = 0.201$, $p < 0.001$), as well as environmental factors affecting sleep ($r = 0.235$, $p < 0.001$). Furthermore, a

weak but significant relationship was observed between daytime sleepiness and psychological factors affecting sleep ($r = 0.20$, $p < 0.001$). The researchers concluded that lifestyle habits, environmental conditions, and psychological factors play an important role in influencing sleep quality among professional college students. Overall, the study highlighted the high prevalence of poor sleep quality and daytime sleepiness among professional college students and emphasised the need for interventions focused on sleep hygiene and healthy lifestyle practices to improve students' sleep quality and overall quality of life. An informational booklet on sleep hygiene practices was also provided to participants as part of the study.

In a study conducted by Awan et al. (2025) titled "Sleepless Minds: The Impact of Sleep Deprivation on Cognitive Performance," the objective was to examine the effects of sleep deprivation on cognitive performance and to understand how inadequate sleep influences various cognitive functions. The researchers adopted a quantitative research approach and reviewed the relationship between sleep deprivation and cognitive processes such as attention, memory, concentration, reaction time, decision-making, and executive functioning. The study focused on understanding the extent to which insufficient sleep impairs an individual's ability to perform cognitive tasks effectively.

The findings revealed that sleep deprivation significantly affects cognitive performance by reducing attention span, impairing memory consolidation, slowing reaction time, and decreasing problem-solving and decision-making abilities. Individuals experiencing inadequate sleep demonstrated difficulties in maintaining concentration, processing information efficiently, and performing tasks requiring sustained mental effort. The study further reported that prolonged sleep deprivation negatively influences executive functions, including planning, reasoning, judgment, and cognitive flexibility. These impairments were found to affect both academic and occupational performance. Overall, the study highlighted that sleep deprivation has a substantial negative impact on cognitive functioning and emphasised the importance of obtaining adequate sleep for maintaining optimal mental performance, learning ability, and productivity.

In a study conducted by Nor, Ramasamy, Che Nen, Kamarudin, and Abdul Halim (2025) titled “Effect of Sleep Deprivation on Academic Performance Among Wellness Students at Universiti Malaysia Kelantan,” the objective was to identify the effects of sleep deprivation on students’ academic performance and to examine how mental health, physical health, and social life are influenced by inadequate sleep. The researchers adopted a quantitative research design and collected data from 118 third-year Wellness students from Universiti Malaysia Kelantan. The study focused on understanding the relationship between sleep deprivation and factors that affect students’ academic achievement.

The findings revealed that sleep deprivation was one of the most significant factors affecting students’ academic performance. The study identified academic responsibilities such as assignments, tutorials, quizzes, and examinations as major contributors to sleep deprivation among students. Furthermore, inadequate sleep was found to negatively influence students’ mental health, physical health, and social functioning. Students who experienced sleep deprivation reported reduced concentration, fatigue, diminished motivation, and difficulties in maintaining academic performance. The researchers observed that sleep deprivation had a greater impact on academic outcomes compared to other variables examined in the study.

The study highlighted that sleep deprivation is a critical issue among university students and significantly affects academic achievement through its impact on mental, physical, and social well-being. The researchers emphasized the importance of promoting healthy sleep habits and implementing educational interventions to improve sleep quality and academic success among university students.

In a study conducted by Awan et al. (2025) titled “Sleepless Minds: The Impact of Sleep Deprivation on Cognitive Performance,” the objective was to examine the impact of sleep deprivation on cognitive performance and to understand how insufficient sleep affects various cognitive processes essential for learning, productivity, and daily functioning. The researchers adopted a quantitative

research approach and explored the relationship between sleep deprivation and cognitive domains such as attention, memory, concentration, reaction time, problem-solving, executive functioning, and decision-making. The study emphasized the growing concern of sleep deprivation in modern society and its implications for cognitive efficiency and mental performance. The findings revealed that sleep deprivation significantly impairs cognitive functioning by reducing attention span, slowing reaction time, weakening memory consolidation, and affecting information processing abilities. Individuals experiencing inadequate sleep demonstrated difficulties in concentration, learning, decision-making, and problem-solving tasks. The study further reported that sleep deprivation adversely affects executive functions, including planning, reasoning, judgment, and cognitive flexibility. The researchers highlighted that prolonged sleep loss can lead to reduced alertness and poorer performance in academic and occupational settings. The study also emphasized that cognitive functions requiring sustained attention and higher-order thinking are particularly vulnerable to sleep deprivation. These findings are consistent with previous research showing that sleep loss negatively affects memory, attention, and decision-making abilities.

The study highlighted that sleep deprivation has a substantial negative impact on cognitive performance and can interfere with an individual's ability to function effectively in academic, professional, and social environments. The researchers emphasized the importance of maintaining adequate sleep duration and healthy sleep habits to preserve cognitive health, improve learning outcomes, and enhance overall productivity.

2.4. Conclusion

The comprehensive review of literature clearly establishes that sleep deprivation is a prevalent and multidimensional issue among students in professional and higher education settings. The evidence consistently demonstrates that inadequate sleep is not merely a lifestyle inconvenience but a serious concern with far-reaching consequences for students' academic achievement, cognitive functioning, psychological well-being, and physical

health.

Academic pressures, digital technology use, unhealthy lifestyle habits, and environmental factors emerge as the primary contributors to sleep deprivation among students. The consequences of these disruptions are wide-ranging, encompassing reduced concentration, impaired memory, diminished motivation, increased stress, anxiety, depression, and poorer academic and clinical performance. Studies conducted in the Indian context, and specifically in Kerala, indicate that professional course students in the region are particularly vulnerable to sleep deprivation due to the intensive demands of their academic programmes. However, the existing literature lacks a focused, cross-disciplinary study that specifically examines the causes and effects of sleep deprivation among students of professional courses in Thiruvananthapuram. The present study is therefore positioned to address this gap by generating locally grounded, empirically sound evidence that can inform practical interventions at both the student and institutional level.

2.5. Theoretical Framework

A theoretical framework provides the conceptual foundation for a research study by explaining the theories that guide the investigation of the research problem. It helps in understanding the relationship between the variables under study and provides a basis for interpreting the findings. In the present study titled "Cause and Effect of Sleep Deprivation on Students of Professional Courses in Thiruvananthapuram," the researcher seeks to examine the factors contributing to sleep deprivation and its impact on the academic, cognitive, psychological, and social functioning of students pursuing professional courses. Sleep deprivation is a multidimensional issue influenced by biological, psychological, behavioural, social, and environmental factors. Professional course students often experience demanding academic schedules, examination pressure, internships, project work, excessive screen time, and lifestyle changes, all of which may contribute to inadequate sleep. In turn, sleep deprivation affects various aspects of students' lives, including concentration, memory, emotional well-being, academic performance, interpersonal relationships, and overall

quality of life.

As the present study is conducted within the discipline of Social Work, it adopts a holistic perspective that recognises the interaction between individuals and their environment. Therefore, the study is guided by the Biopsychosocial Model (George L. Engel, 1977), the Person-in-Environment (PIE) Perspective, the Stress and Coping Theory (Lazarus and Folkman, 1984), and Maslow's Hierarchy of Needs (1943). These theories collectively provide a comprehensive understanding of the causes and consequences of sleep deprivation among professional course students.

2.5.1. Biopsychosocial Model (George L. Engel, 1977)

The Biopsychosocial Model was proposed by psychiatrist George L. Engel in 1977 as an alternative to the traditional biomedical model. Engel argued that health and illness cannot be explained solely by biological factors but should be understood through the interaction of biological, psychological, and social dimensions. The model emphasises that human health is influenced by multiple interconnected systems rather than a single cause.

According to this model, biological factors include genetic characteristics, physical health, circadian rhythm, neurological functioning, hormonal regulation, and sleep physiology. Sleep is one of the body's most essential biological processes, allowing for physical restoration, cognitive processing, memory consolidation, hormonal balance, and immune functioning. When adequate sleep is disrupted, individuals experience fatigue, headaches, impaired immunity, reduced cognitive functioning, and decreased physical well-being.

Psychological factors include stress, anxiety, depression, emotional regulation, motivation, self-esteem, coping abilities, and behavioural patterns. Students enrolled in professional courses often face academic pressure, examination anxiety, fear of failure, performance expectations, and career uncertainty. These psychological stressors can significantly interfere with healthy sleeping patterns, making students more susceptible to sleep deprivation.

Social factors refer to the influence of family, peers, educational institutions, hostel environments, cultural expectations, financial conditions, technology use, and social relationships. Students frequently sacrifice sleep to complete assignments, prepare for examinations, participate in internships, or spend prolonged periods on electronic devices. Social media usage, peer influence, irregular hostel routines, and academic competition further contribute to poor sleep quality.

The Biopsychosocial Model suggests that sleep deprivation among professional students is not the result of a single factor but emerges from the interaction of biological vulnerability, psychological stress, and social circumstances. Consequently, its effects are also multidimensional, influencing academic performance, emotional well-being, physical health, cognitive functioning, and interpersonal relationships.

In the context of the present study, this model provides an appropriate framework for understanding how academic workload, psychological stress, lifestyle habits, screen time, and environmental conditions collectively contribute to sleep deprivation and how inadequate sleep affects students' overall functioning.

2.5.2. Person-in-Environment (PIE) Perspective

The Person-in-Environment (PIE) Perspective is one of the core theoretical foundations of social work. It emphasises that individuals cannot be understood in isolation from their surrounding environment. Human behaviour and well-being are shaped through continuous interaction between the individual and various environmental systems, including family, educational institutions, peer groups, communities, and the wider social context.

The PIE perspective recognises that personal problems often arise due to interactions between individuals and their environment rather than solely because of individual deficiencies. Therefore, effective assessment and intervention require consideration of both personal characteristics and environmental influences. Professional course students function within several interconnected environments. These include their family environment, educational institutions, hostel or residential settings, peer groups, internship settings, and digital environments. Each of these environments influences students' sleeping habits and daily routines.

Academic institutions often impose demanding schedules involving lectures, practical sessions, assignments, seminars, clinical postings, and examinations. Hostel environments may expose students to noise, shared living arrangements, irregular routines, and reduced privacy, making adequate sleep difficult. Family expectations regarding academic success may create additional emotional pressure, while peer influence and social media usage frequently encourage late-night activities that delay bedtime.

Similarly, sleep deprivation influences students' interaction with their environment. Students experiencing inadequate sleep may show reduced classroom participation, poor academic performance, emotional instability, irritability, social withdrawal, reduced motivation, and impaired interpersonal relationships. These consequences further affect their educational adjustment and overall social functioning.

Sleep deprivation is therefore understood as both an individual and environmental issue. The Person-in-Environment Perspective supports the present study by explaining how environmental conditions contribute to sleep deprivation and how inadequate sleep subsequently affects students' ability to function effectively within different social systems.

2.6. Research Gap Analysis

The majority of existing studies on sleep deprivation among students have been conducted in metropolitan cities such as Mumbai, Delhi, and cities in North and West India, with the southern state of Kerala remaining significantly underrepresented in the research literature despite its unique and highly competitive academic environment.

While a small number of studies have been conducted in Kerala, such as Gopika et al. (2025) among clinical postgraduate students and Sabu et al. (2025) among dental students, these focus on single professional disciplines and do not provide a cross-disciplinary understanding of sleep deprivation across medicine, engineering, law, and social work students within the same geographical setting.

No dedicated study has been identified that specifically examines the causes and effects of sleep deprivation among students of professional courses in Thiruvananthapuram, leaving a significant gap in locally relevant, context-specific empirical evidence that institutions and policymakers in the district can draw upon.

CHAPTER III

METHODOLOGY

3. CHAPTER III: METHODOLOGY

3.1. Introduction

The third chapter of this research presents a comprehensive account of the methodological framework adopted by the researcher to conduct the study. The chapter details the title of the study, objectives, conceptual and operational definitions of key terms, pilot study, research design, universe and sampling design, data collection methods, data analysis techniques, ethical considerations, assumptions, limitations, and scope of the study. The methodology adopted by the researcher provides a systematic and scientifically grounded framework for understanding the relationship between sleep deprivation and its contributing factors, and their impact on the academic performance, cognitive functioning, and psychosocial well-being of students pursuing professional courses in Thiruvananthapuram. The methodological choices made at each stage of the research process were guided by the objectives of the study and the nature of the research problem, ensuring that the findings obtained are reliable, valid, and meaningful.

3.2. Title of the Study

“Causes and Effects of Sleep Deprivation among Students of Professional Courses in Thiruvananthapuram”

3.3. Objectives

General Objective

To examine the causes and effects of sleep deprivation among students of professional courses in Thiruvananthapuram.

Specific Objectives

- To identify the sleep patterns and sleep disturbances among professional course students.

- To identify the factors contributing to sleep deprivation among professional course students.
- To examine the impact of sleep deprivation on students' academic performance.
- To identify the psychological effects of sleep deprivation among students.

3.4. Definition of Concepts

Table 3.4. 1: Definition of Concepts

Concept	Conceptual/Theoretical Definition	Operational Definition
Sleep Deprivation	Sleep deprivation refers to obtaining insufficient quantity or quality of sleep required for normal physical, cognitive, and psychological functioning.	In this study, sleep deprivation is measured through respondents' self-reported sleep duration, bedtime, sleep quality, time taken to fall asleep, and sleep disturbances using a structured questionnaire.
Professional Course Students	Professional course students are individuals enrolled in programmes that provide specialized education and training for a specific profession.	In this study, professional course students refer to students pursuing MSW, MBBS, Nursing, Engineering, MBA, LLB, and other professional programmes in aided

		colleges within Thiruvananthapuram district.
Sleep Patterns	Sleep patterns refer to an individual's habitual sleep behaviour, including the timing, duration, regularity, and quality of sleep.	Measured through respondents' bedtime, wake-up time, average sleep duration, frequency of interrupted sleep, and perceived sleep quality.
Academic Performance	Academic performance refers to the level of achievement attained by students in educational activities and learning outcomes.	Measured through students' self-reported concentration, memory, classroom alertness, ability to complete academic tasks, and perceived academic efficiency.
Psychological Effects	Psychological effects refer to emotional and mental responses influenced by various factors, including inadequate sleep.	Measured through respondents' self-reported levels of stress, irritability, anxiety, mood changes, fatigue, and motivation.

In order to bring clarity and precision to this research, it is essential to define the key concepts guiding the study. Each term is first defined based on established literature (theoretical definition), followed by an explanation of how it is applied within the scope of this research (operational definition).

3.5. Pilot Study

Prior to the commencement of the main study, a pilot study was conducted by the researcher among six professional course students from the Karyavattom Campus, Thiruvananthapuram. The pilot study was undertaken with the primary purpose of assessing the suitability, clarity, and comprehensibility of the structured questionnaire, and to identify any difficulties or ambiguities in the data collection process before the main study was administered. The respondents selected for the pilot study were professional course students who matched the inclusion criteria of the main study. The questionnaire was administered personally by the researcher, and respondents were encouraged to provide feedback on the clarity of individual items, the relevance of the questions to their experiences, and the overall length and feasibility of the tool. The findings of the pilot study indicated the presence of sleep deprivation among the respondents and provided preliminary insights into the nature and extent of the problem among professional course students in Thiruvananthapuram. Based on the responses obtained and the feedback received, minor modifications were made to certain questions to improve their clarity, precision, and relevance to the objectives of the study. The respondents who participated in the pilot study were excluded from the final sample to avoid duplication of data.

3.6. Research Design

Research design refers to the overall plan, structure, and strategy adopted by the researcher for conducting the study. It provides a systematic framework for data collection, measurement, and analysis, and guides every stage of the research process from the formulation of the research problem to the interpretation of findings. The selection of an appropriate research design is essential as it determines the quality, validity, and reliability of the research outcomes.

Research Approach: The present study adopted a quantitative research approach. Quantitative research involves the systematic collection and statistical analysis of numerical data to understand patterns, relationships, and trends related to a particular phenomenon. This approach was selected as it enabled the researcher to collect structured data from a representative sample of professional

course students and to quantify the causes and effects of sleep deprivation using statistical tools. The quantitative approach facilitated the assessment of sleep patterns, the identification of contributing factors, and the examination of the impact of sleep deprivation on academic performance and psychological well-being through objective and systematic analysis. It also enabled the use of inferential statistics to test the hypotheses of the study and to draw generalized conclusions from the sample findings.

Research Design: The present study employed a descriptive research design with elements of a correlational design. Descriptive research is concerned with describing the characteristics, conditions, and experiences of a particular population or phenomenon at a given point in time, without manipulating any variables. The descriptive design was selected because it enabled the researcher to obtain a clear and accurate understanding of the existing situation regarding sleep deprivation among professional course students in Thiruvananthapuram — including the prevalence of sleep deprivation, its major contributing factors, and its effects on academic performance and psychological well-being.

The correlational component of the design was incorporated to examine the nature and strength of the relationships between sleep deprivation and its contributing factors, academic consequences, and psychological effects. Correlation analysis enabled the researcher to determine whether and to what extent specific factors — such as late night studying, academic stress, screen time, and environmental conditions, are statistically related to sleep duration and sleep quality among professional course students. This combined descriptive-correlational design was found most appropriate for the study as it not only described the phenomenon of sleep deprivation but also provided insights into the interrelationships among the key variables, thereby enabling a more comprehensive understanding of the research problem. The study is **cross-sectional** in nature, meaning that data were collected from the respondents at a single point in time, providing a snapshot of the sleep patterns, contributing factors, and consequences of sleep deprivation among professional course students in Thiruvananthapuram during the period of study.

3.7. Universe and Unit of Study

The universe of the study refers to the entire population possessing the characteristics relevant to the research problem. It includes all individuals from whom the researcher intends to draw conclusions through the study.

The universe of the present study consisted of students pursuing professional courses in Thiruvananthapuram District, Kerala. Thiruvananthapuram is one of the major educational centres in Kerala, offering a wide range of professional programmes through various colleges and institutions. Students enrolled in professional courses often experience demanding academic schedules, examinations, assignments, practical training, internships, and other academic responsibilities that may influence their sleeping patterns and overall well-being.

For the purpose of the study, the universe included students pursuing professional courses such as Medicine, Engineering, Law, and Social Work in aided colleges within Thiruvananthapuram district. These students formed the target population of the study as they were considered more likely to experience sleep deprivation due to the academic and professional demands associated with their courses. The researcher selected respondents from this universe to understand the causes of sleep deprivation and its effects on their academic performance and psychological well-being.

This universe was considered appropriate for the study because it provided access to students from different professional disciplines, thereby enabling a comprehensive understanding of sleep deprivation among professional course students in Thiruvananthapuram. The unit of research refers to the primary entity or individual from whom data are collected and analysed in a research study. It represents the basic unit that is examined to address the research objectives and answer the research questions.

In the present study, the unit of research consisted of individual students pursuing professional courses in aided colleges in Thiruvananthapuram District, Kerala. Each student served as a separate unit of analysis, and information was collected from them regarding their sleep patterns, factors contributing to sleep

deprivation, and the effects of inadequate sleep on their academic performance, cognitive functioning, and psychological well-being.

The study included students enrolled in professional courses such as Medicine, Engineering, Law, and Social Work. These students were selected because they are exposed to demanding academic schedules, examinations, assignments, practical training, internships, and other academic responsibilities that may influence their sleeping habits and overall well-being. By collecting data from individual students, the researcher was able to assess the prevalence, causes, and effects of sleep deprivation among students pursuing professional education in Thiruvananthapuram.

3.8. Sampling Design

Sampling Technique: The present study adopted stratified random sampling as the primary sampling technique. Stratified random sampling is a probability sampling method in which the total population is divided into distinct subgroups, known as strata, based on specific characteristics relevant to the study. A sample is then drawn randomly from each stratum in a controlled and deliberate manner to ensure adequate representation of all subgroups in the final sample.

In the present study, the population was stratified based on the professional course being pursued by the students of engineering, medicine, law, social work, nursing, and MBA. The researcher visited the respective aided colleges in Thiruvananthapuram and collected data from each course stratum in a balanced manner, ensuring that no single course disproportionately dominated the final sample. This approach ensured that the findings of the study adequately represent the experiences of students across different professional disciplines, and enabled meaningful comparisons of sleep patterns and their consequences across courses.

Stratified random sampling was considered the most appropriate technique for this study for the following reasons. First, it ensured equal and balanced representation of students from all six professional courses included in the study, preventing sampling bias in favour of any particular course. Second, it improved

the comparability of findings across different courses, which was essential for achieving the objectives of the study. Third, it enhanced the precision and internal validity of the findings by controlling for the variability arising from differences in academic demands and schedules across professional courses. Fourth, it is widely recognised as the most suitable sampling technique for quantitative research designs involving distinct subgroups within a heterogeneous population, particularly in social science research.

Sample Size:

A total of 67 students pursuing professional courses in Thiruvananthapuram were selected for the study. The sample consisted of students from six professional courses, MSW (n=22), LLB (n=12), Nursing (n=9), Engineering (n=9), MBA (n=8), and MBBS (n=7). The sample size was determined based on the objectives of the study, the availability of respondents during the data collection period, and practical feasibility considerations.

3.9. Inclusion and Exclusion Criteria

3.9.1. Inclusion Criteria:

1. Students enrolled in professional courses, engineering, medicine, law, social work, nursing, and MBA, in aided colleges located in Thiruvananthapuram district.
1. Students within the age group of 18–25 years.
2. Students residing in hostels, paying guest accommodations, or with family within Thiruvananthapuram.
3. Students who are currently enrolled and actively attending their course during the period of data collection.
4. Students who voluntarily provided informed consent to participate in the study.

3.9.2. Exclusion Criteria:

1. Students enrolled in professional courses other than those specified in the inclusion criteria.
2. Students studying in unaided or self-financing colleges.

3. Students who have already completed their course.
4. Students below 18 years or above 25 years of age.
5. Students who did not provide informed consent to participate in the study.
6. Students who submitted incomplete or partially filled questionnaires.
7. Students who participated in the pilot study.

3.10. Data Collection

Data for the present study were collected using a self-structured questionnaire prepared by the researcher based on the objectives of the study and a thorough review of existing literature on sleep deprivation among college students. The questionnaire served as the primary instrument of data collection and was designed to obtain comprehensive information from respondents on all aspects of the research problem.

Structure of the Questionnaire:

The questionnaire comprised seven sections, each addressing a distinct dimension of the research problem:

- **Section A - Demographic Profile:** Collected information on the respondents' age, gender, course, academic year, place of stay, and average daily travel time.
- **Section B - Sleep Patterns:** Assessed the respondents' usual bedtime, time taken to fall asleep, average sleep duration per night, and overall sleep quality over the past one month.
- **Section C - Sleep Disturbances:** Assessed the frequency of seven sleep disturbances including difficulty falling asleep, nighttime awakening, early morning awakening, sleep dissatisfaction, sleep-related worry, daytime sleepiness, and feeling unrefreshed after waking up, using a five-point frequency scale ranging from Never to Almost Always.
- **Section D - Contributing Factors:** Assessed the extent to which ten academic, lifestyle, and environmental factors contributed to the respondents' sleep deprivation, using a five-point Likert scale ranging from Strongly Disagree to Strongly Agree.

- **Section E - Academic Performance Impact:** Assessed the self-reported impact of sleep deprivation on five academic performance variables including concentration, memory, classroom sleepiness, academic mistakes, and overall academic performance, using a five-point Likert scale.
- **Section F - Psychological Effects:** Assessed the psychological consequences of sleep deprivation including stress, irritability, emotional low, lack of motivation, and academic anxiety, using a five-point Likert scale.
- **Section G - Sleep Improvement and Awareness:** Assessed respondents' awareness of sleep hygiene, their efforts to improve sleep, and collected open-ended suggestions for improving sleep habits at both the student and institutional level.

The questionnaire was personally administered by the researcher to the respondents in their respective college settings. Prior to administering the questionnaire, the researcher explained the purpose and objectives of the study clearly to the respondents and addressed any questions or concerns they had. Respondents were assured of complete confidentiality and anonymity, and were encouraged to respond honestly and accurately. The data collected through the questionnaire were compiled, coded, and prepared for statistical analysis.

3.11. Pre-Test

A pre-test of the structured questionnaire was conducted as a formal component of the tool validation process, prior to the main data collection. The pre-test was carried out among six professional course students from the Karyavattom Campus, Thiruvananthapuram, who were selected purposively based on their eligibility under the inclusion criteria of the study.

Purpose of the Pre -Test:

The pre-test was conducted with the following specific purposes:

- To assess the face validity and content validity of the questionnaire items
- To determine whether the questions were clearly worded, unambiguous, and easily understood by the target respondents

- To identify any items that were irrelevant, redundant, or confusing to the respondents
- To assess the time required to complete the questionnaire and ensure it was within a reasonable range for the respondents
- To identify any practical difficulties in the administration of the questionnaire in the field setting

Administration of the Pre-Test: The researcher personally administered the pre-test questionnaire to the six respondents in a structured and supervised setting. Before administering the questionnaire, the researcher explained the purpose of the study and the pre-test to the respondents. Respondents were encouraged to read each item carefully and to flag any questions that were unclear, confusing, or difficult to answer. They were also asked to note the time taken to complete the questionnaire.

Findings of the Pre-Test: The pre-test yielded several important insights that guided the refinement of the final questionnaire:

1. The respondents were able to comprehend the majority of the questionnaire items clearly and without difficulty, indicating that the language used in the tool was appropriate for the target population.
2. The pre-test confirmed the presence of sleep deprivation among professional course students, with all six respondents reporting sleeping less than the recommended 7–9 hours per night. This provided preliminary validation of the research problem and confirmed the relevance of the study topic.
3. Some respondents indicated initial difficulty in understanding the distinction between certain response options in the frequency scale used in Section C, which prompted the researcher to add clearer descriptors for each response option in the final tool.
4. The average time taken to complete the questionnaire during the pre-test was approximately 12–15 minutes, which was considered appropriate and within the feasible range for the target respondents.
5. Feedback from respondents indicated that certain items in Section D required clearer contextual framing to distinguish between academic and lifestyle

factors, which led to minor rewording of two items in the final questionnaire.

Modifications Made Based on Pre-Test: Based on the feedback received and the observations made during the pre-test, the following modifications were incorporated into the final questionnaire before it was administered for the main study:

1. Clearer descriptors were added to the frequency scale response options in Section C to improve respondent comprehension.
 2. Minor rewording was applied to two items in Section D to improve clarity and contextual relevance.
 3. The instructions at the beginning of each section were expanded to provide respondents with clearer guidance on how to respond to each type of question.
- The respondents who participated in the pre-test were excluded from the final sample to ensure that their prior exposure to the questionnaire did not influence the main study findings.

3.12. Data Analysis

The data collected through the structured questionnaire were coded, classified, tabulated, and analysed using the Statistical Package for Social Sciences (SPSS) software. The analysis was conducted in a systematic and sequential manner, beginning with the validation of the research tool and proceeding through descriptive and inferential statistical analyses.

The following statistical techniques were employed in the analysis:

3.12.1. Reliability Analysis (Cronbach's Alpha):

The internal consistency of the Likert scale sections of the research tool (Sections C, D, E, and F) was assessed using Cronbach's Alpha reliability analysis. This was conducted prior to all other inferential analyses to confirm the validity and reliability of the tool. An alpha value of 0.70 or above was used as the threshold for acceptable reliability, following the recommendation of Nunnally (1978).

3.12.2. Frequency Distribution and Percentage Analysis:

Descriptive statistical techniques including frequency distribution and percentage analysis were used to describe the socio-demographic characteristics of the respondents and to examine the prevalence and patterns of sleep deprivation, sleep disturbances, contributing factors, academic performance impact, and psychological effects among the respondents. The results were presented in tabular form and interpreted in accordance with the objectives of the study.

3.12.3. Chi-Square Test:

Chi-Square tests of independence were conducted to examine the relationship between sleep deprivation and demographic variables including gender, course, place of stay, and travel time. The Chi-Square test was selected as it is appropriate for examining the association between two categorical variables. A significance level of $p < 0.05$ was used as the threshold for statistical significance.

3.12.4. Spearman's Rank Correlation Analysis:

Spearman's rank correlation analysis was employed to examine the nature and strength of the relationships between sleep duration and the key variables of the study, including academic performance factors, psychological effects, contributing factors, screen time habits, and environmental factors. Spearman's correlation was selected in preference to Pearson's correlation as the data collected through the Likert scale items are ordinal in nature and may not conform to the assumption of normality required for Pearson's correlation.

3.12.5. One-Way ANOVA and Independent Samples T-Test:

One-Way Analysis of Variance (ANOVA) and Independent Samples T-Tests were employed to compare mean sleep duration and sleep quality scores across different groups, including course of study, gender, and place of stay. Post hoc tests using the Tukey method were applied where ANOVA results indicated statistically significant differences between three or more groups, to identify which specific groups differed from each other.

3.13. Ethical Considerations

Ethical considerations were given paramount importance throughout all stages of the present study, from the design of the research tool to the collection, storage, and analysis of data. The

researcher adhered to the ethical principles of voluntary participation, informed consent, confidentiality, anonymity, and the right to withdraw, which are fundamental to ethical research practice in the social sciences.

The purpose, objectives, and procedures of the study were clearly explained to all prospective respondents before their participation was sought. Respondents were informed that their participation was entirely voluntary, and that they were free to withdraw from the study at any stage without any adverse consequences. No pressure or inducement was placed on any respondent to participate in the study.

Informed consent was obtained from all participants prior to the administration of the questionnaire. The researcher assured all respondents of the complete confidentiality and anonymity of their responses. No identifying information was collected that could link individual responses to specific respondents. All data collected were used solely for academic purposes and were stored securely by the researcher.

The study did not involve any procedures that could cause physical or psychological harm to the respondents. The questionnaire was non-invasive and addressed topics within the normal range of student experience. The researcher remained sensitive to the privacy and dignity of all respondents throughout the data collection process.

3.14. Assumptions, Limitations, and Scope of the Study

Assumptions

The researcher assumes that all respondents provided honest and accurate responses to the questionnaire based on their actual experiences and perceptions regarding sleep deprivation. The researcher assumes that the respondents adequately understood the questions included in the tool and responded to them in the manner intended by the researcher. The researcher assumes that the sample of 67 professional course students drawn through stratified random sampling is sufficiently representative of the broader population of professional course students in Thiruvananthapuram for the purposes of this study. The researcher assumes that the data collected adequately reflect the sleep patterns, contributing factors, academic consequences, and psychological effects of sleep deprivation among professional course students in Thiruvananthapuram.

Limitations

The study was limited to 67 professional course students from aided colleges in Thiruvananthapuram district, which restricts the generalisability of the findings to other districts and states. The study relied entirely on self-reported data collected through a structured questionnaire. Self-reported data are inherently subject to response bias, social desirability bias, and recall inaccuracies, which may affect the accuracy of the findings. The cross-sectional design of the study limits the ability to establish causal relationships between sleep deprivation and its contributing factors and consequences. Longitudinal studies would be required to establish causality. The study did not include objective measures of sleep deprivation such as polysomnography or actigraphy, relying instead on subjective self-report measures of sleep duration and quality. The exclusion of students from unaided colleges limits the representativeness of the sample with respect to the broader professional student population in Thiruvananthapuram. Time constraints and resource limitations during the data collection period restricted the overall scope and depth of the study.

Scope

The study focuses on understanding the impact of sleep deprivation among students pursuing professional courses in Thiruvananthapuram. It examines sleep patterns, sleep disturbances, factors contributing to sleep deprivation, academic performance consequences, and psychological effects experienced by professional course students. The findings of the study have relevance for students, educators, hostel administrators, policymakers, and social work practitioners involved in the welfare of professional course students in Thiruvananthapuram and Kerala more broadly.

The study may serve as a foundation for further research on sleep deprivation among professional course students across Kerala and other states in India, and may contribute to the development of awareness programmes, institutional interventions, and policy-level strategies aimed at promoting healthy sleep habits and improving the overall academic performance and well-being of professional course students.

CHAPTER IV: DATA ANALYSIS AND INTERPRETATION

4. CHAPTER IV: DATA ANALYSIS AND INTERPRETATION

4.1. Introduction

The fourth chapter of this study presents a comprehensive analysis and interpretation of the data collected from 67 students pursuing professional courses in Thiruvananthapuram. The data were gathered through a structured questionnaire comprising seven sections covering socio-demographic profile, sleep patterns, sleep disturbances, factors contributing to sleep deprivation, academic performance impact, psychological effects, and sleep improvement awareness. The collected data were coded, tabulated, and analysed using the Statistical Package for Social Sciences (SPSS) software.

The analysis is presented in a systematic and sequential manner, beginning with the socio-demographic profile of the respondents, followed by an examination of their sleep patterns and disturbances, the factors contributing to sleep deprivation, and the impact of sleep deprivation on their academic performance and psychological well-being. The data are presented using both descriptive and inferential statistical techniques. Descriptive statistics including frequency distribution and percentage analysis are used to describe the characteristics and experiences of the respondents. Inferential statistics including reliability analysis using Cronbach's Alpha, Chi-Square tests of independence, and Spearman's rank correlation analysis are employed to examine the relationships between sleep deprivation and the key variables of the study.

Each table in this chapter is accompanied by a detailed interpretation that situates the findings within the context of the research objectives and existing literature on sleep deprivation among college students in India and Kerala. The data are also presented in the form of pie charts and bar graphs to provide a clear and visually accessible representation of the key findings. Pie charts are used to represent the distribution of responses for demographic and sleep pattern variables, while bar graphs are used to illustrate the distribution of responses across Likert scale items measuring sleep disturbances, contributing factors,

academic performance impact, and psychological effects.

The findings presented in this chapter directly address the five specific objectives of the study and provide the empirical foundation for the conclusions, suggestions, and recommendations presented in Chapter 5. The analysis reveals a multidimensional picture of sleep deprivation among professional course students in Thiruvananthapuram, shaped by a complex interaction of academic pressures, lifestyle habits, environmental conditions, and psychological consequences that collectively undermine student well-being and academic performance.

4.2. Socio-Demographic Profile of the Respondents

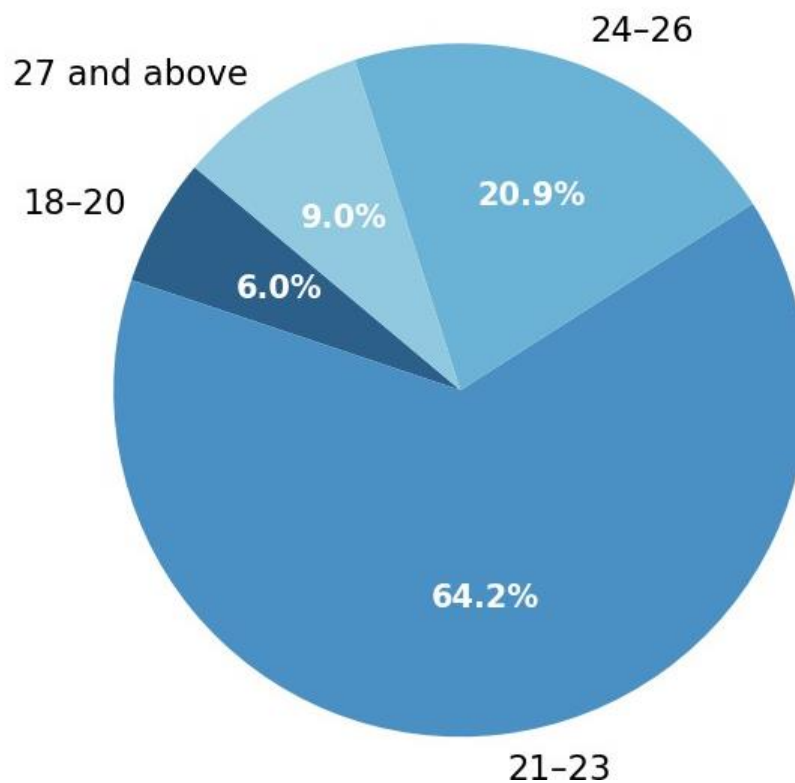


Figure 4.2.1: Age Distribution of Respondents

Figure 4.2.1 shows the age distribution of the respondents. The majority of respondents (64.2%) belonged to the age group of 21–23 years, followed by 24–26 years (20.9%), 27 and above (9.0%), and 18–20 years (6.0%). This distribution indicates that most participants were in the mid-stage of their professional courses, a period typically associated with heightened academic pressure, approaching deadlines, and increasing workload. According to the National Youth Policy of India (2014), individuals between the ages of 15 and 29 years are categorized as youth, and this age group is particularly vulnerable to lifestyle-related health issues including sleep deprivation. The predominance of the 21–23 age group in this study is consistent with the typical enrollment pattern of students in postgraduate and later-year undergraduate professional programmes in Kerala.

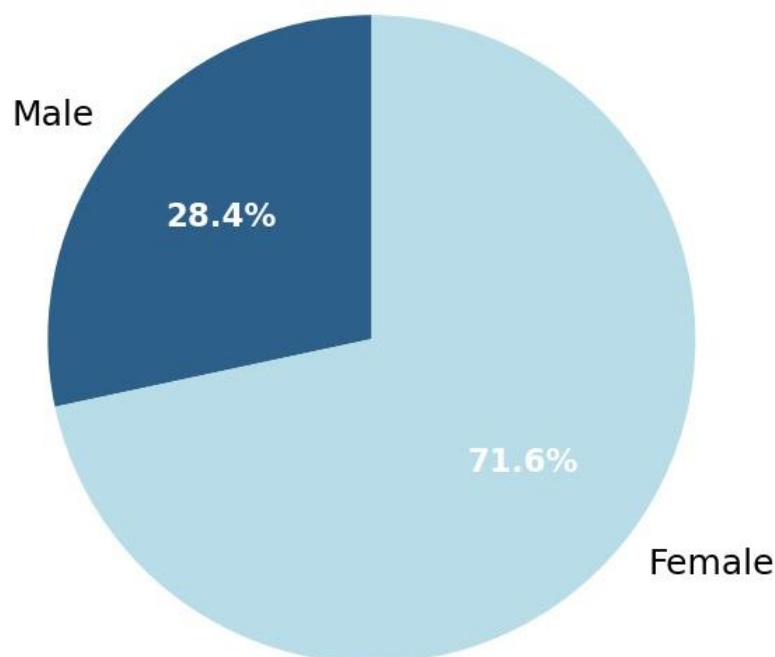


Figure 4.2.2: Gender Distribution of Respondents

Figure 4.2.2 shows the gender distribution of respondents. The sample consisted predominantly of female respondents (71.6%) compared to male respondents (28.4%). This distribution reflects the gender composition of aided professional colleges in Thiruvananthapuram, particularly in courses such as

MSW, nursing, and law, where female enrollment is significantly higher. According to the All India Survey on Higher Education (AISHE, 2021), female enrollment in higher education in Kerala has consistently exceeded male enrollment, with women comprising nearly 57% of total enrolled students in the state. The higher proportion of female respondents in this study is therefore consistent with the broader enrollment pattern of aided professional colleges in Thiruvananthapuram.

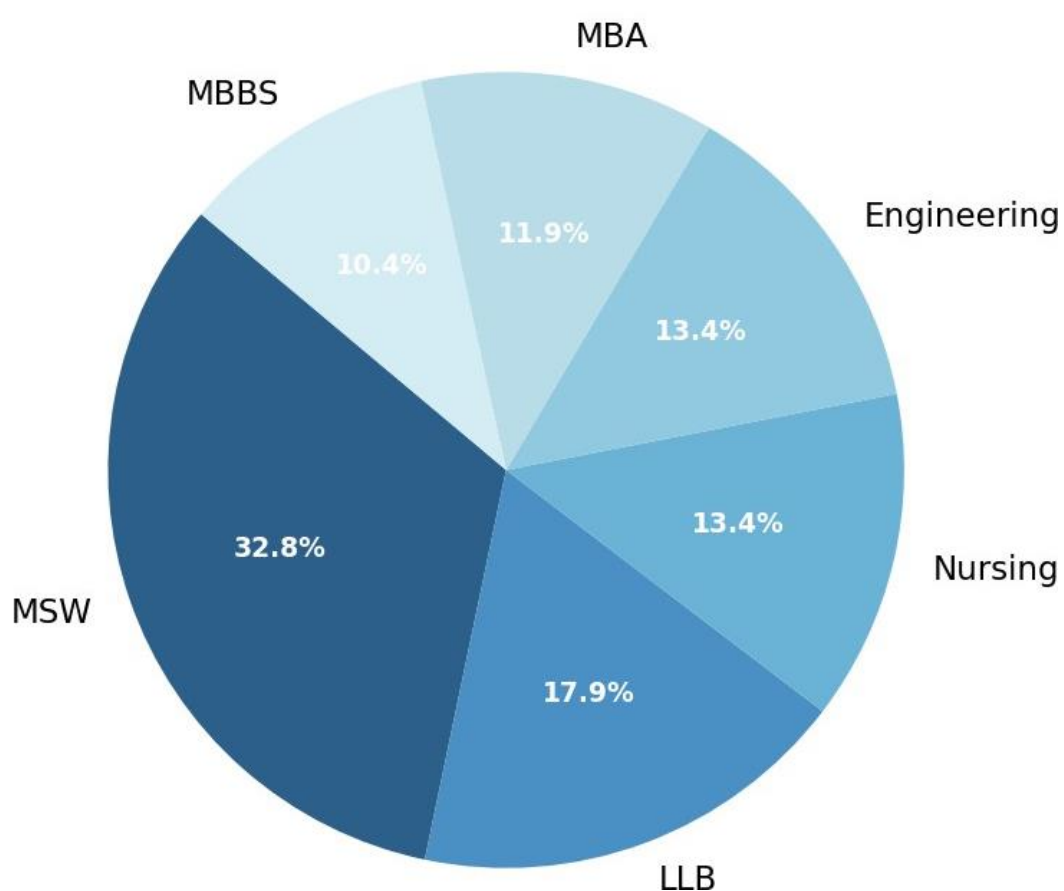


Figure 4.2.3: Course Distribution of Respondents

Figure 4.2.3 shows the course distribution of respondents. MSW students formed the largest group (32.8%), followed by LLB (17.9%), Nursing and Engineering (13.4% each), MBA (11.9%), and MBBS (10.4%). The inclusion of students from six different professional courses ensures diversity in the sample and allows for meaningful comparisons across disciplines. The

relatively higher proportion of MSW students reflects the researcher's own affiliation with the course and the accessibility of MSW respondents during data collection. MBBS students, despite forming the smallest group (10.4%), are particularly significant in the context of this study, as medical education is widely recognized as one of the most demanding professional programmes in terms of academic workload and sleep deprivation. According to Chutani et al. (2017), medical students are among the most sleep-deprived student populations in India, with academic pressure and long clinical hours being primary contributors.

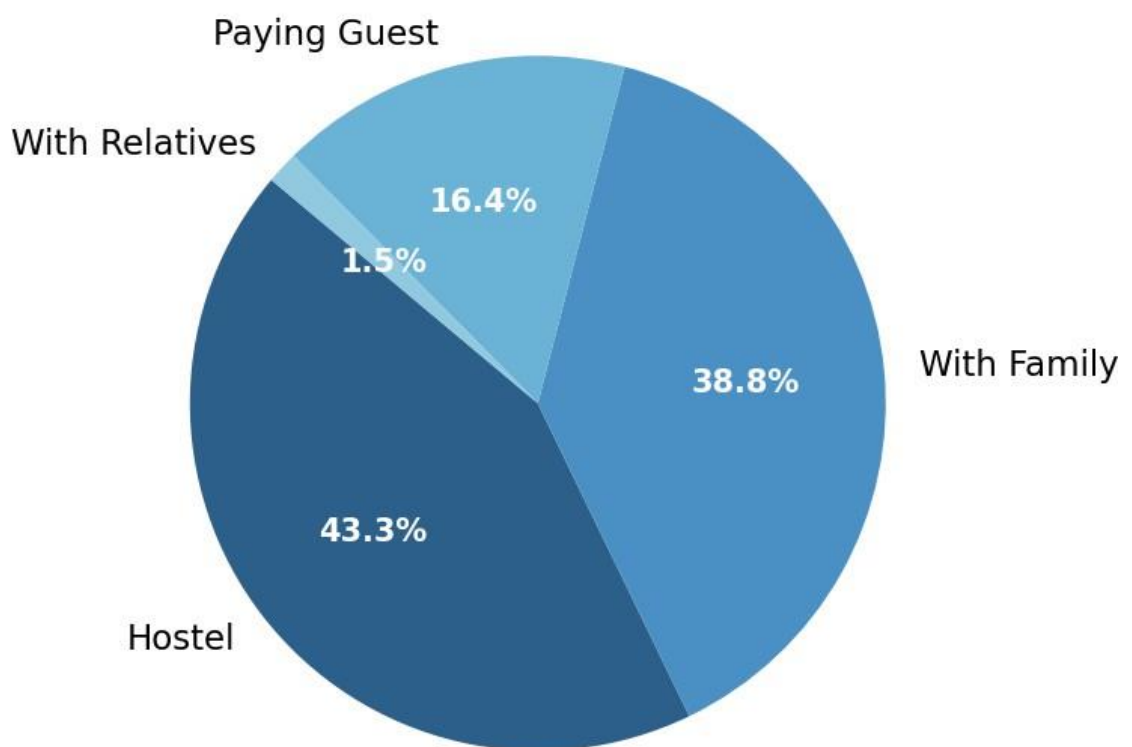


Figure 4.2.4: Place of Stay of Respondents

Figure 4.2.4 shows the place of stay of respondents. A significant proportion of respondents resided in hostels (43.3%), followed by those living with family (38.8%), paying guest accommodations (16.4%), and with relatives (1.5%). The high proportion of hostel residents is particularly noteworthy in the context of this study, as hostel environment and noise were identified as contributing factors to sleep deprivation in the research tool. According to Vaidya et al. (2021),

environmental disturbances including nighttime noise are among the leading disruptors of sleep among residential students in India. The finding that nearly half of the respondents reside in hostels suggests that environmental factors may play a significant role in the sleep patterns of professional course students in Thiruvananthapuram.

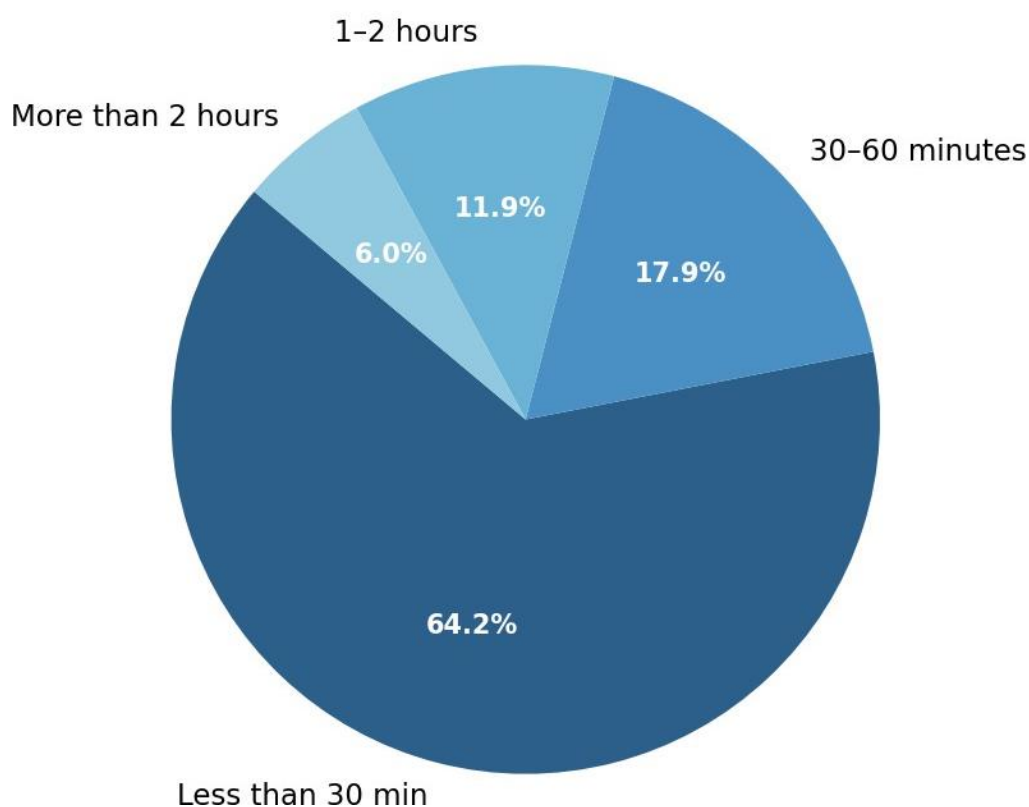


Figure 4.2.5: Average Daily Travel Time

Figure 4.2.5 shows the average daily travel time of respondents. The majority of respondents (64.2%) had a daily travel time of less than 30 minutes, while 17.9% travelled between 30–60 minutes. A smaller proportion travelled for 1–2 hours (11.9%) and more than 2 hours (6.0%). The predominantly short travel times among respondents are consistent with the fact that a large proportion of the sample resided in hostels or paying guest accommodations near their institutions. According to Chutani et al. (2017), long travel time is a significant contributor to sleep deprivation among day scholars in urban Indian cities. However, in this sample, the majority of students had short commutes,

suggesting that travel time may be a less significant contributor to sleep deprivation compared to academic and lifestyle factors.

4.3. Sleep Patterns of Respondents

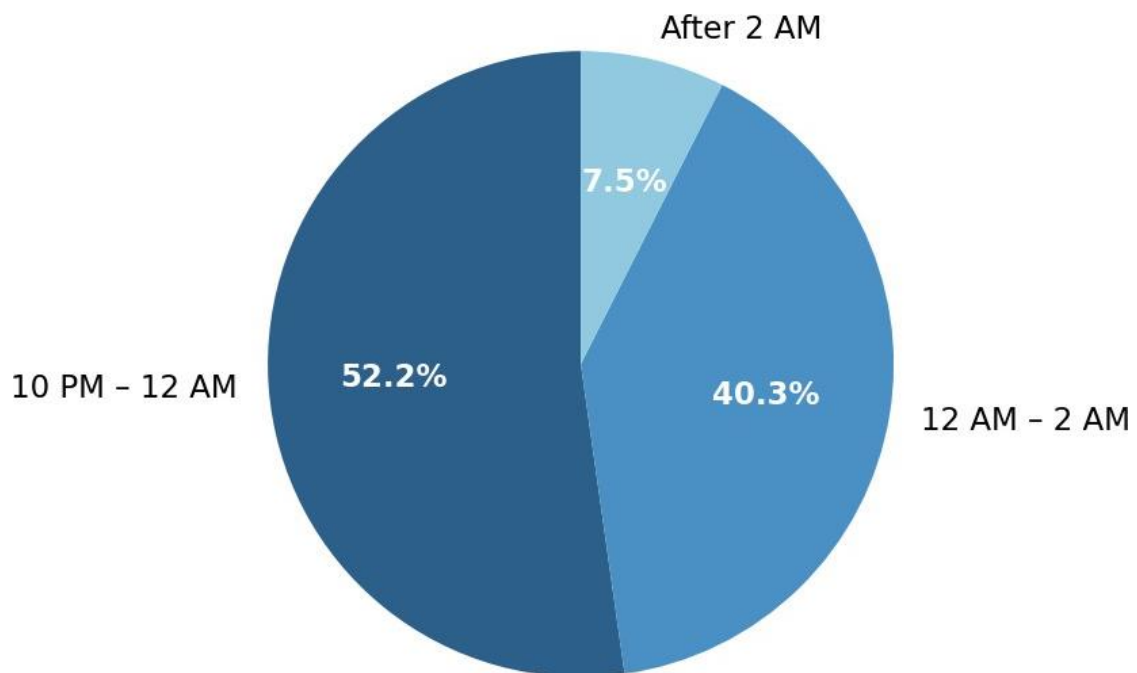


Figure 4.3. 1: Usual Bedtime

Figure 4.3.1 shows the usual bedtime of respondents. More than half of the respondents (52.2%) reported going to bed between 10 PM and 12 AM, while a significant proportion (40.3%) slept between 12 AM and 2 AM. A smaller group (7.5%) reported sleeping after 2 AM. This indicates that nearly half of the students have significantly delayed sleep schedules, which directly reduces their total sleep duration given typical morning class timings in professional courses. According to the National Sleep Foundation (2015), the recommended bedtime for young adults to obtain sufficient sleep is between 10 PM and 11 PM. The finding that 47.8% of students go to bed after midnight is therefore a significant indicator of sleep deprivation risk among professional course students in Thiruvananthapuram. Kaur and Singh (2017) similarly found that delayed sleep schedules were highly prevalent among Indian college students, particularly those in professional courses.

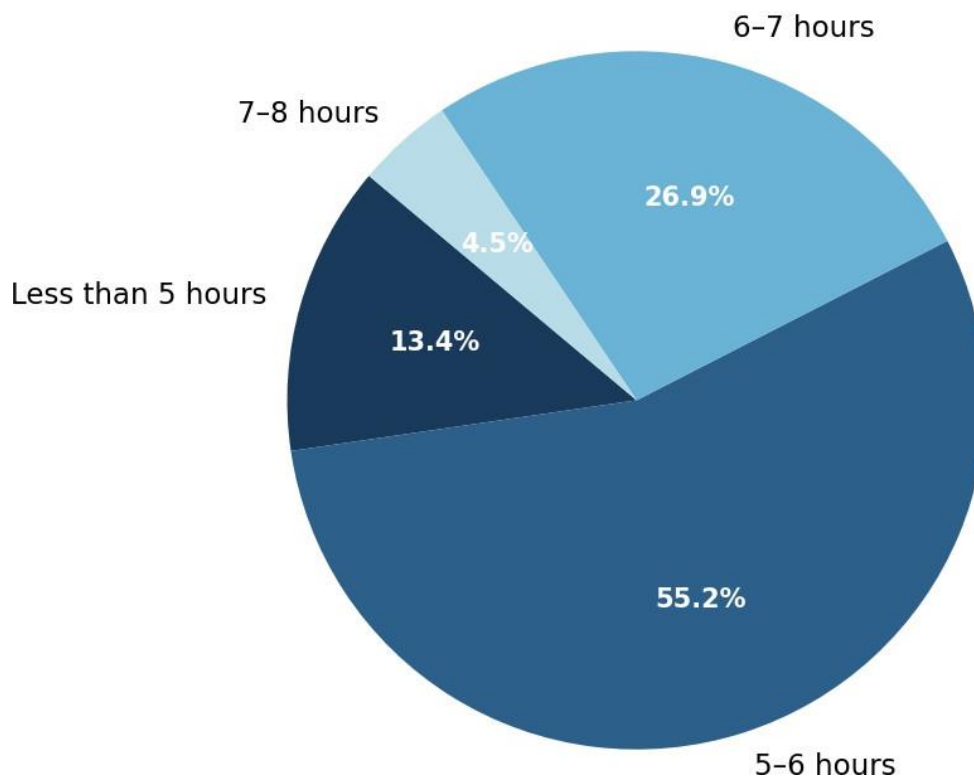


Figure 4.3. 2: Average Sleep Duration Per night

Figure 4.3.2 shows the average sleep duration per night of respondents. A striking majority of respondents (55.2%) slept only 5–6 hours per night, and 13.4% slept less than 5 hours. Only 26.9% slept 6–7 hours and a mere 4.5% achieved the recommended 7–8 hours of sleep. This means that 68.6% of students slept less than 6 hours per night, well below the recommended 7–9 hours for young adults as specified by the American Academy of Sleep Medicine (AASM, 2015). This finding is consistent with the NIH (2014) report which states that 70% of college students attain insufficient sleep. Saroha et al. (2025) similarly found progressive declines in academic performance and cognitive functioning among Indian medical students as sleep deprivation worsened over time, reinforcing the significance of the present finding.

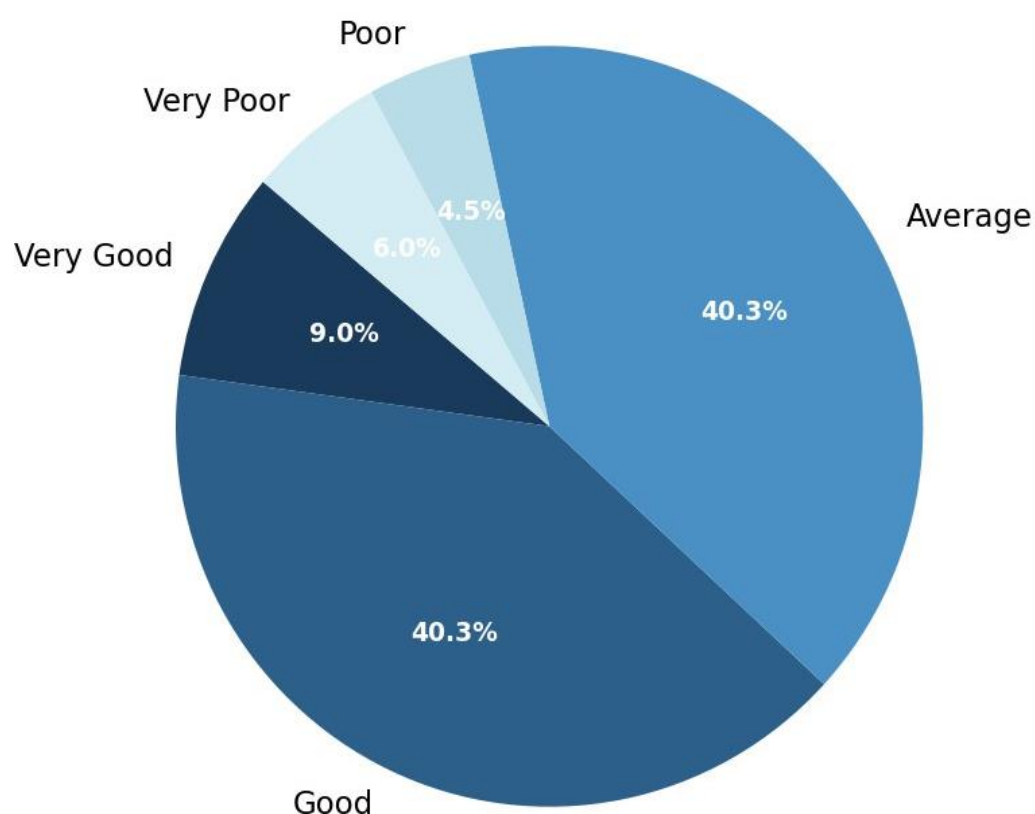


Figure 4.3. 3: Overall Sleep Quality

Figure 4.3.3 shows the overall sleep quality of respondents. Only 9.0% of respondents reported very good sleep quality, while 40.3% rated their sleep as good and another 40.3% as average. A combined 10.5% reported poor or very poor sleep quality. This means that over 50% of students did not experience good quality sleep, reinforcing the findings on sleep duration and indicating that sleep deprivation among professional course students in Thiruvananthapuram is not merely about quantity but also quality. According to Madhusudan et al. (2019), poor sleep quality was prevalent among undergraduate medical students in Kerala and was significantly linked to academic performance, a finding consistent with the present study. George et al. (2024) also found that 55% of professional course students in South India reported poor sleep quality, which closely aligns with the present findings.

4.4. Sleep Disturbances Among Respondents

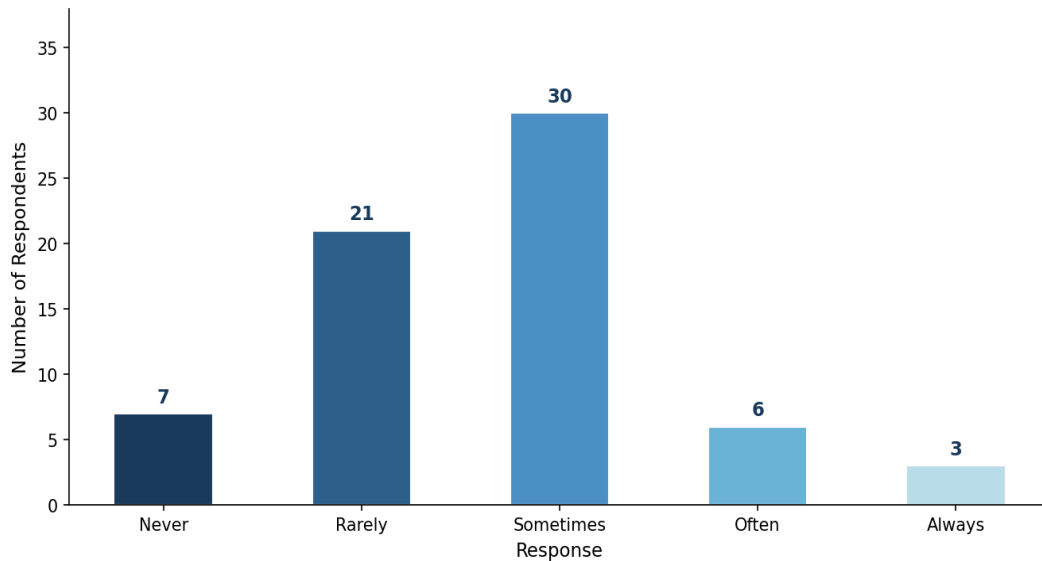


Figure 4.4.1: Difficulty Falling Asleep

Figure 4.4.1 shows the frequency of difficulty falling asleep among respondents. 44.8% of students sometimes had difficulty falling asleep, while 13.5% experienced it often or always. Only 10.4% never faced this issue. Difficulty initiating sleep is a hallmark symptom of insomnia and is closely associated with stress and anxiety. According to the Insomnia Severity Index (Morin et al., 2011), difficulty falling asleep is one of the primary indicators of clinically significant insomnia. The finding that over half of the respondents experienced this difficulty at least sometimes is consistent with Lee et al. (2022), who found that poor sleep initiation was prevalent among postgraduate students experiencing high levels of academic stress.

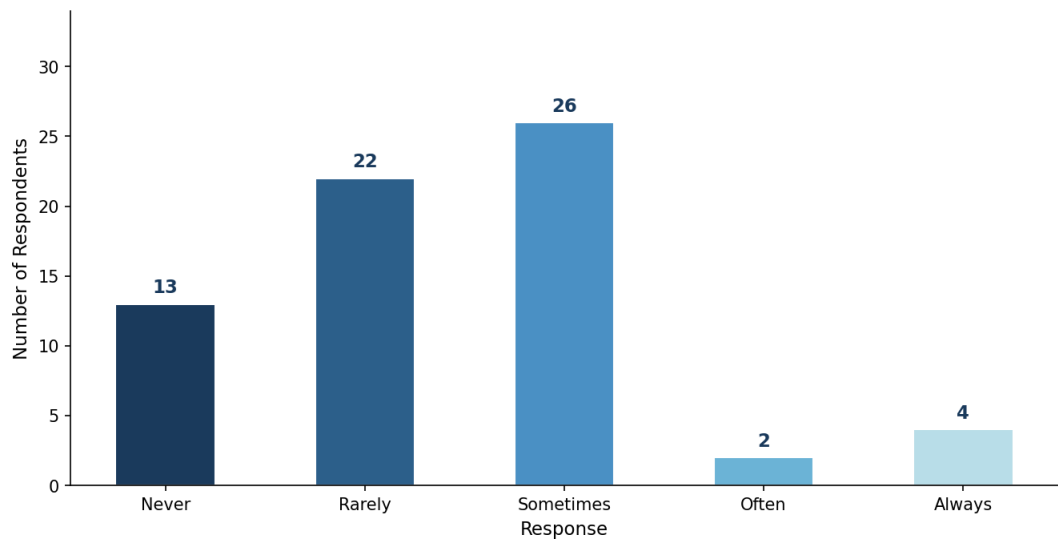


Figure 4.4 2: Woken Up During Night and Struggled to Sleep Again

Figure 4.4.2 shows the frequency of waking up during the night and struggling to return to sleep. 38.8% reported sometimes experiencing this, while 9% experienced it often or always. Sleep continuity disturbances such as nighttime awakening are strongly associated with poor sleep quality and daytime fatigue. Vaidya et al. (2021) found that nighttime noise and bathroom urges were leading disruptors of sleep continuity among Indian adolescents and students, a finding that is particularly relevant given that 43.3% of respondents in this study reside in hostels where environmental noise is a common concern.

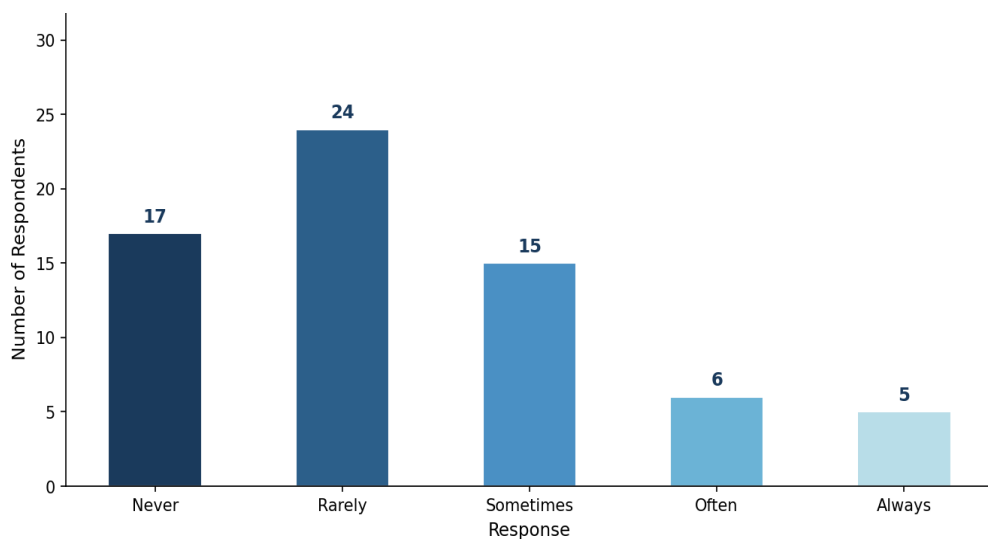


Figure 4.4.3: Woken up too early and could not go back to sleep

Figure 4.4.3 shows the frequency of waking up too early and being unable to return to sleep. 22.4% sometimes experienced this, while 16.5% experienced it often or always. Early morning awakening is a common symptom of sleep deprivation and is often linked to anxiety about the upcoming day's academic responsibilities. According to Lo et al. (2016), sleep-restricted adolescents and young adults frequently report early morning awakening as a consequence of disrupted sleep architecture, which further reduces total sleep time and impairs next-day cognitive functioning.

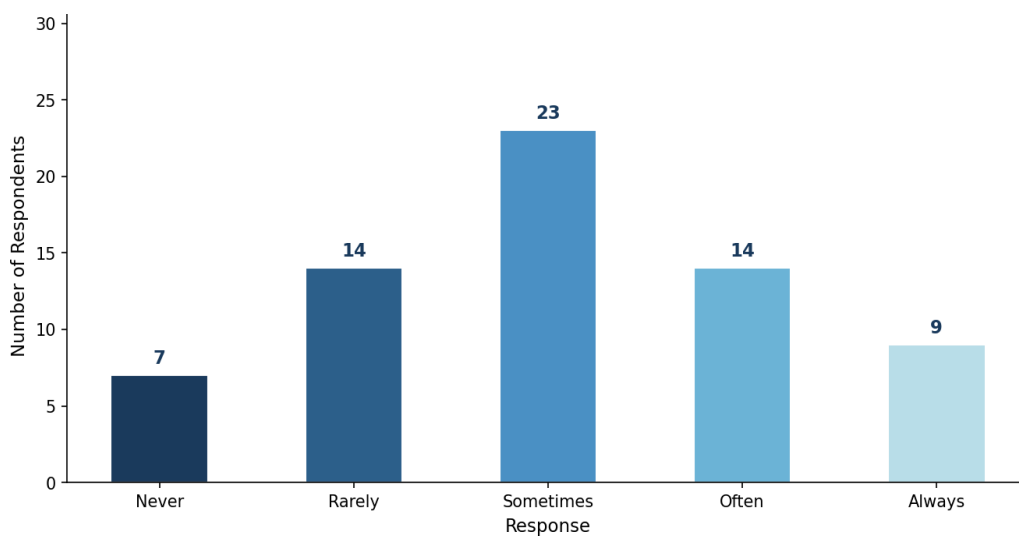


Figure 4.4.4: Felt Dissatisfied with sleep

Figure 4.4.4 shows the frequency of sleep dissatisfaction among respondents. A combined 34.3% of students reported feeling dissatisfied with their sleep often or always, while 34.3% sometimes felt this way. Only 10.4% never experienced sleep dissatisfaction. Sleep dissatisfaction is a subjective but critical indicator of sleep quality and is strongly associated with daytime impairment. Francis et al. (2023) found that high levels of perceived stress were significantly associated with sleep dissatisfaction among medical students in North Kerala, which is consistent with the present finding that academic stress is a major contributor to sleep deprivation in this sample.

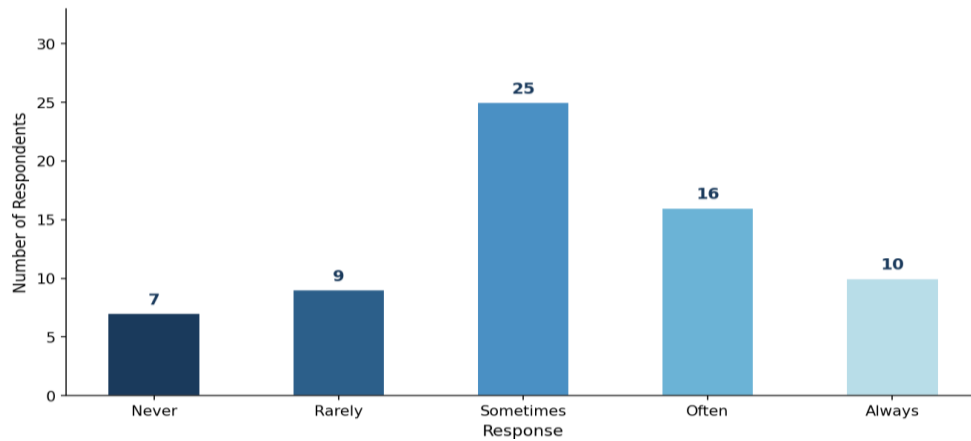


Figure 4.4.5: Worried about not getting enough sleep

Figure 4.4.5 shows the frequency of worry about not getting enough sleep. A significant 38.8% of students worried about not getting enough sleep often or always, and 37.3% worried sometimes. Sleep-related worry is a recognised cognitive factor that perpetuates insomnia by creating a feedback loop in which anxiety about sleep itself further disrupts the ability to fall and stay asleep. According to Noor and Dangwal (2025), sleep-related anxiety is a significant psychological consequence of chronic sleep deprivation among Indian college students, contributing to a cycle of worsening sleep quality and emotional distress.

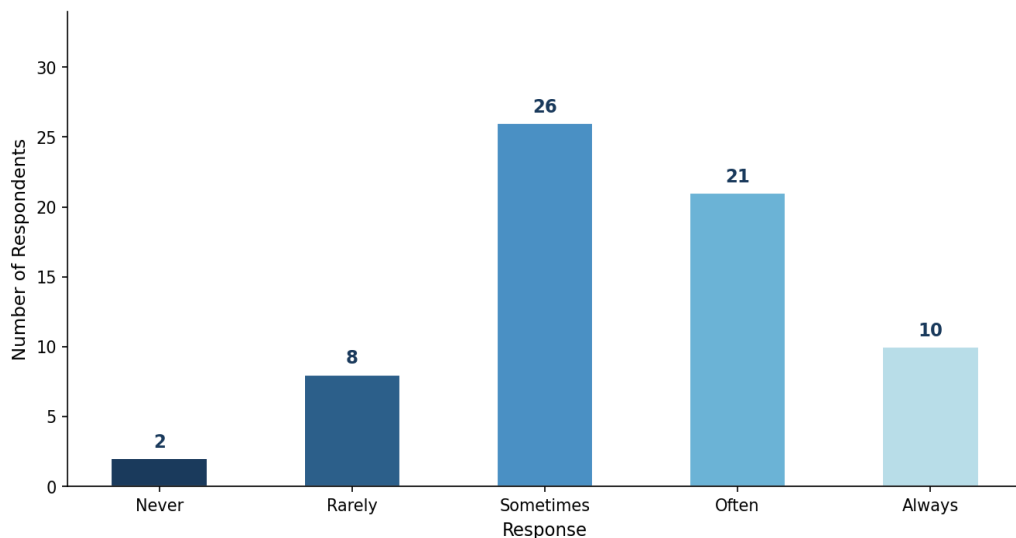


Figure 4.4. 6: Felt Tired or Sleepy during the day

Figure 4.4.6. shows the frequency of daytime tiredness and sleepiness. This was the most prominently reported disturbance in the study. A combined 46.2% of students felt tired or sleepy during the day often or always, and 38.8% felt this sometimes. Only 3% never experienced daytime sleepiness. This finding is consistent with Kaur and Singh (2017), who found a high prevalence of excessive daytime sleepiness (45%) among Indian college students in professional courses. Maithani et al. (2024) similarly found that 47.8% of professional college students in South India experienced moderate to severe daytime sleepiness, closely mirroring the findings of the present study.

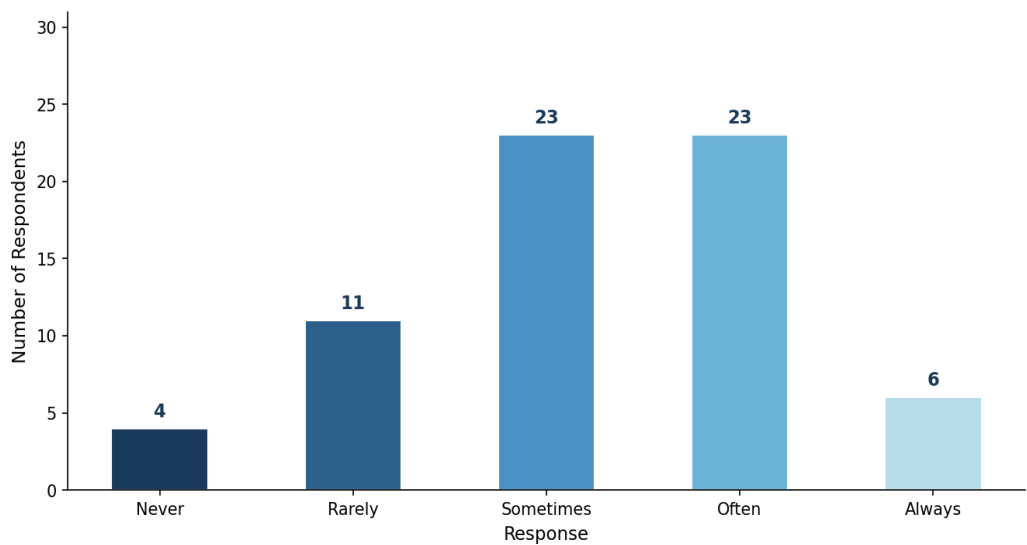


Figure 4.4.7: Felt Uregfreshed After Waking up

Table 4.4.7 shows the frequency of feeling unrefreshed after waking up. 43.3% of students felt unrefreshed after waking up often or always, and 34.3% felt this sometimes. Only 6% never experienced this. Feeling unrefreshed upon waking is a critical indicator of non-restorative sleep, which occurs when the sleep obtained is insufficient in either quantity or quality to restore the body and mind. According to Abrams (2015), non-restorative sleep is one of the most debilitating consequences of chronic sleep deprivation, as it leaves individuals physically and mentally depleted despite having slept, directly impairing their capacity for academic engagement and cognitive performance.

4.5. Factors Contributing to Sleep Deprivation

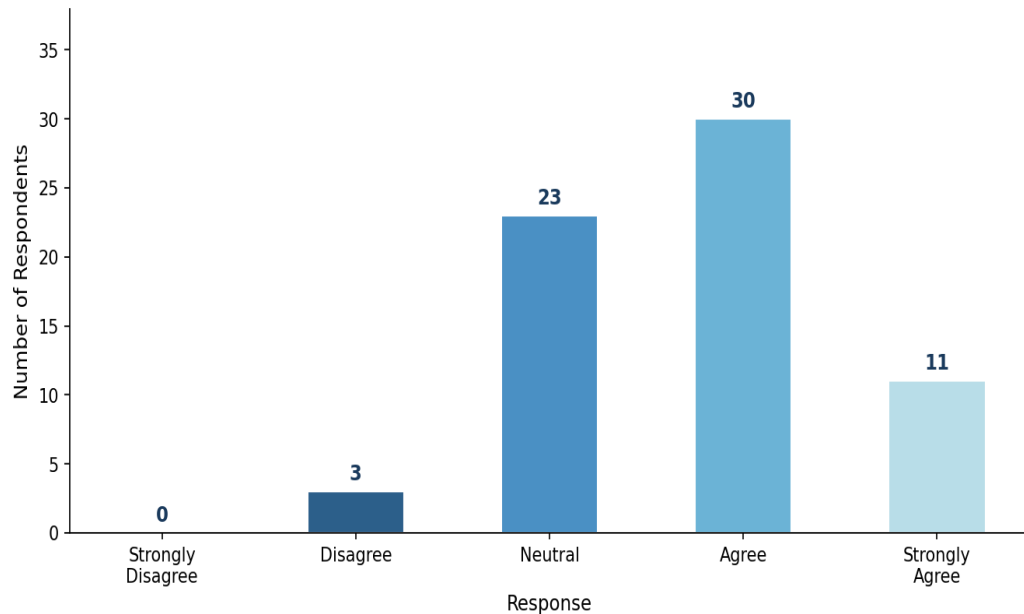


Figure 4.5. 1: Heavy Academic Workload Reduces Sleep

Figure 4.5.1 shows respondents' agreement that heavy academic workload reduces their sleep. A combined 61.2% of students agreed or strongly agreed that heavy academic workload reduces their sleep. Only 4.5% disagreed, indicating that academic workload is one of the strongest contributors to sleep deprivation. This finding is consistent with Maithani et al. (2024), who identified academic workload as a primary factor affecting sleep quality among professional college students in South India. The absence of any strongly disagree responses further underscores the universally perceived impact of academic workload on sleep among professional course students in Thiruvananthapuram.

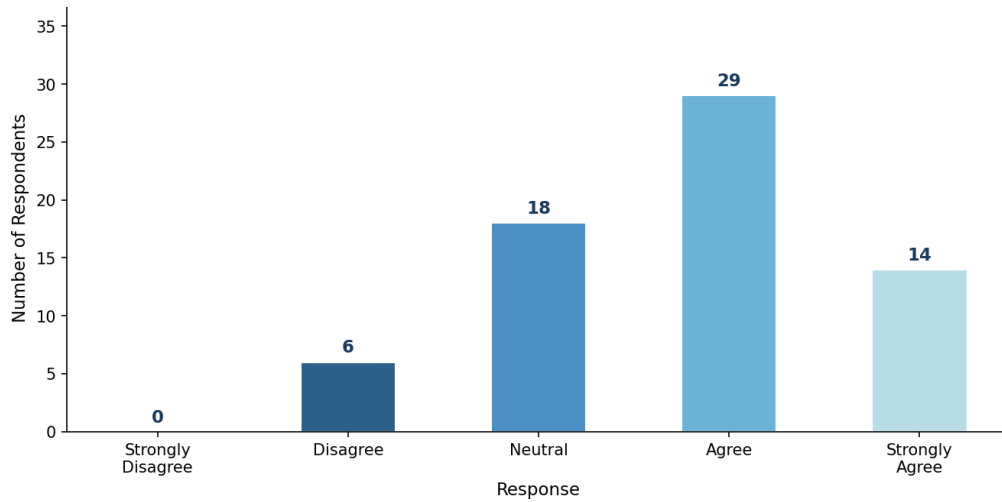


Figure 4.5. 2: Frequet Exams and Assignments Disturb Sleep

Figure 4.5.2 shows respondents' agreement that frequent exams and assignments disturb their sleep. 64.2% of respondents agreed or strongly agreed that frequent exams and assignments disturb their sleep, making this the most strongly endorsed academic factor in the study. This finding is strongly supported by George et al. (2024), who found that examination pressure was a primary driver of poor sleep quality among professional course students in South India. The correlation analysis further confirmed that exams and late night studying were strongly intercorrelated ($r = 0.615$, $p < 0.001$), indicating that examination pressure directly leads to late night studying and consequently to sleep deprivation.

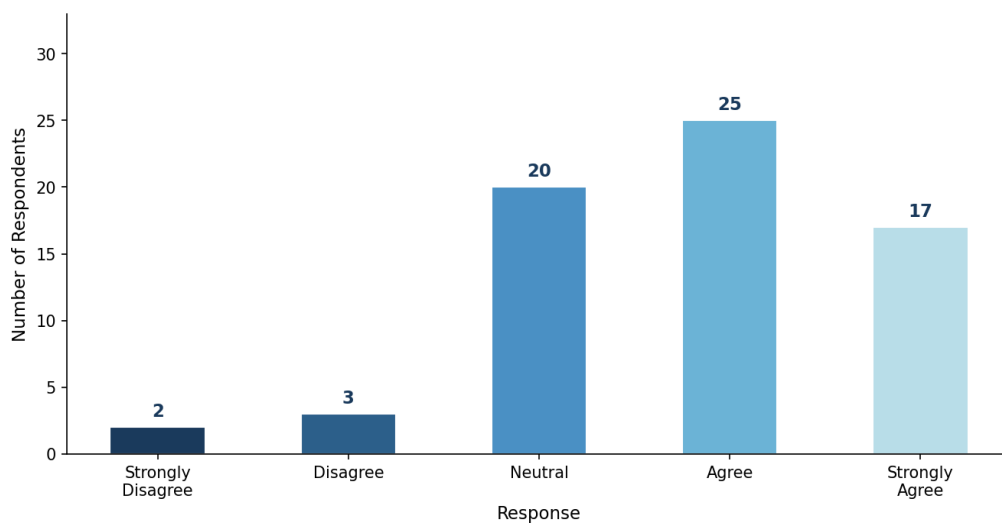


Figure 4.5.3 shows respondents' agreement that late night studying affects their sleep duration. 62.7% of students agreed or strongly agreed that late night studying affects their sleep duration. This finding is directly supported by the correlation analysis, which found that late night studying was the only factor that directly and significantly reduced sleep duration ($r = -0.279$, $p = 0.022$). This is consistent with the bedtime data presented in Table 4.6, where 47.8% of students reported going to bed after midnight, confirming that late night academic activity is a primary behavioural driver of sleep deprivation among professional course students in Thiruvananthapuram.

Figure 4.5. 3: Late Night Studying Affect Sleep Duration

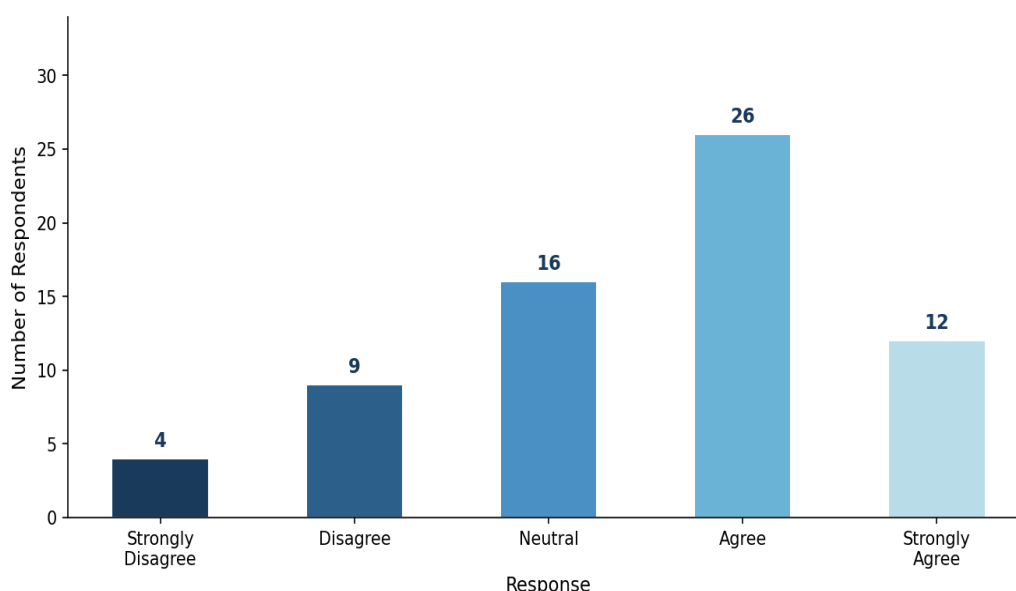


Figure 4.5.4: mobile phone use before sleep disturbs sleep quality

Table 4.5.4 shows respondents' agreement that mobile phone use before sleep reduces their sleep quality. 56.7% of students agreed or strongly agreed that mobile phone use before sleep reduces their sleep quality. This finding is consistent with Maurya et al. (2022), who found in a large-scale study of 16,292 Indian adolescents and young adults that increased smartphone screen time was significantly associated with a higher likelihood of sleep problems. The correlation analysis also revealed a very strong positive correlation between

phone use and social media ($r = 0.780$, $p < 0.001$), confirming that mobile phone use and social media engagement are inseparable pre-sleep habits that together contribute to delayed bedtimes and reduced sleep quality.

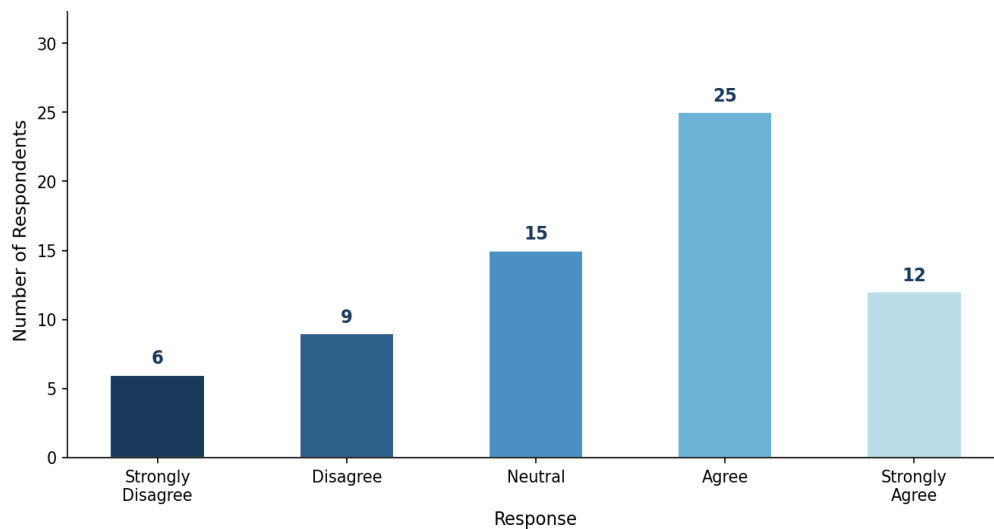


Figure 4.5.5: Social Media Usage at Night

Figure 4.5.5 shows respondents' agreement that social media usage at night affects their sleep. 55.2% agreed or strongly agreed that social media usage at night affects their sleep. Combined with the mobile phone finding above, this confirms that nighttime screen use is a major lifestyle-related contributor to sleep deprivation in this population. According to George et al. (2024), pre-sleep screen use including social media was identified as one of the most modifiable sleep disruptors among professional course students in South India, suggesting that targeted awareness interventions could significantly improve sleep hygiene among this population.

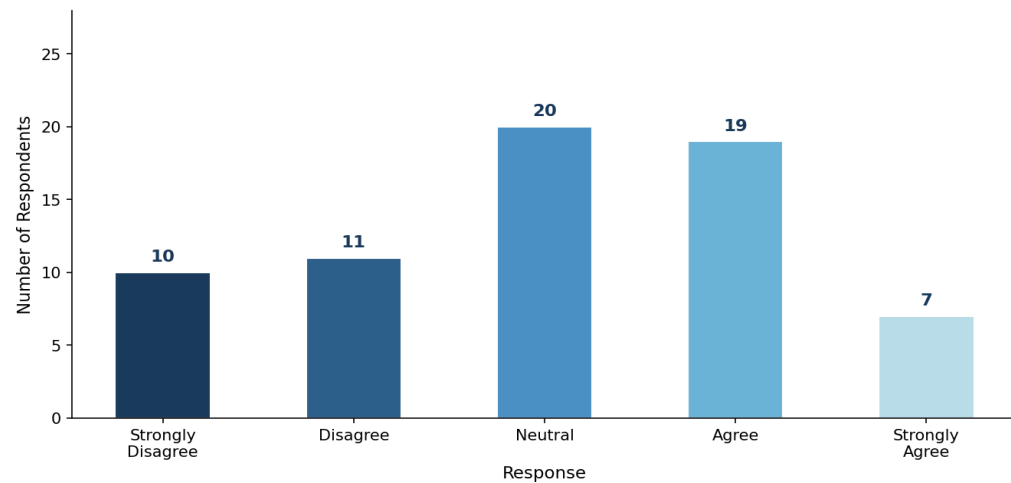


Figure 4.5. 6: Watching Movies at Night

Figure 4.5.6 shows respondents' agreement that watching movies or series at night reduces their sleep. 38.8% agreed or strongly agreed that watching movies or series at night affects

their sleep, while 31.3% disagreed or strongly disagreed. This was the least strongly endorsed lifestyle factor in the study, suggesting that binge-watching is a contributing factor for some but not all students. However, the correlation analysis found a strong positive relationship between social media use and movie watching ($r = 0.731$, $p < 0.001$), indicating that students who engage in social media at night are also likely to watch movies or series, further compounding their pre-sleep screen exposure.

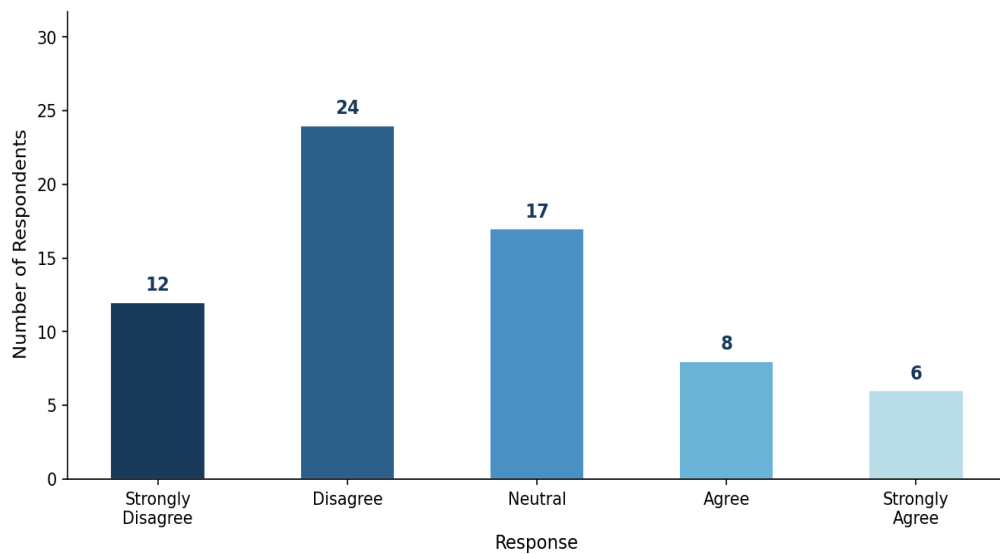


Figure 4.5.7: Long travel time

Figure 4.5.7 shows respondents' agreement that long travel time reduces their sleep hours. The majority of respondents (53.7%) disagreed or strongly disagreed that long travel time reduces their sleep hours, which is consistent with the demographic finding in Table 4.5 that 64.2% of students had a daily travel time of less than 30 minutes. Travel time therefore appears to be a less significant contributor to sleep deprivation in this particular sample. This is in contrast to Chutani et al. (2017), who found that long travel times were a major sleep disruptor among day scholars in metropolitan Indian cities, suggesting that the impact of travel time on sleep may be more context-specific and dependent on the geographic and infrastructural characteristics of the study setting.

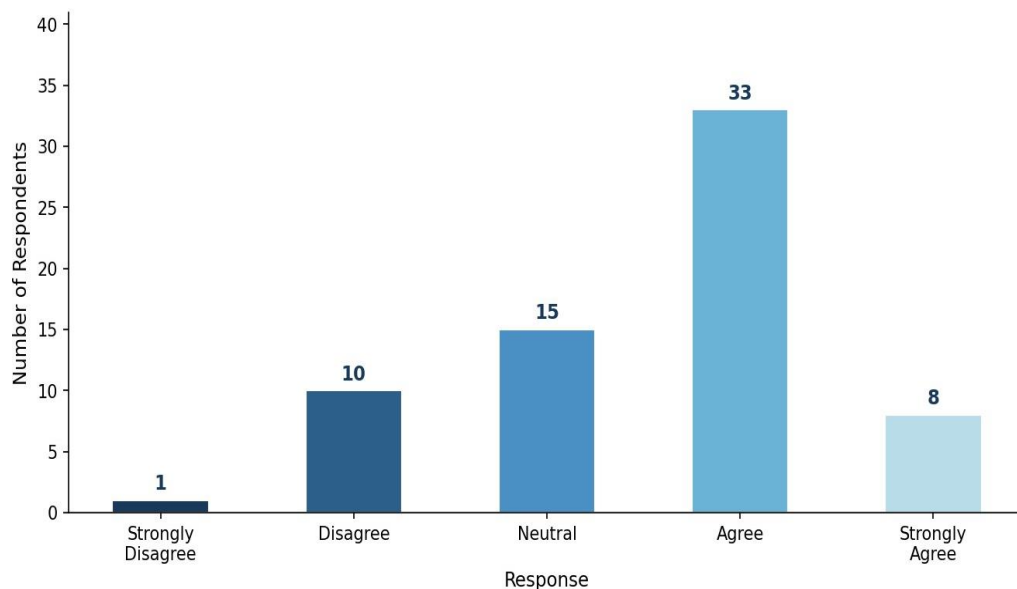


Figure 4.5. 8: Academic Stress

Figure 4.5.8 shows respondents' agreement that academic stress makes it difficult to sleep peacefully. 61.2% of students agreed or strongly agreed that academic stress makes it difficult to sleep peacefully. This was one of the most strongly endorsed items in Section D and highlights the critical role of psychological academic pressure, beyond just workload and studying time, in disrupting sleep. According to Francis et al. (2023), academic stress was significantly associated with poor sleep quality among postgraduate medical

students in North Kerala, directly supporting the present finding. The correlation analysis further confirmed that workload and academic stress are strongly intercorrelated ($r = 0.614$, $p < 0.001$), indicating that these academic pressures collectively drive sleep deprivation among professional course students

4.6. Impact of Sleep Deprivation on Academic Performance

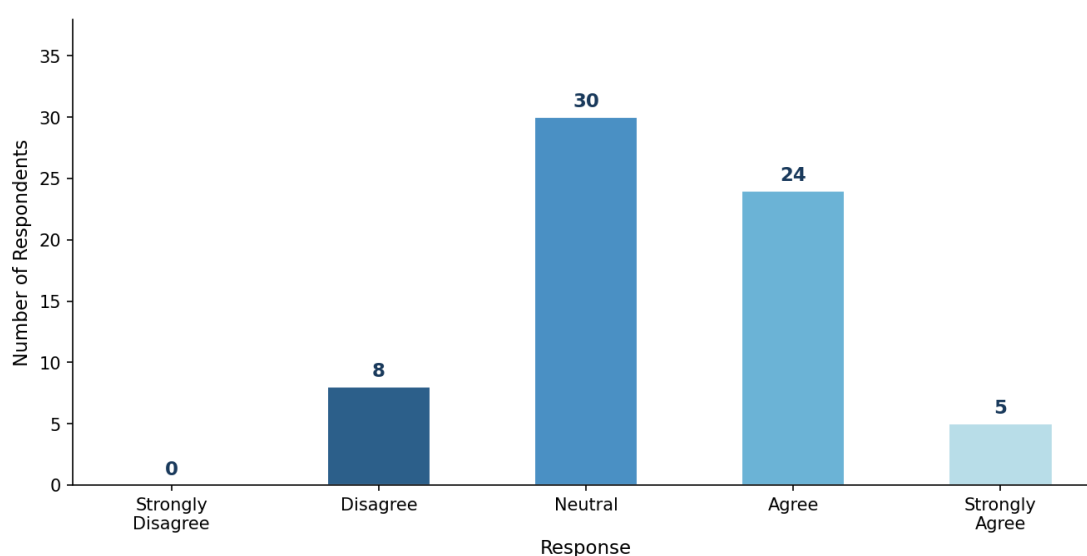


Figure 4.6.1 Difficulty in Concentration

Figure 4.6.1 shows respondents' agreement that lack of sleep makes it difficult to concentrate in class. 43.3% of students agreed or strongly agreed that lack of sleep makes it difficult to concentrate in class, while 44.8% remained neutral. The high neutral response suggests that while concentration difficulties are real, students may not always directly attribute them to sleep deprivation, possibly due to the multiple competing stressors they face simultaneously. The correlation analysis found a significant positive correlation between memory and concentration ($r = 0.440$, $p < 0.001$), confirming that these two cognitive functions are closely interconnected and simultaneously impaired by sleep deprivation. According to Lo et al. (2016), sustained attention, a key component of classroom concentration, was among the first cognitive functions to decline in sleep-deprived adolescents and young adults.

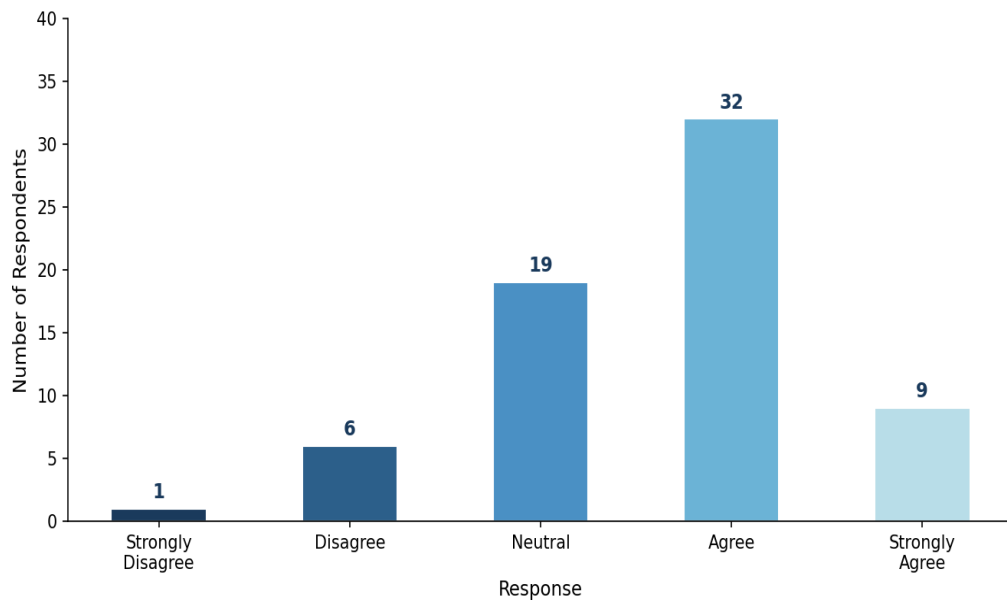


Figure 4.6. 1: Lack of Memory

Figure 4.6.2 shows respondents' agreement that sleep deprivation affects their memory and recall ability. 61.2% of respondents agreed or strongly agreed that sleep deprivation affects their memory and recall ability. This is one of the most strongly endorsed items in Section E and highlights the significant cognitive cost of inadequate sleep. Memory consolidation is a critical function of sleep, particularly during the rapid eye movement (REM) phase, and disruption of this phase directly impairs the ability to retain and recall information. The correlation analysis confirmed a significant positive relationship between memory impairment and overall academic performance decline ($r = 0.354$, $p = 0.003$), establishing memory as a key pathway through which sleep deprivation affects academic outcomes. This is consistent with Saroha et al. (2025), who found that working memory and executive function were significantly impaired among sleep-deprived Indian medical students.

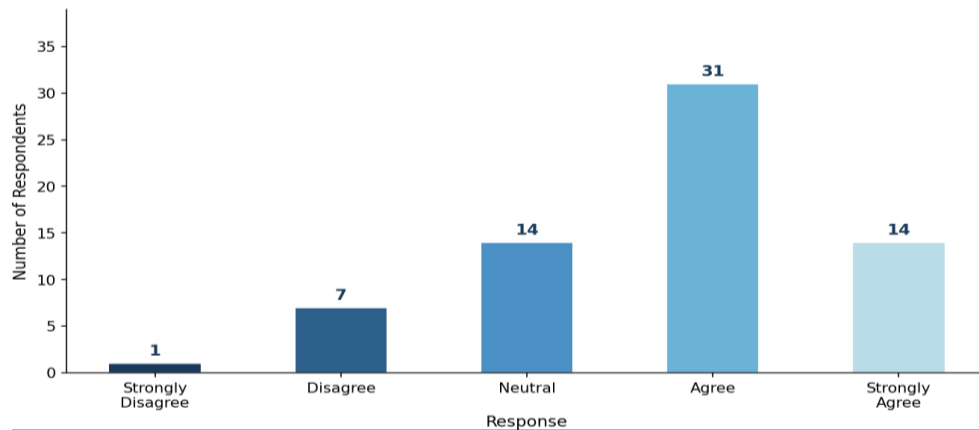


Figure 4.6. 2: Feeling Sleepy During Class

Figure 4.6.3 shows respondents' agreement that they feel sleepy during lectures. This was the most strongly endorsed item in Section E, with 67.2% of students agreeing or strongly agreeing that they feel sleepy during lectures. Only 11.9% disagreed, making classroom sleepiness the most visible and direct academic consequence of sleep deprivation in this study. Kaur and Singh (2017) similarly found excessive daytime sleepiness to be highly prevalent among professional course students in India, with classroom sleepiness being among the most commonly reported manifestations. The finding is further supported by Maithani et al. (2024), who identified daytime sleepiness during academic activities as a significant consequence of sleep deprivation among South Indian professional course students.

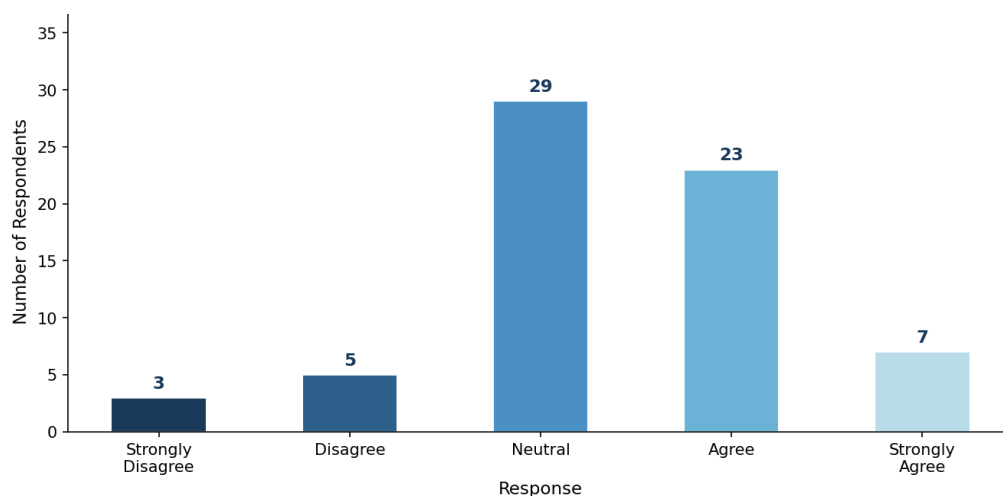


Figure 4.6. 3: Making Academic Mistakes

Figure 4.6.4 shows respondents' agreement that sleep deprivation leads to more academic mistakes. 44.7% of students agreed or strongly agreed that sleep deprivation leads to more academic mistakes, while 43.3% remained neutral. The high neutral response suggests that students may not always directly attribute their academic errors to sleep loss, even though this relationship is well established in scientific literature. According to Lo et al. (2016), executive function, which governs decision-making, error monitoring, and problem-solving, was significantly impaired after just one week of sleep restriction among young adults, directly increasing their likelihood of making mistakes in academic and cognitive tasks.

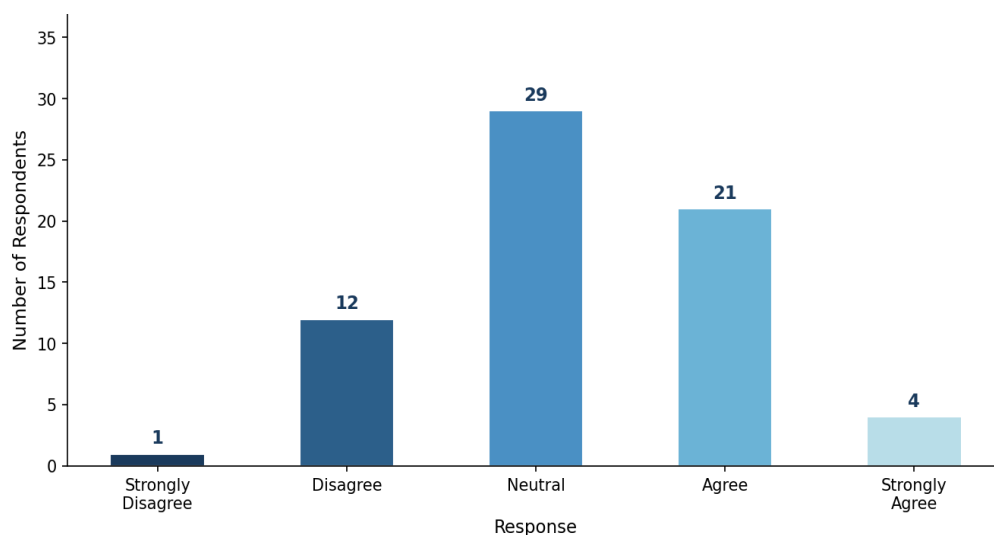


Figure 4.6. 4: Declined Academic Performance

Figure 4.6.5 shows respondents' agreement that their overall academic performance has decreased due to sleep deprivation. 37.3% of students agreed or strongly agreed that their overall academic performance has decreased due to sleep deprivation, while 43.3% were neutral and 19.4% disagreed. The relatively moderate agreement and high neutral response may reflect the difficulty students face in isolating sleep deprivation as the sole cause of academic decline, given the numerous simultaneous stressors they experience. Nevertheless, the correlation analysis found a significant positive relationship between memory impairment and academic performance decline ($r = 0.354$, p

= 0.003), providing statistical evidence for the connection between sleep deprivation-induced cognitive impairment and reduced academic performance. This is consistent with Jaiswal (2025), who found that sleep-deprived Delhi adolescents scored significantly lower academically than their well-rested peers.

4.7. Psychological Effects of Sleep Deprivation

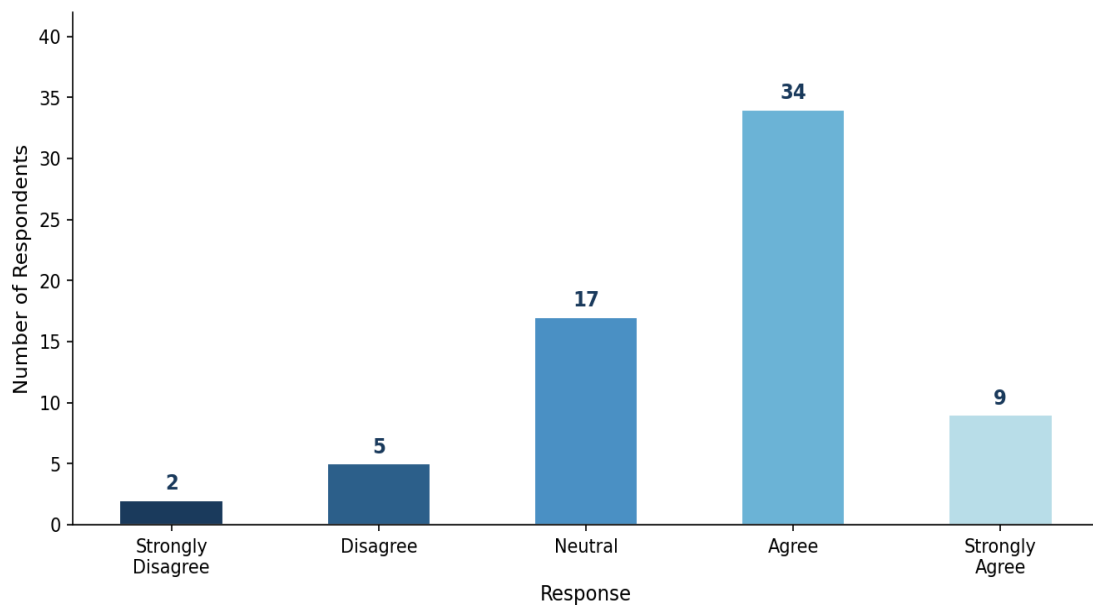


Figure 4.7. 1: Increased Stress Level

Figure 4.7.1 shows respondents' agreement that lack of sleep increases their stress levels. 64.1% of students agreed or strongly agreed that lack of sleep increases their stress levels, confirming a strong perceived relationship between sleep deprivation and heightened stress. The correlation analysis found a significant positive relationship between stress and anxiety ($r = 0.390$, $p = 0.001$) and between stress and irritability ($r = 0.565$, $p < 0.001$), indicating that stress does not manifest in isolation but as part of a broader cluster of psychological disturbances. According to Noor and Dangwal (2025), chronic sleep deprivation is strongly associated with heightened stress reactivity among Indian college students, creating a self-reinforcing cycle where stress disrupts sleep and inadequate sleep in turn amplifies stress responses.

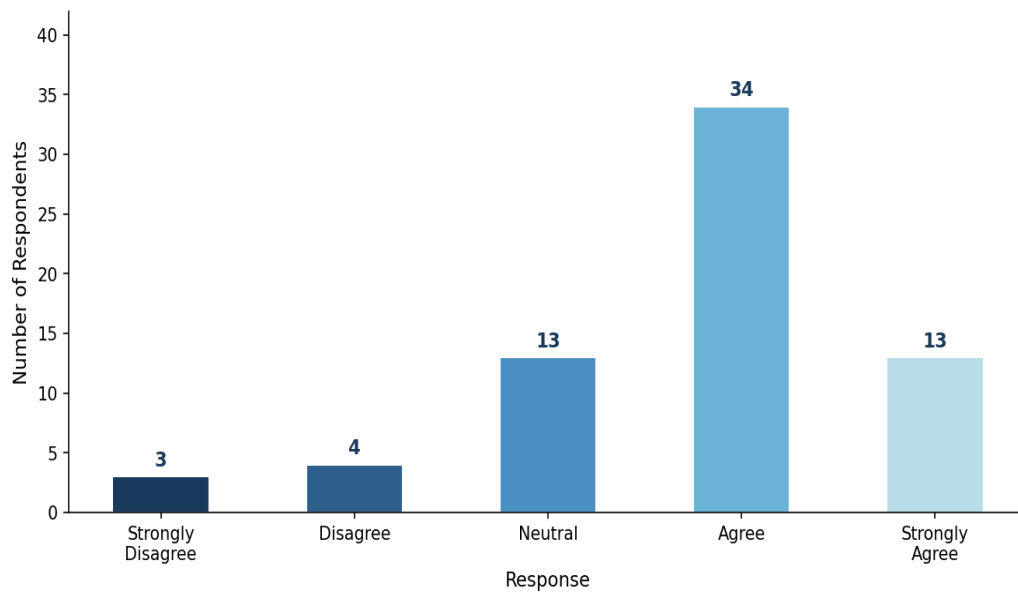


Figure 4.7. 2: Easily Irritated

Figure 4.7.2 shows respondents' agreement that sleep deprivation makes them easily irritable. 70.1% of respondents agreed or strongly agreed that sleep deprivation makes them easily irritable, the highest agreement rate in the entire Section F and one of the highest in the entire study. This strongly indicates that emotional regulation is significantly compromised by inadequate sleep, which can negatively affect interpersonal relationships, classroom behaviour, and overall social functioning. The correlation analysis confirmed that irritability and anxiety are significantly intercorrelated ($r = 0.412$, $p = 0.001$), suggesting that emotional dysregulation due to sleep deprivation has far-reaching consequences for student well-being. This finding is consistent with the International Journal of Indian Psychology (2025), which identified irritability as one of the most commonly reported emotional consequences of sleep deprivation among Indian college students.

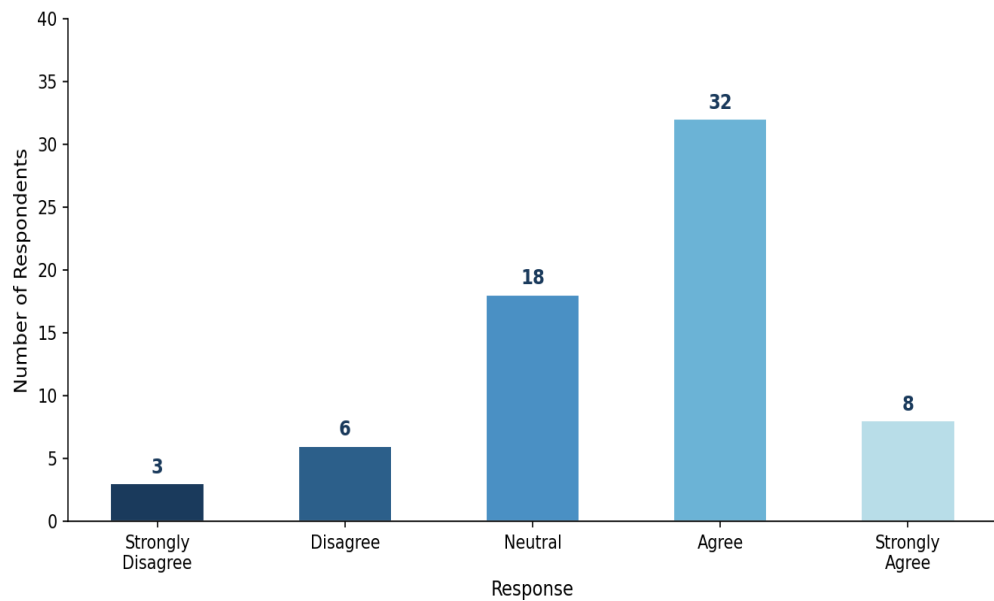


Figure 4.7. 3: Feeling Emotionally Low

Figure 4.7.3 shows respondents' agreement that inadequate sleep leaves them feeling emotionally low. 59.7% of students agreed or strongly agreed that inadequate sleep leaves them feeling emotionally low. This finding is particularly significant as it points to the potential link between sleep deprivation and depressive symptomatology. According to Jaiswal (2025), 60% of sleep-deprived adolescents in Delhi showed signs of depression, and sleep deprivation was identified as a significant predictor of depressive symptoms among young students in India. The present finding suggests that professional course students in Thiruvananthapuram may similarly be at risk of developing depressive symptoms as a consequence of chronic sleep deprivation.

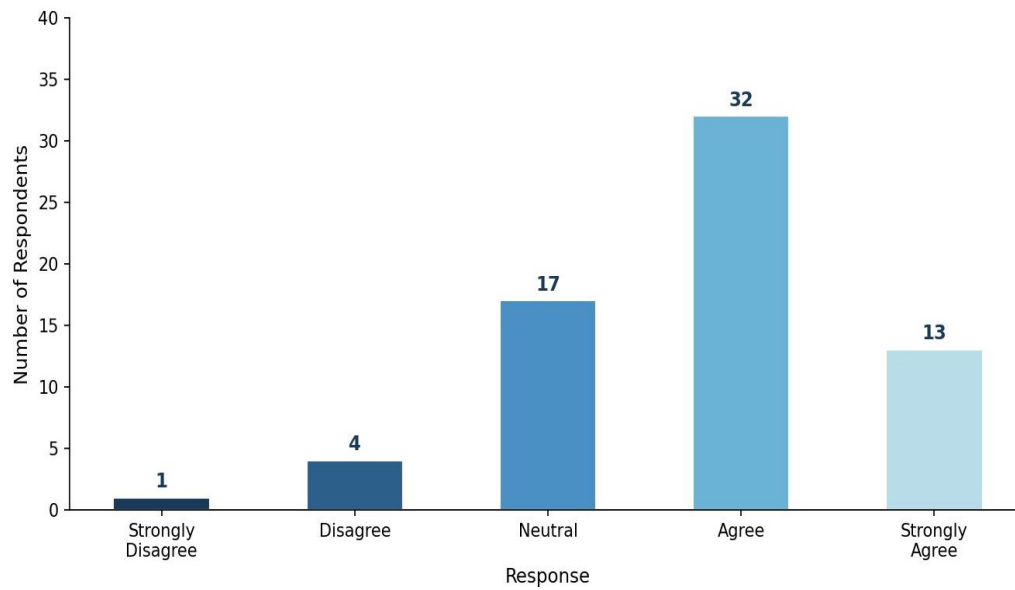


Figure 4.7.4: Lack of Motivation

Figure 4.7.4 shows respondents' agreement that sleep deprivation reduces their motivation for studies. 67.2% of students agreed or strongly agreed that sleep deprivation reduces their motivation for studies. This is a critically important finding as lack of motivation directly affects academic engagement, attendance, class participation, and overall academic investment. Reduced motivation creates a vicious cycle where sleep-deprived students disengage from their studies, fall behind on coursework, experience increased academic stress, and are consequently driven to study late at night, further worsening their sleep deprivation. According to Lo et al. (2016), mood disturbances including reduced motivation were among the earliest and most pronounced consequences of sleep restriction among young adults.

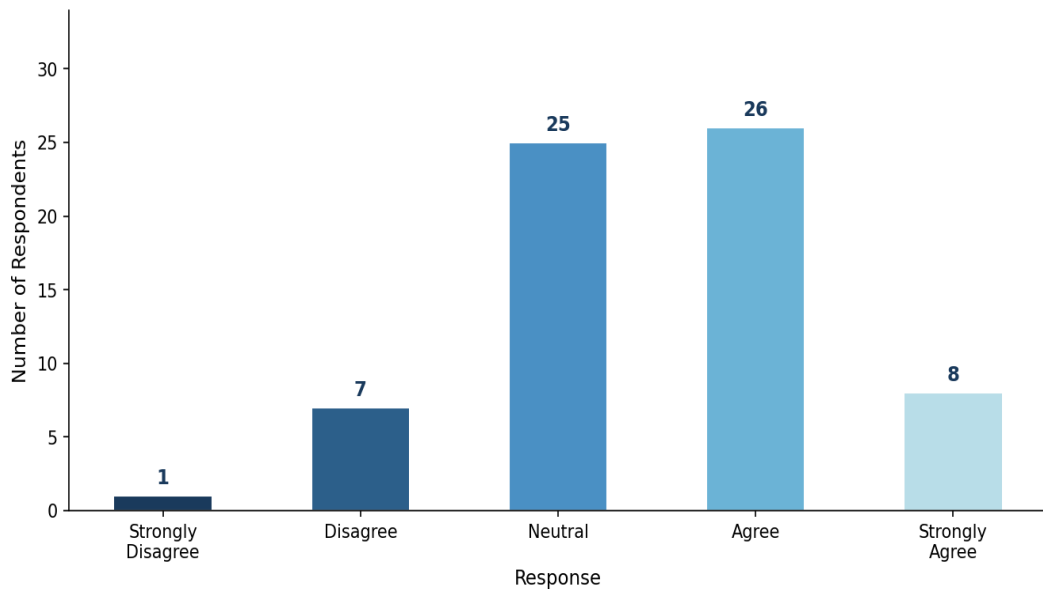


Figure 4.7. 5: Feeling Anxious

Figure 4.33 shows respondents' agreement that sleep deprivation makes them feel anxious about their academic responsibilities. 50.7% of students agreed or strongly agreed that sleep deprivation makes them feel anxious about their academic responsibilities. The relatively higher neutral response (37.3%) suggests that while academic anxiety due to sleep loss is common, some students may not directly connect their anxiety to sleep deprivation specifically. The correlation analysis found a significant positive relationship between anxiety and both stress ($r = 0.390$, $p = 0.001$) and irritability ($r = 0.412$, $p = 0.001$), confirming that academic anxiety is part of a broader psychological distress cluster triggered by inadequate sleep. According to Noor and Dangwal (2025), academic anxiety is one of the most debilitating psychological consequences of sleep deprivation among Indian college students, as it directly undermines students' confidence and ability to perform under examination conditions.

4.8. Reliability Analysis

Table 4.8.1: Cronbach's Alpha Values for Each Section

Section	Cronbach's Alpha	Number of Items	Interpretation
Section C – Sleep Disturbances	0.773	7	Acceptable
Section D – Contributing Factors	0.783	8	Acceptable
Section E – Academic Effects	0.761	5	Acceptable
Section F – Psychological Effects	0.858	5	Good
Overall Reliability	—	25	Reliable

Table 4.8.1 presents the Cronbach's Alpha reliability coefficients for all four Likert scale sections of the research tool. The internal consistency of the research tool was assessed using Cronbach's Alpha reliability analysis. The reliability coefficients for all four sections exceeded the acceptable threshold of 0.70 as recommended by Nunnally (1978), confirming that the tool is reliable and internally consistent in measuring its intended constructs. Section C (Sleep Disturbances) yielded an alpha of 0.773, Section D (Contributing Factors) yielded 0.783, and Section E (Academic Performance) yielded 0.761, all indicating acceptable reliability. Section F (Psychological Effects) yielded the highest alpha of 0.858, indicating good reliability and strong internal consistency among the psychological effect items. Overall, the tool demonstrates satisfactory internal consistency across all sections, validating its use for inferential analysis.

4.9. Chi-Square Analysis

Table 4.9.1: Chi-Square Test Results Summary

Variable 1	Variable 2	Chi-Square Value (χ^2)	df	p-value	Result
Sleep Duration	Gender	1.549	3	0.671	Not Significant
Sleep Duration	Course	15.341	15	0.427	Not Significant
Sleep Duration	Place of Stay	17.969	9	0.036	Significant
Sleep Duration	Travel Time	6.388	9	0.701	Not Significant
Sleep Quality	Course	24.302	20	0.229	Not Significant
Sleep Quality	Place of Stay	22.171	12	0.036	Significant

Table 4.9.1 presents the results of the Chi-Square tests conducted to examine the relationship between sleep deprivation and demographic variables.

The Chi-Square analysis revealed no significant relationship between sleep duration and gender ($\chi^2 = 1.549$, $p = 0.671$), indicating that both male and female professional course students in Thiruvananthapuram experience similar levels of sleep deprivation. This finding is somewhat inconsistent with Maurya et al. (2022), who found gender differences in smartphone-related sleep problems among Indian youth, though the present study's smaller sample size may have limited the ability to detect gender differences.

Similarly, no significant relationship was found between sleep duration and course of study ($\chi^2 = 15.341$, $p = 0.427$), or between sleep quality and course ($\chi^2 = 24.302$, $p = 0.229$). While MBBS students showed the highest proportion sleeping only 5–6 hours (85.7%), the differences across courses were not statistically significant, possibly due to the small subgroup sizes within each course. This finding suggests that sleep deprivation is a pervasive issue across all professional courses rather than being confined to any particular

discipline. No significant relationship was found between sleep duration and travel time ($\chi^2 = 6.388$, $p = 0.701$), consistent with the demographic finding that 64.2% of students had short travel times of less than 30 minutes. However, a significant relationship was found between sleep duration and place of stay ($\chi^2 = 17.969$, $df = 9$, $p = 0.036$, Cramer's $V = 0.299$), indicating a moderate association between living environment and sleep duration. Students living with family showed the highest proportion sleeping less than 5 hours (23.1%), while hostel students predominantly slept 5–6 hours (65.5%). Similarly, a significant relationship was found between sleep quality and place of stay ($\chi^2 = 22.171$, $df = 12$, $p = 0.036$, Cramer's $V = 0.332$), confirming that the living environment meaningfully influences both how long and how well students sleep. These findings are consistent with Vaidya et al. (2021), who identified environmental factors including household noise, living conditions, and residential setting as significant determinants of sleep quality among Indian students.

4.10. Correlation Analysis

Table 4.10.1: Spearman's Correlation: Sleep Duration and Academic Performance

Variable Pair	Correlation Coefficient (r)	p-value	Result
Sleep Duration vs. Concentration	-0.108	0.384	Not Significant
Sleep Duration vs. Memory	-0.234	0.057	Not Significant
Sleep Duration vs. Academic Performance	-0.027	0.826	Not Significant
Memory vs. Concentration	0.44	0	Significant
Memory vs. Academic Performance	0.354	0.003	Significant

Table 4.10.1 presents the Spearman's correlation results between sleep duration and academic performance variables. Sleep duration did not show a statistically significant direct correlation with concentration, memory, or overall academic performance individually. However, the negative direction of all correlations with sleep duration suggests a consistent trend where shorter sleep is associated with poorer academic outcomes. Significant positive correlations were found between memory and concentration ($r = 0.440$, $p < 0.001$) and between memory and academic performance ($r = 0.354$, $p = 0.003$), confirming that cognitive functions are strongly interconnected and collectively mediate the impact of sleep deprivation on academic outcomes. According to Saroha et al. (2025), the relationship between sleep deprivation and academic performance in Indian medical students operates primarily through the degradation of memory and attentional processes, which is consistent with the present finding.

Table 4.10.2: Spearman's Correlation: Sleep Duration and Psychological Effects

Variable Pair	Correlation Coefficient (r)	p-value	Result
Sleep Duration vs. Stress	-0.034	0.784	Not Significant
Sleep Duration vs. Irritability	-0.039	0.752	Not Significant
Sleep Duration vs. Anxiety	-0.121	0.33	Not Significant
Stress vs. Irritability	0.565	0	Significant
Stress vs. Anxiety	0.39	0.001	Significant
Irritability vs. Anxiety	0.412	0.001	Significant

Table 4.10.2 presents the Spearman's correlation results between sleep duration and psychological effect variables. While sleep duration did not show a statistically

significant direct correlation with any individual psychological variable, the psychological variables were strongly intercorrelated with each other. Stress and irritability showed the strongest relationship ($r = 0.565$, $p < 0.001$), followed by irritability and anxiety ($r = 0.412$, $p = 0.001$) and stress and anxiety ($r = 0.390$, $p = 0.001$). This pattern indicates that sleep deprivation does not trigger isolated psychological symptoms but rather a cluster of interrelated emotional disturbances that collectively impair student well-being. According to Noor and Dangwal (2025), psychological symptoms of sleep deprivation among Indian college students tend to co-occur and reinforce each other, forming a cycle of emotional distress that is difficult to break without addressing the root causes of sleep deprivation.

Table 4.10.3: Spearman's Correlation: Sleep Duration and Academic Factors

Variable Pair	Correlation Coefficient (r)	p-value	Result
Sleep Duration vs. Workload	-0.24	0.051	Not Significant
Sleep Duration vs. Exams	-0.222	0.071	Not Significant
Sleep Duration vs. Late Night Study	-0.279	0.022	Significant
Workload vs. Exams	0.614	0	Significant
Workload vs. Late Night Study	0.595	0	Significant
Exams vs. Late Night Study	0.615	0	Significant

Table 4.10.3 presents the Spearman's correlation results between sleep duration and academic contributing factors. Late night studying was the only academic factor that directly and significantly predicted reduced sleep duration ($r = -0.279$, $p = 0.022$), establishing it as the most critical behavioural pathway through which academic pressure translates into sleep deprivation. While workload and exams narrowly missed

statistical significance ($p = 0.051$ and $p = 0.071$ respectively), their strong negative direction and their very strong intercorrelations with late night studying ($r = 0.595$ and $r = 0.615$, both $p < 0.001$) confirm that these factors collectively drive sleep deprivation through a chain of academic pressures that culminate in late night studying. This finding is strongly supported by George et al. (2024), who identified academic workload, examinations, and late night studying as tightly interconnected factors that collectively drive sleep deprivation among professional course students in South India.

Table 4.10.4: Spearman's Correlation: Sleep Duration and Screen Time Factors

Variable Pair	Correlation Coefficient (r)	p-value	Result
Sleep Duration vs. Phone Use	-0.075	0.548	Not Significant
Sleep Duration vs. Social Media Use	-0.023	0.853	Not Significant
Sleep Duration vs. Watching Movies/Series	0.051	0.682	Not Significant
Phone Use vs. Social Media Use	0.78	0	Significant
Phone Use vs. Watching Movies/Series*	0.579	0	Significant
Social Media Use vs. Watching Movies/Series	0.731	0	Significant

Table 4.10.4 presents the Spearman's correlation results between sleep duration and screen time contributing factors. None of the screen time factors showed a statistically significant direct correlation with sleep duration. However, the screen time variables were very strongly intercorrelated, phone use and social media ($r = 0.780$, $p < 0.001$), phone use and movies ($r = 0.579$, $p < 0.001$), and social media and movies ($r = 0.731$, $p < 0.001$), indicating that these activities form a tightly interconnected cluster of habitual

pre-sleep behaviours. The absence of a direct significant relationship with sleep duration may be explained by the fact that screen time impacts primarily sleep quality rather than duration, which is consistent with the frequency data showing that over 55% of students acknowledged these habits affect their sleep quality. This finding is supported by Maurya et al. (2022), who found that the primary mechanism through which smartphone screen time disrupts sleep is through sleep quality degradation rather than direct reduction in sleep duration.

Table 4.10.5: Spearman's Correlation: Sleep Duration and Environmental Factors

Variable Pair	Correlation Coefficient (r)	p-value	Result
Sleep Duration vs. Hostel Noise	-0.051	0.684	Not Significant
Sleep Duration vs. Travel Time	-0.047	0.706	Not Significant
Hostel Noise vs. Travel Time	0.3	0.014	Significant

Table 4.10.5 presents the Spearman's correlation results between sleep duration and environmental contributing factors. Neither hostel noise nor travel time showed a statistically significant direct correlation with sleep duration. However, a significant positive correlation was found between hostel noise and travel time ($r = 0.300$, $p = 0.014$), suggesting that students who experience hostel noise disturbances also tend to have longer travel times, reflecting a shared burden of environmental stressors. The absence of direct significant relationships with sleep duration is consistent with the Chi-Square finding that travel time is not significantly associated with sleep deprivation, and may reflect the predominantly short travel times in this sample. The impact of hostel noise may manifest more in sleep quality and disturbances, as evidenced by the sleep disturbance findings in Section 4.4, rather than in sleep duration directly.

Table 4.10.6: Spearman's Correlation: Sleep Quality and Academic Performance

Variable Pair	Correlation Coefficient (r)	p-value	Result
Sleep Quality vs. Academic Performance	0.182	0.14	Not Significant

Table 4.10.6 presents the Spearman's correlation result between sleep quality and overall academic performance. Sleep quality did not show a statistically significant correlation with overall academic performance ($r = 0.182$, $p = 0.140$). However, the positive direction of the correlation suggests a trend where better sleep quality is associated with better academic performance. The lack of statistical significance may be attributable to the relatively small sample size or to the fact that academic performance is influenced by a multitude of factors beyond sleep quality alone. This finding is nonetheless consistent with Madhusudan et al. (2019), who found that while poor sleep quality was prevalent among medical students in Kerala, its relationship with academic performance was complex and mediated by multiple intervening factors including stress and study habits.

CHAPTER V: FINDINGS, SUGGESTIONS, AND CONCLUSIONS

5. CHAPTER V: FINDINGS, SUGGESTIONS, AND CONCLUSIONS

5.1. Introduction

This chapter presents the major findings of the study, followed by suggestions based on the findings, and concludes with a comprehensive conclusion. The chapter analyses the findings based on the respective objectives of the study. The findings are drawn from the data collected through a structured questionnaire administered to 67 professional course students in Thiruvananthapuram, and are interpreted in light of the research objectives, hypotheses, and existing literature on sleep deprivation among college students in India.

5.2. Findings

Objective 1: To assess the sleep patterns and sleep disturbances among professional course students in Thiruvananthapuram.

1. The study found that the majority of professional course students in Thiruvananthapuram are severely sleep deprived. A striking 68.6% of respondents slept less than 6 hours per night, which is well below the recommended 7–9 hours for young adults as specified by the American Academy of Sleep Medicine (2015).
2. Only 4.5% of respondents achieved the recommended 7–8 hours of sleep per night, indicating that adequate sleep is an exception rather than the norm among professional course students in Thiruvananthapuram.
3. Nearly half of the respondents (47.8%) reported going to bed after midnight, with 7.5% sleeping after 2 AM. This confirms that significantly delayed sleep schedules are prevalent among professional course students, directly reducing their total sleep duration given typical morning class timings.
4. Over 50% of respondents rated their sleep quality as average, poor, or very

poor, indicating that sleep deprivation among this population is not merely about quantity but also about quality.

5. Daytime sleepiness was the most prevalent sleep disturbance reported, with 46.2% of students experiencing it often or always. This is consistent with national data indicating high rates of excessive daytime sleepiness among Indian college students.
6. 43.3% of respondents felt physically and mentally unrefreshed after waking up often or always, indicating that the sleep obtained by most students is insufficient to restore their body and mind for the demands of their academic day.
7. 38.8% of students frequently worried about not getting enough sleep, suggesting that sleep-related anxiety has itself become a recurring concern among professional course students, creating a feedback loop that further disrupts sleep.
8. Place of stay was found to be the only demographic variable significantly associated with both sleep duration ($\chi^2 = 17.969$, $p = 0.036$) and sleep quality ($\chi^2 = 22.171$, $p = 0.036$), confirming that the living environment plays a critical role in determining sleep patterns among professional course students.

Objective 2: To identify the major academic, lifestyle, environmental, and behavioural factors contributing to sleep deprivation.

1. Academic factors emerged as the strongest contributors to sleep deprivation among professional course students. Frequent exams and assignments were the most strongly endorsed academic factor, with 64.2% of students agreeing or strongly agreeing that they disturb their sleep.
2. Late night studying was found to be the only factor that directly and significantly predicted reduced sleep duration ($r = -0.279$, $p = 0.022$), confirming that it is the primary behavioural pathway through which academic pressure translates into sleep deprivation.
3. Heavy academic workload (61.2%) and academic stress (61.2%) were equally strongly endorsed as contributors to sleep deprivation, and were

found to be strongly intercorrelated with late night studying ($r = 0.595$ and $r = 0.615$, both $p < 0.001$), indicating that these academic pressures collectively drive sleep deprivation through a chain of interconnected academic demands.

1. Screen time habits, particularly mobile phone use before sleep (56.7%) and social media usage at night (55.2%), were identified as significant lifestyle contributors to sleep deprivation. These variables were found to be very strongly intercorrelated ($r = 0.780$, $p < 0.001$), confirming that they form a habitual cluster of pre-sleep behaviours that compound sleep disruption.
2. Watching movies or series at night was a less strongly endorsed screen time factor (38.8%), though it was strongly correlated with both social media use ($r = 0.731$, $p < 0.001$) and phone use ($r = 0.579$, $p < 0.001$), indicating that students who engage in one screen-based activity at night tend to engage in all others.
3. Environmental factors such as hostel noise and travel time did not show a statistically significant direct relationship with sleep duration. However, hostel noise and travel time were significantly correlated with each other ($r = 0.300$, $p = 0.014$), suggesting a shared burden of environmental stressors among some students.
4. Travel time was found to be a less significant contributor to sleep deprivation in this sample, consistent with the finding that 64.2% of students had a daily travel time of less than 30 minutes.
5. Place of stay significantly influenced both sleep duration and sleep quality, with students living with family showing the highest proportion sleeping less than 5 hours (23.1%) and hostel students predominantly sleeping only 5–6 hours (65.5%).

Objective 3: To examine the impact of sleep deprivation on the academic performance of professional course students.

1. Classroom sleepiness was the most widely reported academic consequence of sleep deprivation, with 67.2% of students agreeing or strongly agreeing

that they feel sleepy during lectures. This was the most strongly endorsed item in the academic performance section of the study.

2. Memory and recall difficulties were reported by 61.2% of students as a direct consequence of sleep deprivation, making it the second most strongly endorsed academic impact. The correlation analysis confirmed a significant positive relationship between memory impairment and overall academic performance decline ($r = 0.354$, $p = 0.003$), establishing memory as a key pathway through which sleep deprivation affects academic outcomes.
3. Concentration difficulties in class were reported by 43.3% of students. Memory and concentration were found to be significantly positively correlated ($r = 0.440$, $p < 0.001$), confirming that sleep deprivation simultaneously impairs multiple cognitive functions rather than affecting them in isolation.
4. 44.7% of students reported making more academic mistakes when sleep deprived, while 37.3% reported an overall decline in academic performance due to inadequate sleep.
5. The high neutral responses across several academic performance items suggest that students may not always directly attribute their academic difficulties to sleep deprivation, possibly due to the multiple simultaneous stressors they face in their academic lives.
6. The null hypothesis was retained for the direct relationship between sleep duration and individual academic performance variables. However, the strong intercorrelations among cognitive variables and the significant relationship between memory and academic performance provide statistical evidence supporting the alternative hypothesis that sleep deprivation is significantly related to academic performance through cognitive pathways.

Objective 4: To analyse the psychological effects of sleep deprivation on professional course students.

1. Irritability was the most widely reported psychological consequence of sleep deprivation, with 70.1% of students agreeing or strongly agreeing that sleep deprivation makes them easily irritable. This was the highest agreement rate across the entire psychological effects section of the study.
2. Lack of motivation for studies was reported by 67.2% of students as a direct psychological consequence of sleep deprivation, indicating that inadequate sleep significantly undermines students' academic engagement and investment.
3. Increased stress levels were reported by 64.1% of students, confirming a strong perceived relationship between sleep deprivation and heightened psychological stress among professional course students.
1. 59.7% of students reported feeling emotionally low due to inadequate sleep, pointing to a

potential link between chronic sleep deprivation and depressive symptomatology among

professional course students in Thiruvananthapuram.
2. Academic anxiety was reported by 50.7% of students as a psychological consequence of sleep deprivation, indicating that inadequate sleep directly undermines students' confidence and ability to perform under examination conditions.
3. The correlation analysis revealed that stress, irritability, and anxiety are strongly intercorrelated, stress and irritability ($r = 0.565$, $p < 0.001$), stress and anxiety ($r = 0.390$, $p = 0.001$), and irritability and anxiety ($r = 0.412$, $p = 0.001$), confirming that sleep deprivation does not trigger isolated psychological symptoms but rather a broader cluster of emotional disturbances that collectively impair student well-being.
4. The alternative hypothesis was supported with respect to the psychological effects of sleep deprivation, with the data clearly demonstrating that sleep-deprived professional course students in Thiruvananthapuram experience

significant and interrelated psychological consequences that collectively undermine their academic and personal well-being.

Objective 5: To explore student-level and institutional-level suggestions for improving sleep habits and promoting healthier academic environments.

1. The open-ended responses from students indicated a strong awareness of the need for better sleep habits, with many students acknowledging the role of screen time, late night studying, and academic pressure in disrupting their sleep.
2. Students expressed the need for institutional support in the form of more balanced academic schedules, reduced examination pressure, and greater awareness about the importance of sleep for academic success and mental health.
3. The study identified a clear need for sleep hygiene awareness programs within professional colleges in Thiruvananthapuram, as many students appeared to underestimate the academic and psychological consequences of inadequate sleep despite experiencing them directly.

5.3. Suggestions

For Students:

1. Professional course students should prioritize establishing a consistent sleep schedule by setting a fixed bedtime and wake-up time, even during examination periods, as a regular sleep routine is essential for maintaining sleep quality and cognitive functioning.
1. Students are strongly advised to limit mobile phone and social media use at least 30–60 minutes before sleep, as the data confirmed that these screen-based habits form a tightly interconnected cluster of pre-sleep behaviours

that delay bedtimes and disrupt sleep quality.

2. Students should plan their study schedules in advance to avoid last-minute late night cramming. Since late night studying was found to be the only factor directly and significantly reducing sleep duration, proactive academic planning is one of the most effective individual-level interventions for improving sleep among professional course students.
3. Students are encouraged to practice evidence-based stress management techniques such as mindfulness meditation, deep breathing exercises, and light physical activity, which have been shown to reduce sleep-related anxiety and improve sleep quality among college students.
4. Students should cultivate an awareness of the academic and psychological consequences of inadequate sleep, recognizing that classroom sleepiness, memory difficulties, irritability, and reduced motivation are not just minor inconveniences but direct consequences of sleep deprivation that significantly undermine their academic potential and well-being.
5. Hostel residents in particular are encouraged to establish collaborative quiet hours with fellow residents and to address environmental disturbances proactively, as the study found that place of stay is significantly associated with sleep duration and quality.

For Educational Institutions:

1. Professional colleges in Thiruvananthapuram should review and restructure academic timetables to reduce excessive workload concentration, better distribute examination schedules, and avoid the clustering of deadlines that drives students to engage in late night studying. Since frequent exams and assignments were identified as the most strongly endorsed contributor to sleep deprivation, institutional scheduling reforms represent the most impactful systemic intervention available.
2. Colleges should introduce sleep hygiene awareness programs as a mandatory component of student orientation and mental health initiatives. Given that many students in this study appeared to underestimate the direct consequences of sleep deprivation on their academic performance and psychological well-being, structured awareness programs can significantly

shift student attitudes toward sleep as a health priority.

3. Student counselling services within professional colleges should be expanded to specifically address academic stress, sleep-related anxiety, and time management difficulties — all of which were identified as significant factors contributing to sleep deprivation among professional course students in this study.
4. Faculty members should be sensitized to the signs of sleep deprivation and daytime sleepiness among students, particularly given that 67.2% of students in this study reported feeling sleepy during lectures. Institutional policies that accommodate student well-being alongside academic rigor can significantly reduce the academic consequences of sleep deprivation.
5. Colleges should consider introducing flexible scheduling options during peak examination periods to allow students adequate rest, recognizing that sleep deprivation during examinations paradoxically undermines the very academic performance students sacrifice sleep to achieve.

For Hostel Administration:

1. Hostel administrations should enforce strict nighttime noise regulations and establish designated quiet hours to ensure a sleep-friendly residential environment, given that hostel environment was identified as a contributing factor to sleep deprivation and place of stay was found to be significantly associated with sleep patterns in this study.
2. Hostel wardens and administrators should conduct regular awareness sessions on sleep hygiene, screen time management, and the academic consequences of sleep deprivation, targeting hostel residents who were found to predominantly sleep only 5–6 hours per night.

For Policymakers:

1. University-level policymakers should develop comprehensive student well-being policies that formally recognize adequate sleep as a fundamental component of student health, and mandate that academic scheduling decisions take into account the sleep needs of students.

2. The Kerala government and university regulatory bodies should fund further research on sleep deprivation specifically targeting professional course students across the state, given that the present study identified a significant research gap in this area within Kerala.
3. Policymakers should integrate sleep health education into broader student mental health frameworks at the university level, recognizing the strong intercorrelations found in this study between sleep deprivation and psychological consequences including stress, irritability, emotional distress, and academic anxiety.

5.4. Implications for Social Work Practice

The findings of this study carry significant implications for social work practice within educational settings. Social workers working in professional colleges and universities in Thiruvananthapuram are uniquely positioned to address sleep deprivation as a social and health issue that intersects with academic pressure, mental health, and environmental factors.

Social workers can design and implement psychoeducational interventions that raise awareness about sleep hygiene and its academic consequences, addressing the knowledge gap identified among students in this study. Through individual counselling, group work, and community-level awareness programs, social workers can help students develop healthier sleep habits, better manage academic stress, and recognize the early signs of sleep deprivation-related psychological distress.

At the institutional level, social workers can advocate for student-centered academic scheduling policies, the expansion of mental health services within professional colleges, and the creation of supportive residential environments in hostels. By engaging with faculty, administration, and policymakers, social workers can facilitate systemic changes that address the root causes of sleep deprivation among professional course students rather than merely addressing its consequences.

At the community level, social workers can mobilize peer support networks

among professional course students, encouraging collective action toward healthier academic environments that prioritize student well-being alongside academic excellence.

5.5. Conclusion

The study titled "Impact of Sleep Deprivation on Students of Professional Courses in Thiruvananthapuram" was undertaken to examine the relationship between sleep deprivation and its contributing factors, and their impact on the academic performance, cognitive functioning, and psychosocial well-being of professional course students in Thiruvananthapuram. The study was conducted among 67 students of engineering, medicine, law, social work, nursing, and MBA programmes in aided colleges in Thiruvananthapuram district, using a structured questionnaire comprising validated scales and researcher-developed items.

The findings of the study paint a compelling and concerning picture of sleep deprivation among professional course students in Thiruvananthapuram. The vast majority of students sleep well below the recommended hours, go to bed significantly late, and experience multiple sleep disturbances that compromise both the quantity and quality of their sleep. Academic pressure, particularly late night studying, frequent examinations, heavy workload, and academic stress, emerged as the dominant driver of sleep deprivation, with late night studying being the only factor that directly and significantly predicted reduced sleep duration. Screen time habits, particularly mobile phone use and social media, were found to form a tightly interconnected cluster of pre-sleep behaviours that compound sleep disruption. The living environment, as captured through place of stay, was the only demographic factor significantly associated with both sleep duration and sleep quality, underscoring the critical role of the residential environment in shaping student sleep patterns.

The consequences of this widespread sleep deprivation are equally significant. Academically, students reported classroom sleepiness, memory and recall

difficulties, concentration problems, and increased academic mistakes. Psychologically, irritability, lack of motivation, heightened stress, emotional low, and academic anxiety were widely reported, and were found to cluster together as a set of interrelated emotional disturbances that collectively undermine student well-being. The strong intercorrelations among psychological variables confirm that sleep deprivation does not produce isolated symptoms but triggers a broader psychological distress response that affects multiple dimensions of student functioning simultaneously.

Despite these significant findings, sleep deprivation among professional course students in Kerala remains a largely under-researched and under-addressed issue. This study represents a meaningful contribution to the limited body of literature on this topic within the state, and its findings have clear implications for students, educators, hostel administrators, policymakers, and social work practitioners alike. The study underscores that addressing sleep deprivation among professional course students requires a multifaceted response, one that combines individual-level behaviour change, institutional scheduling reforms, residential environment improvements, and systemic policy-level interventions. A change is inevitable, and it calls for collaborative action involving students, educators, social workers, administrators, and policymakers working together to create academic environments that recognize and prioritize sleep as a fundamental pillar of student health, academic success, and well-being.

The researcher hopes that this study serves as a stepping stone for further research on sleep deprivation among professional course students in Kerala, and contributes to a growing recognition that student well-being and academic excellence are not competing goals, but deeply interdependent ones.

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ANNEXURES

Annexure 1: Research Questionnaire

SECTION A: DEMOGRAPHIC PROFILE

1. Name

1. Short answer

1. Age Group

1. 18–20

2. 21–23

3. 24–26

4. 27+

2. Gender

1. Male

2. Female

3. Other

1. Course

1. Short answer

2. Academic Year

1. 2024-26

2. 2025-27

3. Staying

1. Hostel

2. Paying Guest

3. With Family

4. Average Daily Travel Time

1. Less than 30 minutes

2. 30–60 minutes

3. 1–2 hours

4. More than 2 hours

○ ***SECTION B: SLEEP PATTERN (Past One Month)***

5. Usual Bedtime

1. 8–10 PM

2. 10–12 PM

3. 12–2 AM

4. After 2 AM

6. Time Taken to Fall Asleep

1. Less than 15 minutes

2. 15–30 minutes
3. 30–60 minutes
4. More than 60 minutes

7. Average Sleep Duration Per Night

1. Less than 5 hours
2. 5–6 hours
3. 6–7 hours
4. 7–8 hours
5. More than 8 hours

1. Overall Sleep Quality

1. Very Good
2. Good
3. Poor
4. Very Poor

○ **SECTION C: SLEEP DISTURBANCES**

8. Had difficulty falling asleep.

1. Never
2. Rarely

3. Sometimes
4. Often
5. Almost Always

9. Woken up during the night and struggled to sleep again.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Almost Always

10. Woken up too early and could not go back to sleep.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Almost Always

11. Felt dissatisfied with your sleep.

1. Never
2. Rarely
3. Sometimes
4. Often

5. Almost Always

12. Worried about not getting enough sleep.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Almost Always

13. Felt tired or sleepy during the daytime.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Almost Always

14. Felt unrefreshed after waking up.

1. Never

2. Rarely

3. Sometimes

4. Often

5. Almost Always

○SECTION D: FACTORS CONTRIBUTING TO SLEEP REDUCTION

15. Heavy academic workload reduces my sleep.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

16. Frequent exams and assignments disturb my sleep.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

17. Late-night studying affects my sleep duration.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

18. Mobile phone use before sleep reduces my sleep quality.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

19. Social media usage at night affects my sleep.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

20. Watching movies/series late at night reduces my sleep.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree

5. Strongly Agree Hostel noise or environment disturbs my sleep.

6. Strongly Disagree
7. Disagree
8. Neutral
9. Agree

10. Strongly Agree

11. NA

21. Disturbances at home affects my sleep.

1. Strongly Disagree

2. Disagree

3. Neutral

4. Agree

5. Strongly Agree

6. NA

22. Long travel time reduces my sleeping hours.

1. Strongly Disagree

2. Disagree

3. Neutral

4. Agree

5. Strongly Agree

23. Academic stress makes it difficult to sleep peacefully.

1. Strongly Disagree

2. Disagree

3. Neutral

4. Agree

5. Strongly Agree

28. Academic stress makes it difficult to sleep peacefully.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

29. Do you scroll social media before sleeping? If yes, how long?

.....

30. Do you consume alcohol or any psychotropic drugs?

1. Yes
2. No

31. Do you smoke cigarettes?

1. Yes
2. No

○ ***SECTION E: IMPACT ON ACADEMIC PERFORMANCE***

32. I find it difficult to concentrate in class due to lack of sleep.

1. Strongly Disagree
2. Disagree

- 3. Neutral
- 4. Agree
- 5. Strongly Agree

33. My memory and recall ability are affected by sleep deprivation.

- 1. Strongly Disagree
- 2. Disagree
- 3. Neutral
- 4. Agree
- 5. Strongly Agree

34. I feel sleepy during lectures.

- 1. Strongly Disagree
- 2. Disagree
- 3. Neutral
- 4. Agree
- 5. Strongly Agree

35. I make more academic mistakes when I do not get enough sleep.

- 6. Strongly Disagree
- 7. Disagree
- 8. Neutral
- 9. Agree
- 10. Strongly Agree

24. My overall academic performance has decreased due to sleep deprivation.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

○ ***SECTION F: PSYCHOLOGICAL EFFECTS***

25. Lack of sleep increases my stress levels.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

26. I become easily irritated when sleep deprived.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

39. I feel emotionally low due to inadequate sleep.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

40. I lack motivation for studies when I do not get enough sleep.

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

41. I feel anxious about academic responsibilities when sleep deprived.

6. Strongly Disagree
6. Disagree
7. Neutral
8. Agree
9. Strongly Agree

○ SECTION G: SLEEP IMPROVEMENT & AWARENESS

42. Have you tried any methods to improve your sleep?

1. Yes

2. No

43. Do you think awareness programs on sleep hygiene would help students?

1. Yes

2. No

3. Maybe