

A Study to Assess the Sleep Deprivation and Its Impact on Academic Performance Among Nursing Students of Selected Nursing Colleges of the City

Mr. Sushil Govind Naik

Student, Mental Health and Psychiatric Nursing, Gampatrao Adke College Of Nursing, Nashik,
MUHS Maharashtra

ABSTRACT

BACKGROUND OF STUDY: Sleep is one of our basic needs that plays a very important role in a human being's health. It is important for our physical, intellectual and emotional health. Sleep loss not only makes people feel sleepy in the daytime, it is even a possible risk factor for Alzheimer's disease. All functions occur throughout the brain and the body.

Sleep is thus necessary for the optimal operation of key cognitive functions related to academic, and perhaps social success in higher education. When students arrive at college their sleep habits are often one of their first daily routines to change and not usually for the better. College students typically shift to an irregular sleep-wake cycle characterized by short sleep length on weekdays and phase delays (later wake-up time) on weekends, although this general pattern is influenced by an individual's study and work schedules. Both sleep deprivation and poor sleep quality are particularly prominent in young adult and college student populations.

Recent data have suggested that sleep is important for memory consolidation and learning. Sleep deprivation results in sleepiness and impaired neurocognitive and psychomotor performance. Recent reviews have indicated an important relationship between sleep patterns with learning abilities and consequent academic performance.

PROBLEM STATEMENT: "A study to assess the sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city."

OBJECTIVES:

1. To assess the sleep deprivation among nursing students of selected nursing colleges.
2. To assess the effect of sleep deprivation on academic performance among nursing students of selected nursing colleges.
3. To find out an association between sleep deprivation among nursing students with selected demographic variables.

MATERIALS & METHODS: A Quantitative Non-Experimental Descriptive correlational research design was used to assess the sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city. Sample size is the number of samples selected to participate in the study. The sample size was 150 nursing students of selected nursing colleges who fulfil the required inclusion and exclusion criteria. The sampling technique used in this

study was Non probability - purposive sampling technique. The instruments employed included Pittsburgh Sleep Quality Index (PSQI), The Epworth Sleepiness Scale (ESS) and Academic Performance Scale was used to collect the data. The data collection was carried out in three phases and the data was analysed by using the descriptive and inferential statistics.

Major findings of the study: In present study sleep deprivation (PSQI) among nursing students of selected nursing colleges of the city shows that, 66% of them had good sleep quality, 34% had average and no one of them had poor sleep quality.

The study reveals that 15.33% of them were abnormally sleepy, 18.67% were average sleepy, 55.33% may excessively sleepy, 10.67% were excessively sleepy.

In present study the academic performance among nursing students of selected nursing colleges of the city shows that, 62.67% of them had excellent performance, 31.33% had good performance and 4% students had moderate performance, 1.33% poor and 0.67% had falling performance.

The correlation coefficient between sleep deprivation (PSQI) and academic performance was -0.032 with the p value 0.70. The p value more than 0.05, shows the no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students.

The correlation coefficient between sleep deprivation (Sleepiness) and academic performance was 0.010 with p value 0.91. The p value more than 0.05, shows the no significant correlation between sleep deprivation (Sleepiness) and academic performance among nursing students.

The chi square test was used to see association between sleep deprivations (PSQI) among nursing students with selected demographic variables. It Concludes that, there was significant association of demographic variables like age, residence and year of education with the sleep deprivations (PSQI) and there was no significant association of demographic variables like gender, religion, education etc., with the sleep deprivations (PSQI).

Further researcher concluded that there was significant association of demographic variables like religion, residence, education and year of education, with the sleep deprivations (Sleepiness) and there was no significant association of demographic variables like age, gender, night duties performed per month, with the sleep deprivations (Sleepiness).

Conclusion: The findings showed that the correlation coefficient between sleep deprivation (PSQI) and academic performance was -0.032 with the p value 0.70. The p value more than 0.05, shows the no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students.

Keyword: Sleep, sleep deprivation, academic performance, nursing Students

CHAPTER – I

INTRODUCTION

“Sleep is the golden chain that ties health and our bodies together.”

-Thomas Dekker.

Sleep is a basic human need. Sleep is naturally recurring state of mind and body characterized by altered consciousness, relatively inhibited sensory activity of nearly all voluntary muscles and reduces interactions with surroundings. The busier we are, the more elusive and precious sleep becomes. The normal sleep requirement for a healthy adult is 7-9 hours per day.¹

Sleep is important for our mental, physical and emotional wellbeing. It plays a critical role in a variety of

functions, including restoration of the endocrine and metabolic processes, energy conservation, memory consolidation and recovery of cortical functioning. In support of such a critical role, it has long been established that sleep deprivation degrades several aspects of neurocognitive performance: it reduces learning capacity, impedes divergent thinking, increases ineffective response perseveration, increases attention lapses and reaction time and decreases hand–eye coordination. Although cognitive tasks vary considerably in their sensitivity to sleep loss, to date the fundamental role of sleep on the proper functioning of our daily life is widely accepted.²

Sleep deprivation, also known as sleep insufficiency or sleeplessness, is the condition of not having adequate duration and/or quality of sleep to support decent alertness, performance, and health. It can be either chronic or acute and may vary widely in severity. Acute sleep deprivation is when an individual sleeps less than usual or does not sleep at all for a short period of time – usually lasting one to two days. Chronic sleep deprivation means when an individual routinely sleeps less than an optimal amount for ideal functioning. Chronic sleep deficiency is often confused with the term insomnia. Although both chronic sleep deficiency and insomnia share decreased quantity and/or quality of sleep as well as impaired function, their difference lies on the ability to fall asleep. Sleep deprived individuals are able to fall asleep rapidly when allowed but those with insomnia have difficulty falling asleep. The average adult needs seven or more hours of sleep per night to maintain health. The amount of sleep needed can depend on sleep quality, age, pregnancy, and level of sleep deprivation. Insufficient sleep has been linked to weight gain, high blood pressure, diabetes, depression, heart disease, and strokes. Sleep deprivation can also lead to high anxiety, irritability, erratic behaviour, poor cognitive functioning and performance, and psychotic episodes.³

Among college-aged students, one of the most common causes of daytime sleepiness is sleep deprivation, i.e., students get inadequate sleep because they go to bed late and wake up early. This occurs for multiple reasons; some are physiologic and others behavioural. The behavioural components may be particularly problematic on college campuses. However, sleep deprivation is not the only cause of sleepiness as college students are not immune to sleep disorders, which may also cause sleepiness.⁴

Lack of sleep in college students has been identified as one of the academic situational constraints that diminish students' performance. Furthermore, research has found that students who stay up late tend to have lower academic performance, poor quality of sleep and maladjustment to college life.⁵

Higher academic performance during the years at university is highly related to career success. Moreover, academic performance influences future educational attainment and income, which, in turn, affect health and quality of life. Therefore, determining factors related with academic grades is important to both universities and their undergraduates.⁶

Good academic achievement is directly related to good scoring in various entrance examinations and job opportunities so it has been always a matter of concern for both parents as well as students. Achievement in school is affected by a number of factors, including the quality of the school, characteristics of the student's family such as socioeconomic status and parent's educational level, and the characteristics of the child. Motivation and home environment have a positive relationship with academic achievement. Suboptimal sleep affects students learning process and academic achievement.⁷

BACKGROUND OF STUDY:

Sleep is one of our basic needs that plays a very important role in a human being's health. It is important for our physical, intellectual and emotional health. Sleep loss not only makes people feel sleepy in the

daytime, it is even a possible risk factor for Alzheimer's disease. Sleep is an active, repetitive and reversible behavior serving several different functions, such as repair and growth, learning or memory consolidation, and restorative processes. All these occur throughout the brain and the body.⁸

Sleep is critical for memory consolidation, learning, decision making, and critical thinking. Sleep is thus necessary for the optimal operation of key cognitive functions related to academic, and perhaps social success in higher education. When students arrive at college their sleep habits are often one of their first daily routines to change and not usually for the better. College students typically shift to an irregular sleep-wake cycle characterized by short sleep length on weekdays and phase delays (later wake-up time) on weekends, although this general pattern is influenced by an individual's study and work schedules. Both sleep deprivation and poor sleep quality are particularly prominent in young adult and college student populations.⁹

Recent data have suggested that sleep is important for memory consolidation and learning. Sleep deprivation results in sleepiness and impaired neurocognitive and psychomotor performance. Recent reviews have indicated an important relationship between sleep patterns with learning abilities and consequent academic performance. Certain sleep habits were associated with lower academic performance. A late bedtime on weekdays and weekends was associated with lower academic performance.¹⁰

Sleep disorders are composed of a group of diseases of increasing prevalence and with social-health implications to be considered a public health problem. Sleep habits and specific sleep behaviors have an influence on the academic success of students. However, the characteristics of sleep and sleep habits of university students as predictors of poor academic performance have been scarcely analyzed. In the present study, we aimed to investigate sleep deprivation and their effect on academic performance among nursing students.¹¹

NEED FOR STUDY:

“Sleep is an investment in the energy you need to be effective tomorrow.”

-Tom Roth

93 per cent of Indians are sleep deprived, getting less than 8 hours per night, 58 per cent believe their work suffers due to lack of adequate sleep, 11 per cent take leave from work because of lack of, 11 per cent have fallen asleep at work due to a poor night's sleep and 38 per cent witnessed a colleague falling asleep at work, Lack of sleep also affects family relationships according to 19 per cent, 87 per cent of Indians say lack of sleep affects health, 72 per cent of Indians are waking up 1 to 3 times per night, 15 per cent wake up over stress at work, 33 per cent Indians snore, Up to 14 per cent snore as loud as or louder than talking, Only 2 per cent of Indians discuss their lack of sleep with a physician.¹²

Sleep affects everyone, and a lack of sleep can have a big impact on a person's ability to pay attention. College students are a good group to pull data from, because they tend to pull a lot of all-nighters studying and doing homework. The present investigation studied, lack of sleep in college students and effect on working memory and processing speed. The lack of sleep a college student gets during a night of rest will have a negative effect on that person's cognitive function.

Thomas et al (2017) conducted a research study with an objective to understand nursing students' perceptions of the relationship between sleep deprivation and learning and personal and patient safety when in a clinical or work setting. The researchers used a cross-sectional correlation design. The study was conducted at a Midwestern state university school of nursing with an average of 400 undergraduate

pre-licensure nursing students. The result of the study revealed that one hundred and fifty-five ($n = 155$) students needed seven or more hours of sleep daily to feel rested but received less than 5 hours per day. All participants ($n = 179$) reported feeling sleep deprived. Further they concluded that nursing students may lack the knowledge that chronic sleep deprivation may result in personal and patient safety issues in a clinical or work setting.¹³

El Desouky, Lawend and Awed (2015) opined that Nursing students have a rigorous course load, which necessitate hard work and at the same time adequate sleep. They further stated that because of the correlation between sleep, memory formation and learning, sleep is of utmost importance to nursing students, however, when nursing students resume school, their sleep habits and patterns changes. These students typically start practicing a sleep pattern that is characterized by sleep deprivation.¹⁴

Sleep deprivation is most common problem in the nursing students, students face many problems e.g. night duties, assignments or studies. That's why students cannot complete their sleep, so the students have too many chances of minor or major disorders associated with sleep. Researcher can see the past researches and studies related to sleep and the results of the studies shows that many students are sleep deprive.

Academic programs have the responsibility to consider the potential negative Consequences poor sleep can have on student. There is a lack of research specific to nursing students and sleep quality. By gaining a better understanding of nursing students' perceptions of sleep quality, interventions can be designed by educators to help prevent poor sleep quality from leading to both acute and chronic sleep deprivation. Nursing students and nurses are responsible for assessing sleep quality in order to obtain a holistic evaluation of the client, and to recognize and respond to poor sleep quality.

Based on review of the literature and from personal experience, the investigator came to know that most of the nursing students experienced lack of sleep. From this instinct, the investigator was motivated to assess sleep deprivation & its impact on academic performance among nursing students.

PROBLEM STATEMENT:

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OPERATIONAL DEFINITION:

1. **Study :-** According to Oxford Advanced American Dictionary, 'study' means the activity of learning or gaining knowledge, either from books or by examining things in the world.

In this study, the word 'study' refers to assess data regarding sleep deprivation and effects of sleep deprivation on academic performance among the nursing students.

2. **Assess: -** According to Oxford Advanced American Dictionary, the word 'assess' means to make a judgment about the nature or quality of someone or something.

In this study, the word 'assess' refers to the statistical analysis (descriptive and inferential) of items

included research tool.

3. **Effect:** - According to Oxford Advanced American Dictionary, the word 'effect' means a change that someone or something causes in someone or something else.
In this study, the word 'effect' refers to the significant changes or difference observed, in sleep deprived students with academic performance.
4. **Deprivation:** - According to Oxford Advanced American Dictionary, the word 'deprivation' means the fact of not having something that you need, like enough food, money, or a home.
In this study, the word 'deprivation' refers to, not getting enough amount of sleep among nursing students.
5. **Academic Performance:-** According to Oxford Advanced American Dictionary, the word 'Academic Performance' means how well a person performs in different areas of learning (e.g., math, language, science, history). It is a complex concept that involves various aspects of learning.
In this study, the word 'Academic Performance' refers to, Different measures can be used such as the knowledge gained in an educational system, the grades or scores obtained on an educational test, or the educational degrees or certificates earned during nursing programme.
6. **Nursing students:** - According to Oxford Advanced American Dictionary, the word 'nursing student' means the person who is studying at college or university where they learn knowledge and skills of caring for people who are sick or injured.
In this study, the word 'nursing students' refers to, the students learning GNM, Basic Bsc. Nursing, PBBSC nursing course.
7. **College:** - According to Oxford Advanced American Dictionary, the word college means a place where students can study for a degree after they have finished high school.
8. **In this study**, the word 'college' refers to an educational institution or establishment, in selected city one providing higher education or vocational training about nursing profession.

RESEARCH QUESTION:

1. What is the pre-existing sleep deprivation among nursing students of selected nursing colleges of the city?
2. What is the effect of sleep deprivation on academic performance among nursing students of selected nursing colleges of the city?

HYPOTHESIS:

H₀: ((Null Hypothesis) There will be no significant relationship between sleep deprivation and academic performance among nursing students. (P at 0.05 level of significance)

H₁: There is significant relationship between sleep deprivation and academic performance among nursing students. (P at 0.05 level of significance)

H₂: There is significant association between sleep deprivation and selected socio-demographic variables at 0.05 level of significance. (P at 0.05 level of significance)

LIMITATIONS:

1. The study was confined to a small number (150) of subjects which limits the generalization that can be made.
2. Information collected from the nursing students was based on the tick mark responses only.

3. Random sampling technique could not be used.
4. The availability of time was limited for data collection.

ETHICAL ASPECT:

1. The approval was taken from the institutional ethics committee and synopsis approval committee, MUHS, Nasik to conduct the research study.
2. Permission to conduct the study was obtained from the concerned authorities at the time of data collection.
3. Information was handled in such a way so that confidentiality and anonymity are maintained.
4. Informed consents from the subjects were taken.
5. The data generated during research process will be extensively used for benefits of the Profession.
6. Freedom to withdraw from the study any time was assured to subjects.

CONCEPTUAL FRAMEWORK:

Conceptual framework is interrelated concepts or abstractions that assembled together in some rational scheme by virtue of their relevance to a common theme. Conceptual framework helps to stimulate research and the extension of knowledge by providing both direction and inputs.

Conceptual framework provides broad prospective for nursing practice, research and education. Conceptual framework plays several inter-related roles in the progress of science. Their overall purpose is to make scientific and meaningful findings and also to generalize the findings.

A conceptual framework is a theoretical approach to study of problems that are scientifically based and emphasizes the selection, arrangement and clarification of its concepts.

Conceptual framework - Health Belief Model

Charter has stated the conceptual framework formalizes the thinking process, so that others may read and know the frame of references, basic to the research problem.

Conceptual framework attempts at organizing phenomenon that are theories. Nonetheless, conceptual framework is highly valuable, i.e. they often serve as a spring board for theory development. Conceptual framework, deals with abstracts, concepts that are assembled by virtue of their relevance to a common theme.

The conceptual model in figure represents the phenomenon of interest, figuratively. The concepts and linkage between them are represented diagrammatically through the use of boxes, arrows or symbols.

The conceptual framework of this study is based on health belief model which is pioneered by Rosenstock (1974) he addresses the relationship between a personal beliefs and behaviour. It is a way of understanding predicting how clients will behave in relation to their health care. This theory is used to assess the sleep deprivation and its impact on academic performance among nursing students.

This theory has three components.

1. Individual perception
2. Modifying factor
3. Likelihood of action.

Conceptual framework - Health Belief Model

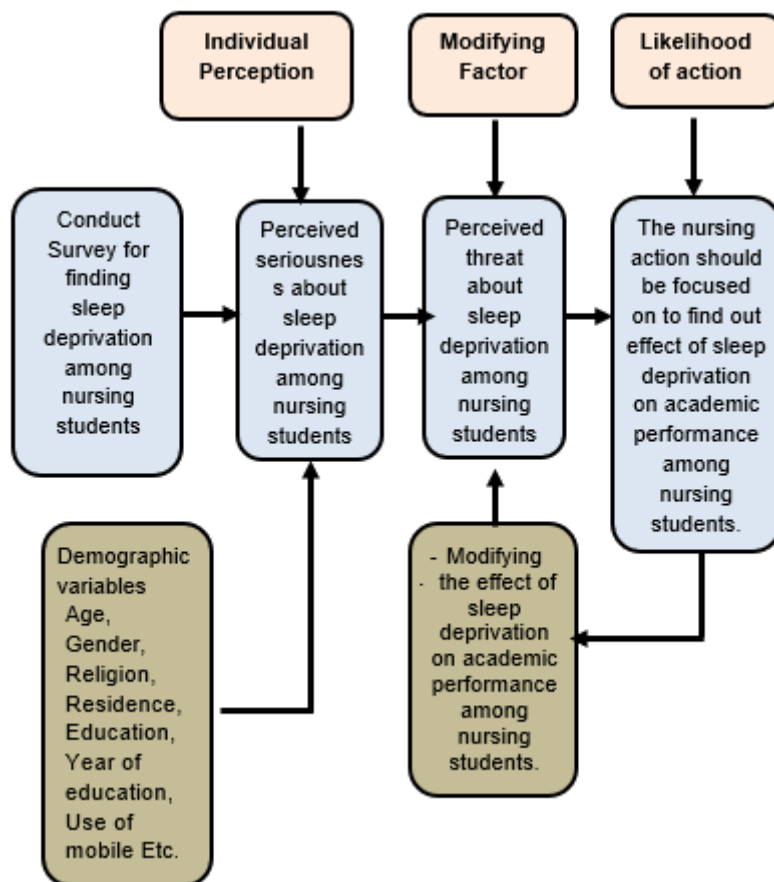


Figure 1. Conceptual Framework based on “Health Belief Model” by Rosenstock (1974)

SUMMARY:

This chapter dealt with introduction, back ground of the study, need for the study, problem statement, objectives of the study, operational definitions, scope of the study, assumptions, limitations, ethical aspect and conceptual framework which would help in forming strong foundation to conduct the study.

CHAPTER - II

REVIEW OF LITERATURE

“If I have seen further than others, it is because I have stood on the shoulders of the giants.”

-Isaac Newton.

A literature review is a written summary of the evidence related to a research problem. The key steps in creating a written research review consist of formulating a question, designing a research strategy, completing a search, retrieving relevant sources and abstracting encoded information, critiquing studies, analyzing the collected information, and preparing a written synthesis.

Conducting a literature review is a crucial aspect of the research process. A detailed and systematic analysis of publications relevant to the research process is known as a literature review. The main emphasis of the research is on the literature review for qualitative methods and its application in the steps of the quantitative design research process. Occasionally, a review of the literature may precede the selection of the topic.

An essential phase in any research project is the literature review. It facilitates the process of locating, identifying, evaluating, and summarizing written materials that provide insights into the research problem.

As stated by Sharma S K, the literature review is described as a broad, thorough, in-depth, systematic, and critical review of scholarly publications, unpublished print materials, audiovisual materials, and personal communications.

A well-organized literature review is distinguished by a logical progression of ideas; up-to-date and pertinent references with a consistent and appropriate referencing style; correct usage of terminology; and an impartial and extensive view of previous research on the topic.

The objective of a literature review is to develop research questions, ascertain what is known and unknown about a subject, identify conceptual and theoretical traditions within bodies of literature, and summarize the investigative methods used in prior work, along with their pros and cons.

The literature review in a research report presents an overview of the knowledge pertaining to a specific issue, encompassing what is known and what remains unknown. This section outlines what is currently understood about a practical problem, the gaps in the existing knowledge base, and how the present study contributes to the enhancement of knowledge in the field.

To gain insight and gather comprehensive information for conducting the study, the investigator conducted an extensive review of both related research and non-research literature utilizing PUBMED, internet sources, books, journals, unpublished dissertations, and newspapers.

After completing the review of literature the collected data was organized under following main headings:

The review of literature for the present study is arranged under the following headings: -

- a) Literature related to sleep quality among nursing Students.**
- b) Literature related to sleep deprivation among nursing students.**
- c) Literature related to effect of sleep deprivation on academic performance among nursing Students.**
- a) Literature related to sleep quality among nursing Students.**

Belingheri M et al (2022) conducted a cross-sectional research study on sleep disorders and night-shift work in nursing students. This study evaluates sleep disorders' risk factors among nursing students and their potential association with symptoms, and it assesses whether night shifts affect sleep quality by increasing the prevalence of sleep disorders. A total of 202 nursing students were included. A self-administered questionnaire was used to collect data on sociodemographic and academic characteristics and risk factors for sleep disorders. The survey included the General Health Questionnaire to assess perceived stress, the Sleep and Daytime Habits Questionnaire, and the Epworth Sleepiness Scale to assess symptoms of sleep disorders. Results of the study showed that a high level of perceived stress is associated with symptoms of sleep disorders and poor sleep quality. Daytime symptoms are also associated with smoking. Students who drink coffee late in the evening report fewer night time symptoms. Night shifts and their increasing number are not associated with the symptoms of sleep disorders. The perception of an unsatisfying academic performance is associated with daytime symptoms and poor sleep quality.¹⁵

Perotta, B.et al (2021) conducted a research study on sleepiness, sleep deprivation, quality of life, mental symptoms, and the perception of the academic environment in medical students. Researchers applied questionnaires for daytime sleepiness, quality of sleep, quality of life, anxiety and depression

symptoms, and perception of the educational environment. The results of the study revealed that 37.8% of medical students presented mild values of daytime sleepiness (Epworth Sleepiness Scale, ESS), and 8.7% presented moderate or severe values. The percentage of female medical students who presented ESS values of high or very high was significantly greater than that of male medical students ($p < 0.05$). Students with lower ESS scores presented significantly greater scores of quality of life and perception of the educational environment and lower scores of depression and anxiety symptoms, and these relationships showed a dose-effect pattern. Medical students reporting more sleep deprivation showed significantly greater odds ratios of presenting anxiety and depression symptoms and lower odds of having a good quality of life or a positive perception of their educational environment.¹⁶

Binks H. et al (2020) conducted a cross-sectional research study with the objective of determining whether inadequate sleep was associated with poor diet, physical activity, alcohol consumption, and smoking in Australian nursing students. A questionnaire assessing sleep and lifestyle behaviors was completed by 470 nursing students. To determine the relationship between variables, several regression tests were utilized, such as a one-way ANOVA, tests, and a Pearson's bivariate correlation. The results of the study revealed that inadequate sleep was experienced by 78% of nursing students. No significant associations were found between sleep parameters and level of physical activity. Further the researcher concluded that nursing students experience inadequate sleep, and that poor lifestyle behaviors were associated with inadequate sleep in this sample. Strategies are needed to address inadequate sleep and poor lifestyle behaviors in nursing students, to support health, academic and clinic performance, as well as the transition to professional nursing practice.¹⁷

Ceylan A, Demirdel E (2023) conducted a study on relationship Between Academic Performance and Physical Activity, Smart Phone Use and Sleep Quality in University Students. Young individuals between the ages of 18-25 studying at a vocational school were included in the study. In addition, the physical activity levels of the individuals were evaluated with the International Physical Activity Questionnaire-Short Form (IPAQ-SF), the smartphone usage level with the Smartphone Addiction Scale-Short Form (SAS-SF), and the sleep quality with the Pittsburg Sleep Quality Index (PSQI). Results showed that total of 424 people, 326 of whom were women, with a mean age of 20.30 ± 1.34 years, participated in the study. It was determined that 70.3% of the participants used smartphones for more than 4 hours a day. It was determined that there was a weak negative correlation between the academic success of the students and their physical activity levels, and that their academic success was not affected by smart phone use and sleep quality. However, it was determined that there was a weak positive correlation between the sleep quality of the students and their smartphone use. It was observed that the physical activity levels of male students were higher, while the academic success and sleep quality of normal education students were better.¹⁸

Yilmaz D et al (2017) conducted a research study to examine the quality of sleep and the factors affecting the quality of sleep. The sample for this descriptive research is comprised of 223 volunteer students studying at Uluda University's Faculty of Health Sciences Department of Nursing. Research data have been collected through a personal features survey and the Pitt Sleep Quality Index (PSQI). It has been observed that there are meaningful discrepancies between average PSQI results and the smoking habits of the students, total daily sleeping hours, efficient waking up times, and average daily coffee consumption ($p < 0.05$). According to the analyses, there are no meaningful discrepancies between age, gender, where the students live, snoozing during the morning classes, the existence of chronic diseases, and daily average tea consumption. ($p > 0.05$) The researcher concluded that, according to the

findings of this research, nursing students have poor sleep quality.¹⁹

Jalali R et al (2020) conducted a study on “The Effect of Sleep Quality on Students' Academic Achievement.” This study aimed to determine the relationship between sleep quality and students' academic achievement among students at Kermanshah University of Medical Sciences. In this cross-sectional study, 102 medical students from different fields, with maximum variation sampling, completed Pittsburgh Sleep Quality Index (PSQI). The result showed that the quality of sleep questionnaire scores, the results indicated no significant difference between students with high grades and those with low grades. However, there were moderate and sometimes severe sleep disturbances in both groups. The results showed no significant difference between sleep quality and academic achievement. Nevertheless, longitudinal study should be performed to control for confounding factors.²⁰

Silva et al (2020) conducted a cross-sectional research study on Quality of sleep and anxiety are related to circadian preference in university students. The objective of the study was to identify the anxiety levels, quality of sleep, and different chronotypes of university students and investigate their relationships. Activities stated that they would begin at seven in the morning and end at six in the evening. There were classes tonight. While there were 103 volunteers, there were only 96 participants. Participants consisted of 57 females and 39 males, with the mean ages being 22 and 23.15, respectively. Participants in this study were students who are enrolled in courses at Centro de Entrenamiento between the ages of 18 and 25 years old, do not have a diagnosis of psychiatric diseases, and do not take controlled medications. Individuals with evening chronotypes are more likely to have higher trait and anxiety states, as well as poorer sleep quality. Evening individuals have three times as high alert levels at the tenth hour than at the seventh hour. On work days, approximately 90% of the participants suffered from partial sleep deprivation because they went to bed late and had to wake up early in the morning. Late chronotypes who have early work schedules often do not sleep enough during the week, which results in having to compensate by increasing sleep on the weekends. This is known as "social jet lag." Compared to morning students, evening students have higher levels of anxiety and poorer sleep quality. In comparison with other chronotypes, evening chronotypes have sleep-wake cycles that are more irregular because of their higher.²¹

Chen WL et al (2019) conducted a research study on the consequences of inadequate sleep during the college years. The present study used two waves of longitudinal data from the U.S. Wabash National Study (N = 3549) to examine the relationships between sleep deprivation and school-record grade point average (GPA) and college graduation. Random-effects and fixed-effects models were used to link sleep deprivation and GPA. Logistic regression was used to link sleep deprivation during the college years and college graduation. Results from the random-effects and fixed-effects models suggested that chronic sleep deprivation is associated with a lower GPA. Students who experienced sleep deprivation from their freshman to senior years had a lower chance of graduating than students who were not sleep deprived. Furthermore, sleep deprivation during students' senior year was found to be more consequential for college graduation than sleep deprivation during their freshman year. Findings showed that the ramifications of chronic sleep deprivation extend beyond short-term GPA; sleep deprivation predicts the likelihood of obtaining a college degree.²²

Mah CD et al (2018) conducted a research study on the poor sleep quality and insufficient sleep of a collegiate student-athlete population. The study aim was to examine sleep quality, sleep duration, and daytime sleepiness in collegiate student-athletes across a wide range of the research design, which is a questionnaire. The setting of the study was 628 athletes across 29 varsity teams at Stanford University.

Athletes completed a questionnaire inquiring about sleep quality via a modified Pittsburgh Sleep Quality Index (PSQI), sleep duration, and daytime sleepiness via the Epworth Sleepiness Scale. Sleep quality on campus and while travelling for competition was rated on a 10-point scale. Results of the study revealed that collegiate athletes were classified as poor sleepers (PSQI 5.38 $\pm$ 2.45), and 42.4% of athletes experience poor sleep quality (reporting PSQI global scores >5). Athletes reported lower sleep quality on campus than when travelling for competition (7.1 vs. 7.6, P .001). Inadequate sleep was demonstrated by 39.1% of athletes that regularly obtained 7 hours of sleep on weekdays. Fifty-one percent of athletes reported high levels of daytime sleepiness with Epworth scores below 10. Teenage student-athletes in their first and second years of college reported the highest mean levels of daytime sleepiness. Greater total sleep time was associated with daytime functioning, including a lower frequency of difficulty waking up for practise or class (P .001) and a lower frequency of trouble staying awake during daily activities (P .001). researcher concluded that collegiate athletes frequently experience poor sleep quality, regularly obtain insufficient sleep, and commonly exhibit daytime sleepiness.²³

Vallat R et al (2018) conducted research study on Sleep and dream habits in a sample of French college students who report no sleep disorders there is a lack of up-to-date data on sleep and dream habits of college students. In the sample (1,137 French college students, 411 males, mean age = 22.2 $\pm$ 2.4 years, body mass index = 22.0 $\pm$ 3.2 kg m⁻²), on average, the participants reported spending about 8 hr in bed during weekdays, 9 hr during the weekends, and 90.9% of them reported no difficulty falling asleep. Less than 0.4% of students reported to have sleep-walking episodes regularly, but nearly 7% reported regular sleep-talking episodes. Fourteen percent of the students reported frequent lucid dreams, and 6% reported frequent recurrent dreams. Researcher found a gender effect for several sleep and dream parameters, including dream recall frequency and time in bed, both of which were higher in women than in men. Researcher have also observed differences between academic disciplines, namely humanities students (Lyon 2) reported spending more time in bed than sciences students (Lyon 1). These results confirm a gender difference for several sleep and dream parameters, and suggest a link between academic disciplines and sleep duration.²⁴

Kaliyaperuma LD et al (2017) conducted a cross-sectional research study on Effects of Sleep Deprivation on the Cognitive Performance of Nurses Working in Shift. With the objective of finding out the prevalence of sleep deprivation and its impact on cognition among shift-working nurses. The study took place between August 2016 and September 2016. The participants of the study were all staff nurses who work on a rotating schedule at Peelamedu Samanaidu Govindasamy Hospitals in Coimbatore and Tamil Nadu, India. The staff worked the night shift for one month. The same staff worked the day shift the following month. SPSS (version 19.0) was used to analyse the data. Sleep deprivation was conveyed as a percentage. Nonparametrical values were compared with the use of a Wilcoxon signed rank test. Disturbed sleep patterns were found among 69% of the nurses due to shift work, based on the scores obtained from the ESS. The ESS score resulted in an average of 9.37. Among 42% of the nurses, they were found to have mild SD. A mild SD is considered to have an ESS score of eight to eleven. General intellect and attention scores decreased during the night. Meanwhile, the mean scores for mental speed and reaction time increased during the night hours. In comparison to night shift hours, day shift hours had both a higher MoCA test score and a higher execution/memory test.²⁵

Almojali AI et al (2017) conducted a research study on the prevalence and association of stress with sleep quality among medical students. The objective of the study was to find out the prevalence and relationship between poor sleep quality and stress among medical students. This cross-sectional study

was conducted using a stratified random sample of male and female medical students at King Saud bin Abdulaziz University for Health Sciences in Riyadh, Saudi Arabia. A self-administered questionnaire was distributed to assess sleep quality using the Pittsburgh Sleep Quality Index and stress level using the Kessler Psychological Distress Scale. Results of the study revealed a high prevalence of poor sleep quality (76%) and stress (53%), with a statistically significant association ($p = 0.001$). Logistic regression indicated that students who are not suffering from stress are less likely to have poor sleep quality ($OR = 0.28$, $p = 0.001$), and the risk of having poor sleep quality is almost four times higher in students whose cumulative grade point average (GPA) is less than 4.25 ($OR = 3.83$, $p = 0.01$). Researchers concluded that the study documents a statistically significant association between stress and poor sleep quality. A recommendation for the management of medical colleges is to establish academic counselling centres focusing on promoting good sleep hygiene, strengthening students' study skills, and coping with their stressful environments.²⁶

Asaggaf MA et al (2016) conducted a systematic research study on Sleep quantity, quality, and insomnia symptoms of medical students during clinical years, relationship with stress and academic performance. The objective of the study was to determine sleep habits and sleep quality in medical students during their clinical years using validated measures; and to investigate associations with academic performance and psychological stress. In this cross-sectional study, medical students ($n=320$) were randomly selected from a list of all enrolled clinical-year students in a Saudi medical school from 2011-2012. Result of the study revealed that, Students acquired on average, 5.8 hours of sleep each night, with an average bedtime at 01:53. Approximately 8% reported acquiring sleep during the day, and not during night-time. Poor sleep quality was present in 30%, excessive daytime sleepiness (EDS) in 40%, and insomnia symptoms in 33% of students. Multivariable regression models revealed significant associations between stress, poor sleep quality, and EDS. Poorer academic performance and stress were associated with symptoms of insomnia. Researcher concluded that, Sleep deprivation, poor sleep quality, and EDS are common among clinical years medical students. High levels of stress and the pressure of maintaining grade point averages may be influencing their quality of sleep.²⁷

Angelone AM et al (2011) conducted a research study on. Prevalence and correlates for self-reported sleep problems among nursing students. The aim of this paper was to conduct a survey based on a questionnaire that would characterize night time and daytime habits in nursing students to estimate the prevalence of chronic insomnia, sleep disturbance and their correlates. Researcher conducted a cross-sectional survey among 364 nursing students of the University of L'Aquila, in Italy. Self-reported sleep data were derived from Sleep and Daytime Habits Questionnaire" (S&DHQ) that covered sleep and daytime habits and academic progress. Anxiety and depression symptoms were assessed by the Mental Health Inventory-5 (MHI-5) questionnaire. A supplement includes information about lifestyle, health status and physical activity. Results of the study revealed that, the overall prevalence of insomnia was 26.7%. It increased significantly from 10.3% for students aged < 20 years to 45.5% for those aged > 40 years. The prevalence of sleep problems were 9.4% for disorders of initiating sleep, 8.3% for disrupted sleep, 7.7% for early morning awakening and subjectively poor quality of sleep 22.3%. Multiple logistic regression analysis showed that greater age was significantly associated with an increased risk of insomnia. Other risk predictors of insomnia were headache, severe depression and self perception of poor quality of life. Daytime sleepiness and morning tiredness were significantly associated with current smoking habit and painful physical condition. The risk of unsatisfactory academic progress increased significantly in students reported poor sleep quality.²⁸

b) Literature related to sleep deprivation among nursing students.

García A et al (2021) conducted a research study on the effects of sleep deprivation on basic cognitive processes. The objective of the study was to identify which specific components of these cognitive processes are more susceptible to a 24-hour sleep deprivation period. Participants were 23 undergraduate students. After sleeping freely, participants in the control group performed a continuous performance task to evaluate the components of attention, phonological and visuospatial tasks to record these components of working memory, and a Stroop-like task to assess cognitive inhibition and flexibility, two components of executive functions, at noon for three days. Whereas, the participants in the sleep deprivation group performed the same tasks at noon: after sleeping freely for one night, after a 24-hour sleep deprivation, and after one recovery night. Results of the study showed that, after the sleep deprivation, participants had a significant reduction in tonic alertness, selective and sustained attention, components of attention, and cognitive inhibition, a component of executive functions. Researchers concluded that a 24-hour sleep deprivation period reduces several specific components of the basic cognitive processes, which are crucial for performing many everyday activities, thus increasing the risk of errors and accidents.²⁹

Mishra P et al (2020) conducted a research study on cognition and alertness in medical students. The objective of the study was to evaluate the effects of a single night of partial sleep deprivation on the cognitive status and alertness of medical students in the Indian context and to find out the change in auditory event-related potential (AERP) and psychomotor vigilance of medical students following a single night of partial sleep deprivation. The study was a before-and-after experimental trial conducted among 20 medical student volunteers of a tertiary care hospital in eastern India. Baseline psychomotor vigilance tasks measured by unprepared serial reaction time and AERP measured by P300 were assessed at baseline (after normal sleep) and after four hours of sleep deprivation (intervention). Results of the study revealed that median RT had increased from 320.4 ms to 337.6 ms after acute partial sleep deprivation ($P .001$). P300 and lapses ($P .05$) were also found to significantly increase ($P .05$), while there was a significant decrease in correctness ($P .01$). The researcher concluded that the study concluded that cognition is affected, including alertness and latency, following partial sleep deprivation even for a single night and contradicted earlier results of Indian studies stating a variable effect on psychomotor vigilance.³⁰

Ramjan LM et al (2021) conducted a research study on the negative impact of Smartphone usage on nursing students. The objective of the study was to synthesize findings from published research that referred to the detrimental direct or indirect effect of Smartphone usage on nursing students. The integrative review was guided by the five-stage approach. A total of 646 articles were retrieved, and following removal of duplicates, screening of titles and abstracts, a final 27 articles met the inclusion criteria for this review. Results of the study revealed that, personal smartphone use was reported to be a distraction within clinical and classroom learning, and considered as uncivil, and compromised professionalism. Frequently, smartphones were used for entertainment (e.g. social networking) rather than professional purposes. The studies identified a concerning level of nomophobia and smartphone addiction among nursing students that caused stress and anxiety, and adversely affected sleep, learning and academic performance. Recommendations were proposed for Smartphone policies. Further researcher concluded that, Excessive Smartphone use among nursing students may adversely affect physical, mental health and potentially impact on student learning within the classroom and clinical environment.³¹

Thomas et al (2017) conducted a research study on Sleep deprivation in nursing students: The negative impact for quality and safety. The objective of the study was to understand nursing students' perception of the relationship between sleep deprivation and learning, and personal and patient safety when in a clinical or work setting. The researchers used a cross-sectional correlation design. The study was conducted in a Mid-western state university school of nursing with an average of 400 undergraduate pre-licensure nursing students. All 328 undergraduate pre-licensure nursing students were invited to participate in the study. The convenience sample of 179 (response rate of 55%) pre-licensure, nursing students completed the study. The Sleep Deprivation of Nursing Students, a 4-point Likert scale questionnaire, consisted of demographic questions and forty-five questions on personal sleep habits, caffeine/stimulant use, and sleep inducing aids, motor vehicle safety, spare time activities, and safety during work and clinical experiences. The result of the study revealed that All participants reported ($n = 179$) feeling sleep deprived. Researcher concluded that, nursing students may lack the knowledge that chronic sleep deprivation may result in personal and patient safety issues when in a clinical or work setting. Students are potentially exposing themselves to acute and chronic health problems as a result of sleep deprivation and the use of substances to remain awake or obtain sleep.³²

Patrick Y et al (2017) conducted a research study with the aim of investigating the effects of a night of sleep deprivation on cognitive and physical performance in students. A randomised controlled crossover study was carried out with 64 participants [58% male ($n = 37$); 22 4 years old (mean SD)]. Participants were randomised into two conditions: normal sleep or one night of sleep deprivation. Sleep deprivation was monitored using an online time-stamped questionnaire completed at 45-minute intervals in the participants' homes. Data were analysed using paired two-tailed T tests and MANOVA. Reaction time and systolic blood pressure post-exercise were significantly increased following sleep deprivation (mean SD change: reaction time: 0.15 0.04 s, $p = 0.003$; systolic BP: 6 17 mmHg, $p = 0.012$). No significant differences were found in other variables. Reaction time and vascular response to exercise were significantly affected by sleep deprivation in university students, while other cognitive and cardiopulmonary measures showed no significant changes. These findings indicate that acute sleep deprivation can have an impact on physical but not cognitive ability in young, healthy university students.³³

Chua EC-P et al (2017) conducted a research study on the effects of total sleep deprivation on divided attention. Researchers hypothesized that, for a divided attention task that is highly cognitively demanding, performance would show greater impairment during exposure to sleep deprivation. A group of 30 healthy males aged 21–30 years was exposed to 40 hours of continuous wakefulness in a laboratory setting. Every 2 h, subjects completed a divided attention task comprising 3 blocks in which an auditory Go/No-Go task was 1) performed alone (single task); 2) performed simultaneously with a visual Go/No-Go task (dual task); and 3) performed simultaneously with both a visual Go/No-Go task and a visually guided motor tracking task (triple task). Performance on all tasks showed substantial deterioration during exposure to sleep deprivation. A significant interaction was observed between task load and time since waking on auditory go/no-go task performance, with greater impairment in response times and accuracy during extended wakefulness. The results of the study revealed that the ability to divide attention between multiple tasks is impaired during exposure to sleep deprivation. These findings have potential implications for occupations that require multi-tasking combined with long work hours and exposure to sleep loss.³⁴

Ghamdi, A.A.. (2013) conducted an exploratory cross sectional study on sleep deprivation and academic performance of students in the collage of nursing at King Saud University. The aim of the present work was to explore the relationship between the sleep deprivation and academic performance of students in collage of nursing. Sample was taken 114 students; 10 of them master students and 104 undergraduate students were included in the study representing all college levels expect the preparatory year. The researcher developed a tool that includes academic performance, technology use and sleep patterns and extracurricular activities. The study related that majority of the subjects included in the study use various habits that deprived them from sleep especially the night before exam.³⁵

c) Literature related to effect of sleep deprivation on academic performance among nursing Students.

Sutay SS et al (2022) conducted a research study on sleep patterns, issues, reasons for sleep problems, and their impact on academic performance among first-year medical students in Central India. The objective of the present study was to determine undergraduate medical students' sleeping habits as well as the numerous causes of sleep disorders. The secondary aim of the research was to determine the influence of sleep-related problems on students' academic performance. Following approval from the Ethics Committee, a cross-sectional study of 171 first-year medical students was conducted using a semi-structured, self-administered questionnaire. Data was collected using Google Forms on the internet. Microsoft Excel 2019 was used to enter and analyses the data. The prevalence was expressed as a percentage with a 95% confidence interval. The mean and standard deviation of continuous variables were reported. Results of the study revealed that, of all included students, 39.2% reported having six to seven hours of sleep each day. Study-related reasons were indicated by 32.6% of students, followed by those who utilized social media (21.7%). Laziness, exhaustion, annoyance, and restlessness were the top reasons for sleeping less (27.5%). Prior academic success was significantly connected to sleep duration, while current sleep duration was not.³⁶

Marta et al (2020) conducted a cross sectional research study with the objective to examine the prevalence of sleep disturbances and academic performances in male and female nursing students and to determine gender-specific effects on the relationship between sleep disturbances and academic performance. Data was collected from July 1, 2018 to September 30, 2018. Biosociodemographic characteristic data was collected. Using the Pittsburgh Sleep Quality Index (PSQI), the Insomnia Severity Index, the Epworth Sleepiness Scale, and the Morningness Eveningness Questionnaire, sleep was assessed. Depression was measured using the Beck Depression Inventory. Based on grade point averages from the 2017-2018 academic year, academic performance was measured. Both male and female Nursing students suffered from poor sleep quality and insomnia, which resulted in daytime sleepiness. In comparison with female nursing students with insomnia, female nursing students without insomnia had a lower risk of poor academic performance. In male students with insomnia and without insomnia, there was no difference in academic performance.³⁷

Suardiaz-Muro M et al (2020) conducted a systematic review of research on sleep and academic performance in university students. The aim of the study was to conduct a systematic review of the existing literature on the relationship between sleep and academic performance in university students. The articles included in the PubMed database were selected following the PRISMA guidelines. Studies evaluating samples of subjects with an average age between 18 and 26 years, published in English or Spanish during the period 2000–2019, were included. Subsequently, the quality of the selected articles was evaluated according to the STROBE standard. The result of the study showed that thirty studies

were identified, which were grouped according to different aspects of sleep: drowsiness, duration, experience of total sleep deprivation, sleep quality, chronotype, regularity, and sleep disorders. Further the researcher concluded that inadequate sleep has a negative effect on the academic performance of university students.³⁸

Seoane et al (2020) conducted a research study with the objective of assessing the prevalence of sleep disruption in medical students and its relationship with academic performance. In this study, there was a mixed sample of participants with various medically related careers, such as medical, kinesiology, and nursing students. During the regular school period, the participating students were assessed. At any rate, whether invalidated or validated, subjectively or objectively, sleep quality measurement, duration of sleep, or sleepiness during the day, covering more than one evening, A questionnaire, standardized tests, and grade point averages were used to assess academic performance. In some studies, it was found that medical students who slept for shorter periods of time performed better. In sleep-deprived students, academic performance and quality of life can be improved with occasional sleep assessments and psychiatric evaluations. Impaired academic performance was associated with poor sleep quality as well as excessive daytime sleepiness. The study consisted of 14,170 medical students, which is considered a large sample size.³⁹

Ella et al (2019) investigated sleep deprivation and academic performance on nursing students of University of Calabar. A self-structured instrument was administered to a sample of 109 students. Data was analyzed using SPSS version 20.0. Most, 55(50.5. %) of the respondents start depriving themselves of sleep immediately after resumption. On school days, most 53 (48.6%) respondents sleep for 1–3 hours on average; while 40(36.7%) respondents sleep for 4–6 hours on average. During weekends most, 69(63.3%) respondents sleep for 4-6 hours on average, however, during examinations, majority 73(67. %), sleep for 1–3 hours on average. 64(58.6%) take different substances to keep awake. More male 69(63.3%) respondents start depriving themselves of sleep immediately after resumption, as against 50(46%) female respondents. Male students have an average sleep of 5.02 hours during schools days; 5.07 hours during weekends, and 2.39 hours during examinations, while female students have an average sleep of 5.25 hours during schools days, 5.43 hours during weekends, and 4.77 hours during examinations. Male students have a lower mean (SD) hours of sleep of (4.16±.35) compared to female students mean (SD) hours of (5.15±.49). The result further showed a statistically significant relationship between sleep deprivation and academic performance, also, a statistically significant influence of sleep deprivation on academic performance of male and female nursing students.⁴⁰

Aung, K.T et al., (2016) conducted a quantitative, cross-sectional study with an aim to identify the association between quality of sleep and its impact towards academic performance among nursing students at the Faculty of Nursing in International Islamic University, Malaysia (IIUM). There were 105 nursing students involved as participants and they were selected by using the convenience sampling method. The questionnaires consisted of three parts; Socio-demographic (age, gender, level of study and participation in extracurricular activities), Pittsburgh Sleep Quality Index (PSQI) and Academic performance (GPA). About 48.6% out of a total of 105 nursing students had a PSQI score of five and more which means ‘good sleep quality’ and 51.4% had a score of less than 5 which means ‘poor sleep quality’. The result showed that there was a significant association between sleep quality and academic performance. The findings provided information regarding sleep quality of students in the Faculty of Nursing and its impact towards academic performance.⁴¹

El Desouky et al., (2015) conducted a study on Relationship Between Quality of Sleep and Academic

Performance Among Female Nursing Students. The study was carried out at College of Nursing and Allied Health Sciences in Jazan city at kingdom of Saudi Arabia. The study sample was comprised of two hundred female nursing students who agree to participate for the study. The tools of this study were consisting of three instruments first; includes socio-demographics characteristics the second; Pittsburgh Sleep Quality Index (PSQI) and the third; Epworth Sleepiness Scale for Daytime Sleep Deprivation. The results of this study showed that 82.5% of students were in second academic year, more than two thirds of students have from six to less than 4 sleeping hours, less than half of them have academic score average students (GPA <3.75/5). Less than three quarters of them can't fall asleep within 30 minutes after going to bed from one to more than three times per week. Furthermore, near two thirds of students have poor total sleep quality and students with good total sleep quality have good academic score with positive correlation with highly statistically significant difference. This result concluded that Students with good total sleep quality have good academic score with positive correlation with highly statistically significant difference.⁴²

Yasin, et al., (2015) conducted a cross-sectional survey on Incidence of sleep deprivation and its relation with academic performance of undergraduate students of Karachi with an objective to find out the incidence of sleep deprivation, its quality and relation with academic performance of undergraduate. Sleep deprivation was measured by using Groninger sleep quality scale and self-made questions. Data analysis was done by using SPSS 16.0. Result of the study revealed that day sleepiness was found to be present in majority of students which is independent factor. 412 students were found to have poor sleep quality. 44 students were found to have difficulty falling asleep. Many students were found to be sleep deprived. Comparison analysis revealed the inverse relation between sleep duration and academic. Further the researcher concluded that decrease in sleep quantity affects academic performance of students. Day sleepiness and poor quality sleep are not associated with academic performance. There is a firm relationship between grades of students with their amount of sleep before exams.⁴³

Kana Okano et al (2019) conducted a qualitative research study with the objective of exploring how sleep affects university students' academic performance by objectively and ecologically tracking their sleep throughout an entire semester using a Fitbit, a wearable activity tracker. A second aim was to understand gender differences in sleep and academic performance. To measure the correlation between multiple sleep measures and in-class performance on quizzes and midterm examinations, a total of 88 participants were chosen from an MIT class offered in the fall semester. They were chosen from the solid state chemistry class. A wearable activity tracker was provided to each student. The students were assigned a specified section to attend and were not allowed to attend other sections. This ensures the same TA is used throughout the semester. The students took a weekly quiz, three midterms approximately three to four weeks before the exam date, and a final exam covering content from the entire semester. Poorer grades were associated with worse quality, shorter duration, and less consistency of sleep. Improved sleep quality prior to taking a test did not correlate to better test performance. However, improving both the length and quality of sleep for a month and a week before a test did correlate to better grades. Approximately 25% of the academic variances were a result of sleep measures.⁴⁴

Ahrberg K et al (2012) conducted a research on the interaction between sleep quality and academic performance. Sleep quality has significant effects on cognitive performance and is influenced by multiple factors such as stress. Contrary to the ideal, medical students and residents suffer from sleep

deprivation and stress at times when they should achieve the greatest amount of learning. In order to examine the relationship between sleep quality and academic performance, 144 medical students undertaking the pre-clinical board exam answered a survey regarding their subjective sleep quality (Pittsburgh sleep quality index, PSQI), grades and subjective stress for three different time points: semester, pre- and post-exam. 59% of all participants exhibited clinically relevant sleep disturbances (PSQI > 5) during exam preparation compared to 29% during the semester and 8% post-exam. This study showed that in medical students it is not the generally poor sleepers, who perform worse in the medical board exams. Instead students who would perform worse on their exams seem to be more stressed and suffer from poor sleep quality. However, poor sleep quality may negatively impact test performance as well, creating a vicious circle. Furthermore, the rate of sleep disturbances in medical students should be cause for intervention.⁴⁵

Abraham, J., & Scaria, J. (2015). conducted a research study on Influence of sleep in academic performance - an integrated review of literature. A literature search was conducted in the year of 2014 to understand about the academic performance of nursing and medical students. A literature review of abstracts and articles discussing the study aim on the importance of sleep in academic performance, written in English, and published between 2001 and 2014 were searched. Articles were identified from four data bases using CINAHL, Pub Med, Google Scholar, and Medline with Full Text. The finding of the study revealed that majority of the studies showed that decreased sleep has an impact on students' academic performance. Further researcher concluded that majority of the students is at risk of insomnia, and has an impact on their academic performance. So the teachers and the institution should have some programmes and activities to improve the sleeping pattern so that students can perform better in their personal and professional life.⁴⁶

Summary:

This chapter of review of literature dealt with relevant and useful literature related to present study which was the backbone to conduct the study. The related review of literature was finely reviewed and examined by the investigator will be dividing review of literature into following headings:

- a) Literature related to sleep quality among nursing Students.
- b) Literature related to sleep deprivation among nursing students.
- c) Literature related to effect of sleep deprivation on academic performance among nursing Students.

This supports to study that a good quality of sleep is needed for the students to do good in their academic performance. The sleep deprivation in nursing students had negative impact on academic performance among nursing Students.

CHAPTER - III

RESEARCH METHODOLOGY

“Design is the conscious effort to impose a meaning full order.”

-Victor Papanek

Research methodology refers to the investigator's overall plan for obtaining answers to the questions and the testing of research hypothesis.

According to Polit DF and Hungler BP, research methodology is a technique that is used to structure a study and to gather the information in systematic fashion. “This scientific method involves the formal application of systematic and logical procedures that guides the investigation of the interest. The

scientific researcher similarly endeavours to understand, explain and predict this task in more orderly and systematic fashion that is typical of most of our everyday effort to solve problem.”⁴⁷

It includes procedures used in making systematic observations or otherwise obtaining data, evidence, or information as part of a research project or study, which refers to the planning and organization of such procedures.

This chapter deals with the particular methodology adopted by the investigator while conducting the study. It contains the research approach, research design, variables, setting of the study, population, sample and sample size, criteria for sample selection technique and tool validity, reliability, pilot study, the data collection process and plan for data analysis.

The research design is the plan, structure, and strategy of investigations of answering the research question is the overall plan or blue-print the researchers select to carry out their study.⁴⁸

The research methodology refers to the set of orderly disciplined procedures involves in the purposeful collection, analysis and interpretation of data.

The present study is “To assess the sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city.”

RESEARCH APPROACH:

The selection of the research approach is the basic procedure for the conduct of research. A research approach tells the investigator as to what data to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data.

Research approach is the blue print for conducting the study which maximizes control over factors that could interfere with the validity of the findings. The type of research approach will depend upon the research problem to be examined. The purpose of quantitative study is to observe, describe and explore aspects of situation or to understand the underlying cause of the variable.⁴⁹

Research approach casts light on the nature and purpose of the study. According to Polit and Hungler, “Research approach refers to the way in which the researcher plans or structures the research process. It is a set of the flexible spots designed to keep the research in the right direction. This scientific process helps to acquire dependable and useful information.”⁵⁰

It is concerned with objective or subjective assessment of the subjects in order to find out the effect of one phenomenon over the others. It also highlights the variables that are observed in the study.

In this study, a Quantitative Non-experimental research approach was used to identify and document the aspects of situation as it occurs naturally. A Quantitative approach is more appropriate “To assess the sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city.”

RESEARCH DESIGN:

Research design refers to the researcher’s overall plan for obtaining an answer of the research question and to test research hypothesis.

Research design incorporates the most important methodology decisions that the investigator makes in conducting a research study. It depicts the overall plan for organization of scientific investigation.⁵¹

It helps the investigator in selection of subjects, manipulation of independent variable, observation of a type of statistical analysis to be used to interpret the data. The type of research design to be chosen will depend upon the research question or problem to be examined.

The research design adopted for the study was Quantitative Non-experimental Descriptive correlational research design. The design widely used in educational research.

RESEARCH DESIGN:

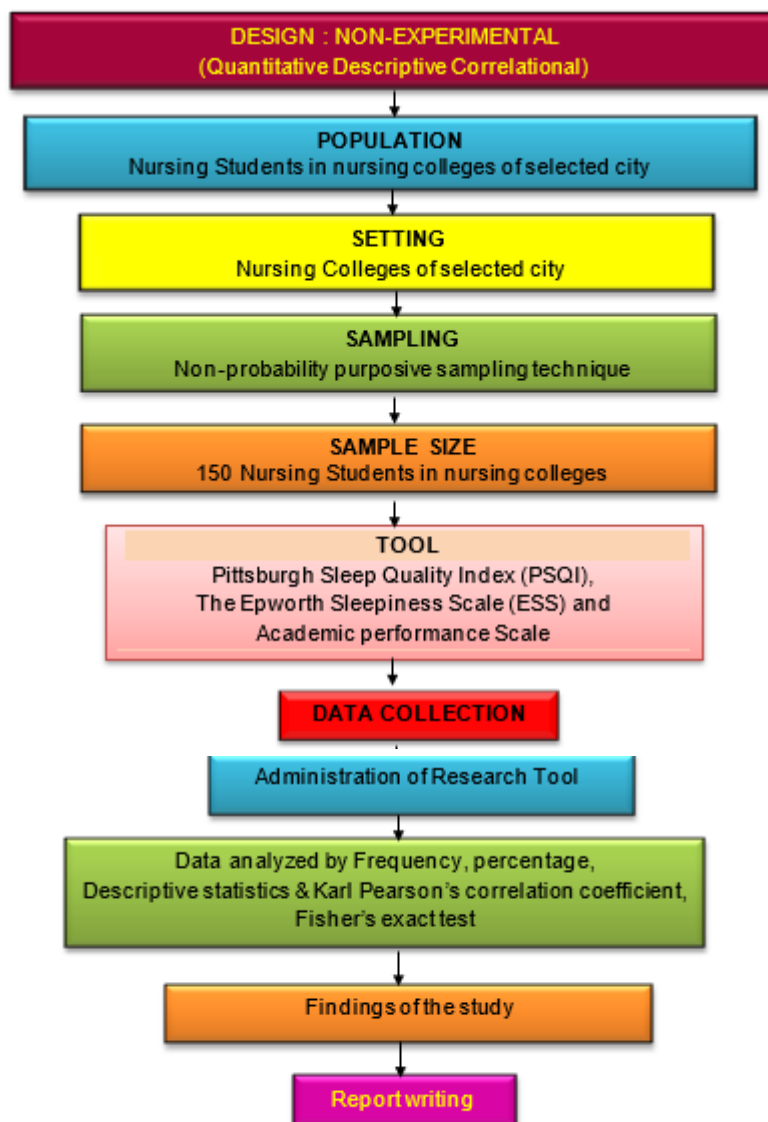


Figure 2. Schematic representation of the study design

VARIABLES:

Variable is an attribute of a person or object that varies and is taken on different values.

Variables are qualities, properties or characteristics of person, things or situations that Change or vary.⁵² Variables are demographic variables like Age, Gender, Religion, Residence, Education, Year of education, use of mobile, type of mobile and internet connection on mobile, night duties etc.

Independent variable: Independent variable is the conditions/characteristics that investigator can manipulate.

The independent variable in this study was Sleep deprivation.

Dependent variable: Dependent variable is the condition or characteristic that appears, disappears or changes as the investigator introduces, removes or changes the independent variables.

The dependent variable in this study was Academic performance of nursing students.
The effect of the independent variable on the dependent variable was studied.

SETTING OF THE STUDY:

A setting is the physical location and conditions in which data collection takes place.

In order to carry out the study effectively, nursing colleges in city was selected, so that adequate samples would be available for conducting the study in planned time.

IDENTIFICATION OF TARGET AND ACCESSIBLE POPULATION:

POPULATION – It is the entire aggregation of cases that meet a designed set of criteria.

In this study, population is Nursing Students in city.

TARGET POPULATION – It is the aggregate of cases which the investigator would like to generalize

In this study target population is Nursing Students.

ACCESSIBLE POPULATION – It is the aggregate of cases that conform to designated criteria and that are accessible as subjects for the study.

In this study, accessible population consisted of Nursing Students in nursing colleges of selected city.

SAMPLE AND SAMPLING TECHNIQUE:

SAMPLE:

Sample is a subset of the population of the interest selected to participate in the study.

In this study, samples were Nursing Students at selected nursing colleges.

SAMPLING TECHNIQUE:

Sampling technique is the process of selecting a group of people, events, behaviours or other elements that are representative of population being studied.

The sampling technique used in this study was Non-probability purposive sampling technique. The investigator selected this technique as it is the most suitable technique where the desired sample size could be achieved in the small time frame and also because of this sampling technique the subject was easily available to the investigator.

SAMPLE SIZE:

Sample size is the number of samples selected to participate in the study.

The sample size was 150 Nursing Students who fulfil the required inclusion and exclusion criteria.

$$n = \frac{(Z)^2 \times P \times Q}{d^2}$$

Where,

n = sample size

P = 42%

Q = 100 – P = 58%

Z= Standard normal variant for =0.05 (95%CI) = 1.96

d = experimental error = 8%

Substituting the values in the formula

The minimum sample size is 147

So Approximate sample size taken for this study is 150.

CRITERIA FOR SAMPLE SELECTION:

Eligibility criteria are the characteristics that delimit the population of interest.

A. INCLUSION CRITERIA**Students those who are-**

1. Studying in nursing programme
2. Willing to participate in the study.
3. Available at the time of study.
4. Able to read in English.
5. Both Male & Female Students are included

B. EXCLUSION CRITERIA:**Students those who are-**

1. Not available during or at the time of study.
2. Sick during data collection.
3. Not willing to participate in the study.
4. On leave at the time of study.

C. WITHDRAWAL CRITERIA:

Samples can withdraw from research at any point of time during the data collection.

PLAN FOR DATA COLLECTION AND DATA ANALYSIS

- a) Approval from the research committee member and written permission from the Principal of Nursing Colleges to conduct the research.
- b) Explain the purpose of the research to the samples.
- c) Obtained informed written consent form from samples.
- d) Part of Tool section A, B and C was executed
- e) Data was analyzed using descriptive statistics.
- f) Study findings were drawn with the help of chi-square test.

DATA COLLECTION TECHNIQUE AND TOOL PREPARATION:

The most important and crucial aspect of any investigations is the collection of appropriate information, which would provide necessary data to answer the question raised in the study. Collection of data refer to purposive gathering of information relevant to the subject matter under study and the methods used depend mainly on the nature, purpose and scope of the inquiry to be undertaken, as well as on the availability of resources and time.

The present study is aimed to assess the “Sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city.”

Development of tool

The tool used for the study are Pittsburgh Sleep Quality Index (PSQI), The Epworth Sleepiness Scale (ESS) and Academic Performance Scale which is used “To assess the sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city.”

Sections:

Section A: Informed Written Consent form

Section B: Socio demographic data

Section C: Pittsburgh Sleep Quality Index (PSQI) And Epworth

Sleepiness Scale (ESS).

Section D : Academic Performance Scale

The construction of tool was carried out as follows,

1. Review of literature
2. Construction tool
3. Consultation with experts from the field
4. Translation of tool
5. Standardization of tool
6. Preparation of final draft

Review of literature

Related books, journal, articles, published and unpublished research studies were reviewed and used to construct the tool.⁵³

Construction of tool

a) Preparation of tool

It consists of following sections like,

Section A: This section consists of Informed Written Consent form

Section B: Socio demographic data.

This section consists of 10 items for obtaining information about Socio demographic profile of nursing students like, Age, Gender, Religion, Residence, Education, Year of education, use of mobile, type of mobile and internet connection on mobile, night duties etc.

Section C: Pittsburgh Sleep Quality Index (PSQI) And Epworth Sleepiness Scale (ESS) to assess the quality of sleep and sleep deprivation among nursing students of selected nursing colleges of the city.

This section consists of 10 items. The order of the PSQI items has been modified from the original order in order to fit the first 9 items (which are the only items that contribute to the total score) on a single page. Item 10, which is the second page of the scale, does not contribute to the PSQI score.

In scoring the PSQI, seven component scores are derived, each scored 0 (no difficulty) to 3 (severe difficulty). The component scores are summed to produce a global score (range 0 to 21). Higher scores indicate worse sleep quality.

The Epworth Sleepiness Scale is widely used in the field of sleep medicine as a subjective measure of a patient's sleepiness. The test is a list of eight situations in which you rate your tendency to become sleepy on a scale of 0, no chance of dozing, to 3, high chance of dozing. When you finish the test, add up the values of your responses. Your total score is based on a scale of 0 to 24. The scale estimates whether you are experiencing excessive sleepiness that possibly requires medical attention.

This scale Interpreted as:

0-7:- It is unlikely that you are abnormally sleepy.

8-9:- You have an average amount of daytime sleepiness.

10-15:- You may be excessively sleepy depending on the situation. You may want to consider seeking medical attention.

16-24:- You are excessively sleepy and should consider seeking medical attention.

Section D : Academic Performance Scale to assess the Academic performance of nursing students.

This section consists of 8 questions. Scoring Instruction: To score the scale, “Strongly Agree” is scored (5), “Agree” is scored (4), “Neutral” is scored (3), “Disagree” is scored (2) and “Strongly Disagree” is scored (1).

This scale Interpreted as:

33 – 40 is Excellent Performance

25 – 32 is Good Performance

17 – 24 is Moderate Performance

9 – 16 is Poor Performance

0 – 8 is Poor Performance

Consultation with guide and subject experts

The tool was given to the experts in various fields such as Department of Psychiatry, Department of Mental Health nursing, department of Biostatistics and language expert. Their opinion and suggestions were considered to modify the tool, consulted with the guide while finalizing the tool.

STANDARDIZATION OF TOOL:

VALIDITY:-

Validity is the ability to produce finding that are in agreement with the conceptual and theoretical values.

The content validity of tool was established in consultation with guide and experts. The validity was established by consulting the total 12 experts from specialized field. Out of which 7 - Mental health nursing, 2 - Psychiatrist, 1-statistician and 1 English literature lecturer. The tool was modified according to the suggestion and recommendation of experts. Modification done after validity.

RELIABILITY:-

According to Polit and Hungler, reliability is defined as the degree of consistency or accuracy with which an instrument measures the attribute, it is designed to measure. It is extent to which an instrument yields the same results on repeated measures.

It is the degree to which it measures the attribute it supposes to be measuring.

Reliability will be calculated using Cronbach alpha reliability method separately.

‘R’ value will be calculated by

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_y^2}{\sigma_x^2} \right)$$

Reliability of the tool was tested by implementing the tool on 15 nursing students. The reliability of Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS) and Academic Performance Scale are $r = 0.77$, $r = 0.78$ and 0.92 respectively. So the reliability value is more than 0.5, hence the tool has been found to be effective and statistically reliable. It showed high degree of correlation.

PILOT STUDY:-

“Pilot study is a smaller version of the proposed research study conducted to revise and refine the data collection process, the treatment, intervention of the research tool.”

Pilot study is a small or mini study, preliminary investigation of general character as that of major study. It is a miniature final run of the methodology planned for the major project. The pilot study was undertaken to assess the feasibility of the planned study, adequacy of the instrumentation and to detect any problem in the proposed methodology.

Pilot study was conducted before actual data collection on 10% of the sample size. 15 samples were selected by non-probability purposive sampling technique, based on the inclusion criteria to assess the feasibility of the study and to decide the statistical analysis and practicability of research.

Prior administrative permission of the above institute was taken. Pilot study carried out between 07/10/2024 to 09/10/2024. The researcher approached the subjects, informed regarding the objectives of the study and obtained consent after assuring the subjects about the confidentiality of the data. The finding of the pilot study was analyzed. The study was carried out in the same way it was planned for major study. It was found that sleep deprivation does not affect academic performance among nursing students. Further no difficulties were encountered during the pilot study.

The pilot study helped the investigator to visualize the practical problem that could be encountered while conducting pilot study. It has also given insight into the actual process of data collection and analysis.

The study design was hence found feasible, practical and convenient and it helped the investigator to gain more clarity about the data gathering process.

There were some changes made in the tool after the pilot study. As per suggestions by experts the tool was simplified. In the tool certain items were revised, reframed and finalised after opinion and permission from the research guide.

Analysis of the Pilot study

Table No. 1: General assessments of sleep deprivation (PSQI) among nursing students.
(n = 15)

Variable	Groups	Score	Frequency	Percentage
Sleep Quality (PSQI)	Good	0-7	5	33.33
	Average	8-14.	10	66.67
	Poor	15-21.	0	0.00
Sleep Quality	Minimum		2	
	Maximum		11	
	Average (SD)		8.13 (2.20)	

Assessment of the sleep deprivation (PSQI) among nursing students of selected nursing colleges of the city shows that, 33.33% of them had good sleep quality, 66.67% had average and no one of them had poor sleep quality. Average sleep quality score of nursing students of selected nursing colleges was 8.13 with standard deviation of 2.20. The minimum score of sleep quality was 2 with maximum score of 11.

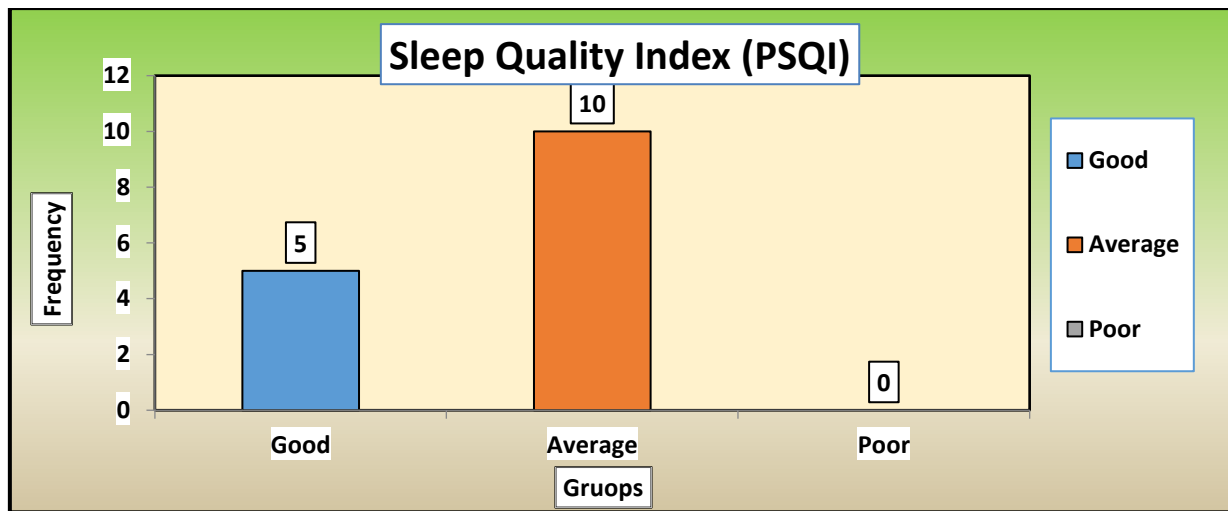


Figure No. 3: General assessments of sleep deprivation (PSQI)

**Table No. 2 : General assessments of sleep deprivation (sleepiness) among nursing students.
(n = 15)**

Variable	Groups	Score	Frequency	Percentage
Sleepiness	abnormally sleepy	0-7	0	0.00
	average	8-9.	0	0.00
	may excessively sleepy	10-15.	15	100.00
	excessively sleepy	16-24	0	0.00
Sleepiness	Minimum		11	
	Maximum		15	
	Average (SD)		13.00 (1.41)	

Assessment of sleep deprivation (sleepiness) among nursing students of selected nursing colleges of the city shows that, no one of them were abnormally sleepy, no one were average sleepy, all 100% may excessively sleepy, no one were excessively sleepy.

Average sleep deprivation score of nursing students of selected nursing colleges was 13.00 with standard deviation of 1.41. The minimum score of sleep deprivation was 11 with maximum score of 15.

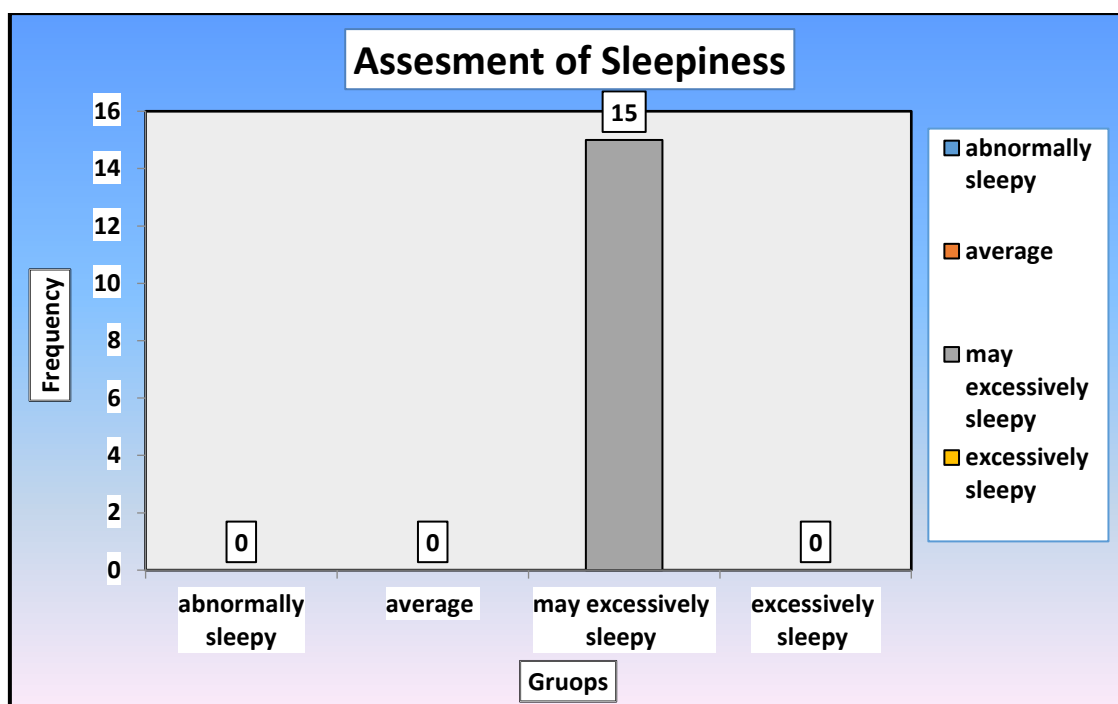


Figure No- 4: General assessments of sleep deprivation (sleepiness)

Table No. 3 : General assessments academic performance among nursing students.
(n = 15)

Variable	Groups	Score	Frequency	Percentage
ACADEMIC PERFORMANCE	Excellent Performance	33-40	5	33.33
	Good Performance	25-32	7	46.67
	Moderate Performance	17-24	3	20.00
	Poor Performance	9-16.	0	0.00
	Falling Performance	0-8	0	0.00
ACADEMIC PERFORMANCE	Minimum	24		
	Maximum	38		
	Average (SD)	30.53 (4.91)		

Assessment of the academic performance among nursing students of selected nursing colleges of the city shows that, 33.33% of them had excellent performance, 46.67% had good performance and 20% students had moderate performance.

Average academic performance score of nursing students of selected nursing colleges was 30.53 with standard deviation of 4.91. The minimum score of academic performance was 24 with maximum score of 38.

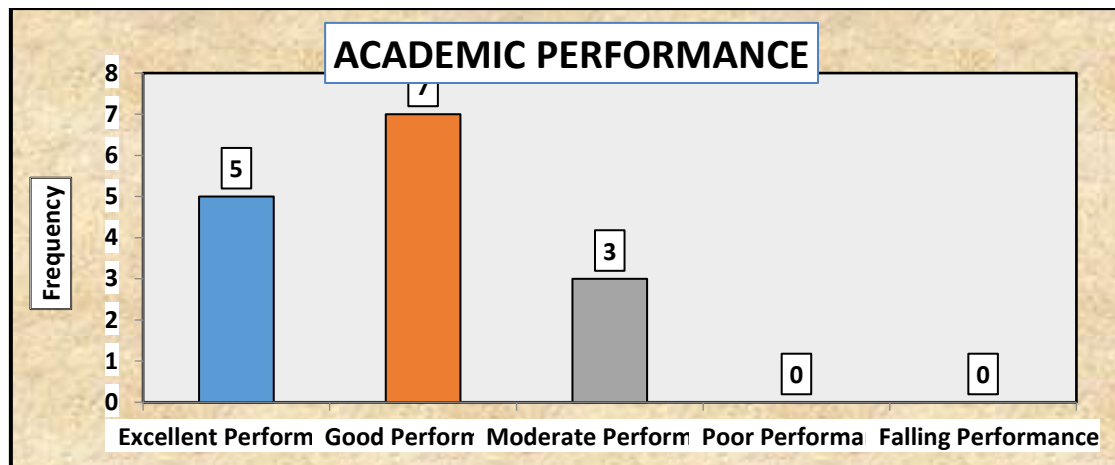


Figure No- 5: General assessments academic performance among nursing students

Table No. 4 : Correlation of sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges
(n = 15)

Correlation	p value
-0.324	0.23

The Karl Pearson's correlation coefficient was used to find the correlation between sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges of the city.

The correlation coefficient between sleep deprivation (PSQI) and academic performance was -0.324 with the p value 0.23. The p value more than 0.05, shows the no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students.

The scatter diagram, also confirms no correlation between sleep deprivation (PSQI) and academic performance.

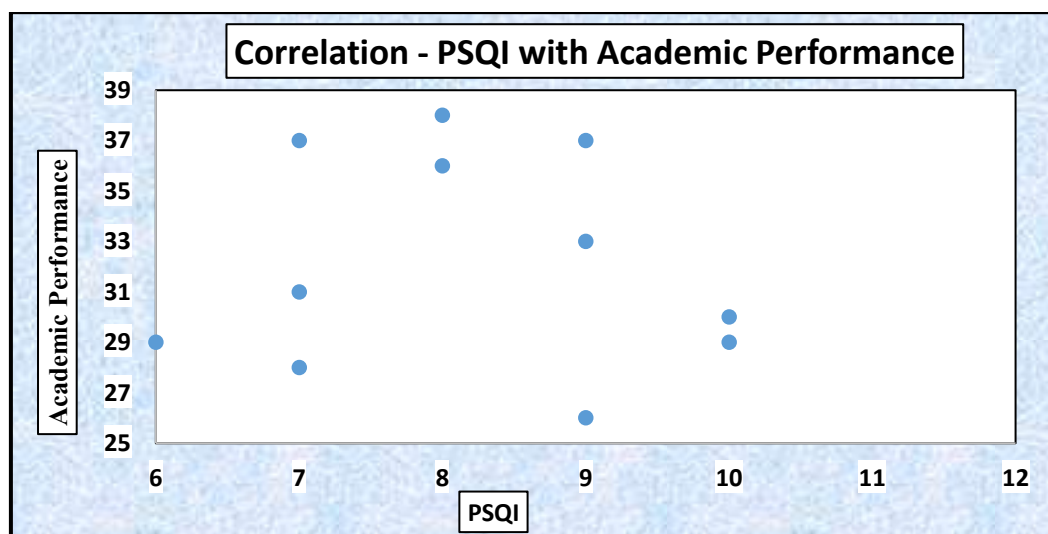


Figure no. 6 : Scatter Diagram - Correlation of sleep deprivation (PSQI) and academic performance

Table No. 5 : Correlation of sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges. (n = 15)

Correlation	p value
0.144	0.61

The Karl Pearson's correlation coefficient was used to find the correlation between sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges of the city. The correlation coefficient between sleep deprivation (Sleepiness) and academic performance was 0.144 with the p value 0.61. The p value more than 0.05, shows the no significant correlation between sleep deprivation (Sleepiness) and academic performance among nursing students.

The scatter diagram, also confirms no correlation between sleep deprivation (Sleepiness) and academic performance.

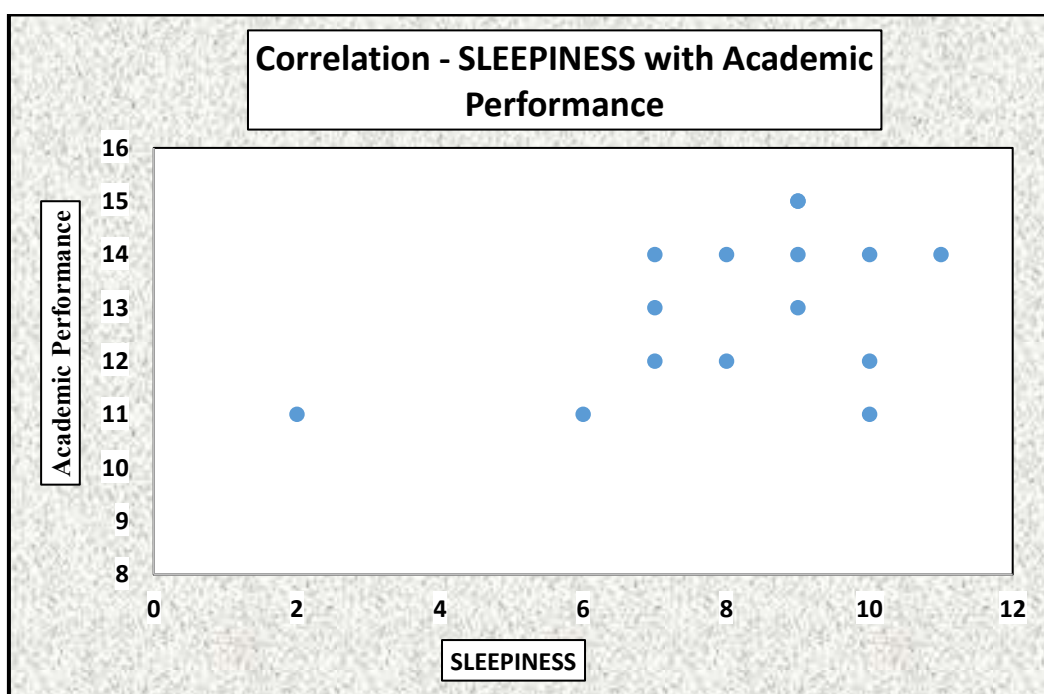


Figure no. 7 : Scatter Diagram - Correlation of sleep deprivation (Sleepiness) and academic performance

Feasibility of study:

The primary reason for selecting the critical care was that they were easily accessible to the investigator and the expected cooperation. Permission for the study was acquired from the concern authority. The pilot study carried out also indicated that the study was feasible.

The participants were chosen as they were feasible in terms of:

1. Geographical proximity.
2. Economy in terms of time.
3. Transport facilities.
4. Cooperation and availability of subjects.

DATA COLLECTION PROCESS:

The process of data collection started on 16th November 2024 and continued until 22th November 2024. Before initiating data gathering, the investigator obtained consent from the relevant authorities of the chosen area. The investigator chose participants who fulfilled the inclusion criteria. The investigator presented himself and articulated the aim of the study, assuring them of the confidentiality of the information gathered. The investigator then took the written consent from the subjects for their participation in the study.

A data was collected using a Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS) and Academic Performance Scale.

The data collection process continued till the desired sample size was reached within the time frame. The subjects and authorities were thanked for their co-operation and support. The data collection process ended on 22th November 2024.

PLAN FOR DATA ANALYSIS:

The evaluation of the data is carried out according to the study's objectives. The data will be assessed in the following manner:

1. The demographic characteristics of the subjects will be analysed using frequency and percentage.
2. General assessments of sleep deprivation (PSQI), sleep deprivation (sleepiness) and academic performance among nursing students will be examined through frequency and percentage analysis.
3. Correlation of sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges will be examined through Karl Pearson's correlation coefficient.
4. Correlation of sleep deprivation (sleepiness) and academic performance among nursing students of selected nursing colleges will be examined through Karl Pearson's correlation coefficient.
5. The inferential statistics i.e., 'Fisher's exact test' was used to find the association between the sleep deprivation and its impact on academic performance among nursing students with selected demographic variables.
6. The computed information will be displayed as graphs and tables.

SUMMARY:

Non-experimental Quantitative research approach and Descriptive Correlational Research design was used to assess the sleep deprivation and its impact on academic performance among 150 nursing students of selected nursing colleges of the city. The research tool was prepared and tested for reliability and validity. The data collection was carried out and the data was analysed by using the descriptive and inferential statistics, which will assist in a more effective manner to gather data from subjects so as to enhance the study's effectiveness. The result was presented in the form of tables and figures in the following IV chapter i.e., analysis and interpretation of the data.

CHAPTER - IV**DATA ANALYSIS AND INTERPRETATION**

"Not everything that can be counted counts, and not everything that counts can be counted."

- Albert Einstein

This chapter concerns the examination and explanation of data. Typically, the data itself does not supply

answers to our research inquiries. The volume of data gathered in the study is too vast to be accurately conveyed by simple observation.

Its main purpose is to summarize and organize the data in a meaningful way to interpret and provide answers to the problem, which is found in the study as per the objectives of the study.

The term analysis pertains to the calculation of specific metrics as well as the exploration of relationships that are present among the groups of data.

Statistical procedures allow the researcher to condense, summarize, arrange, assess, interpret, and convey numerical data. Statistical techniques are methods for making quantitative data significant and beneficial.

The gathered data were organized, tabulated, examined, and interpreted through descriptive and inferential statistics. The data has been examined and interpreted considering the study's objectives and hypotheses. The data was assessed to assess the effect of sleep deprivation on academic performance among nursing students of selected nursing colleges. It is displayed in the form of tables and figures.

ANALYSIS AND INTERPRETATION OF DATA

"He, who would search for pearls, must dive below."

- John Dryden.

The data was collected by Non-probability purposive sampling technique from 150 nursing students in nursing colleges of selected city. The data collected were classified and analyzed according to the objectives of the study.

The objectives of the study were:

1. To assess the sleep deprivation among nursing students of selected nursing colleges.
2. To assess the effect of sleep deprivation on academic performance among nursing students of selected nursing colleges.
3. To find out an association between sleep deprivation among nursing students with selected demographic variables.

HYPOTHESIS:

H₀: ((Null Hypothesis) There will be no significant relationship between sleep deprivation and academic performance among nursing students. (P at 0.05 level of significance)

H₁: There is significant relationship between sleep deprivation and academic performance among nursing students. (P at 0.05 level of significance)

H₂: There is significant association between sleep deprivation and selected socio-demographic variables at 0.05 level of significance. (P at 0.05 level of significance)

DATA INTERPRETATION AND ORGANIZATION OF DATA: TABLES, FIGURES AND GRAPHS

The information gathered from the study was categorized, arranged, and examined under the following sections: -

SECTION I: Deals with analysis of demographic data of nursing students of selected nursing colleges of the city in terms of frequency and percentage.

SECTION II: Deals with analysis of data related to assessment sleep deprivation and academic performance among nursing students of selected nursing colleges of the city in terms of frequency and percentage.

SECTION III: Deals with analysis of data related to the correlation of sleep deprivation and academic performance among nursing students of selected nursing colleges of the city.

SECTION IV: Deals with analysis of data related to the association between sleep deprivations among nursing students with selected demographic variables.

SECTION – I

This section deals with analysis of demographic data of nursing students of selected nursing colleges of the city in terms of frequency and percentage.

Table 6: Description of samples (nursing students of selected nursing colleges) according to their personal characteristics in relation to frequency and percentage (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age (in years)	18 years	16	10.67
		19 years	42	28.00
		20 years	20	13.33
		more than 20	72	48.00
2	Gender	Male	10	6.67
		Female	140	93.33
		Transgender	0	0.00
3	Religion	Hindu	130	86.67
		Christian	12	8.00
		Muslim	6	4.00
		Other	2	1.33
4	Residence	Living in hostel	44	29.33
		Living with parents	106	70.67

5	Education	ANM	2	1.33
		GNM	61	40.67
		BSc Nursing	0	0.00
		PBBSc Nursing	87	58.00
6	Year of education	First year	77	51.33
		Second year	53	35.33
		Third year	20	13.33
		Fourth year	0	0.00
7	Do you use mobile?	Yes	150	100.00
		No	0	0.00
8	If yes, which type of mobile do you use?	Android	150	100.00
		Non Android	0	0.00
9	Do you have an Internet connection on your mobile phone?	Yes	150	100.00
		No	0	0.00
10	Do you have night duties as per your curriculum	Yes	150	100.00
		No	0	0.00
11	How many night duties do you perform in a month?	Less than 5 days	0	0.00
		5-10 days	52	34.67
		10-15 days	98	65.33
		above 15 days	0	0.00

Table 7: Frequency & percentage distribution of nursing students of selected nursing colleges according to Age (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age (in years)	18 years	16	10.67
		19 years	42	28.00
		20 years	20	13.33
		more than 20	72	48.00

The above table no. 7 and figure 8 shows that, in the study, according to age of nursing students from selected nursing colleges, 10.67% of them were from age group 18 years, 28% from age group 19 years, 13.33% from age group 20 years and all 48% of students were of age more than 20 years.

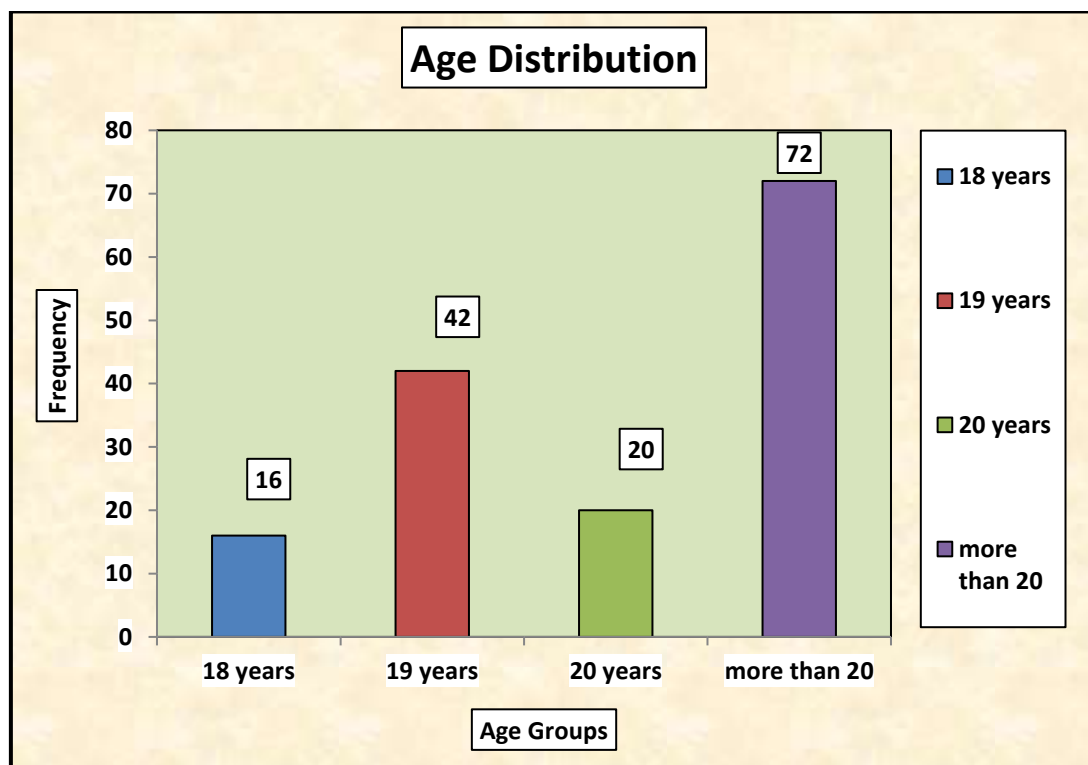


Figure No-8: Distribution of nursing students of selected nursing colleges according to Age

Table 8: Frequency & percentage distribution of nursing students of selected nursing colleges according to gender (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
2	Gender	Male	10	6.67
		Female	140	93.33
		Transgender	0	0.00

The above table no. 8 and figure no. 9 shows that, in the study, according to gender of nursing students from selected nursing colleges, 6.67% of them were males and 93.33% were females.

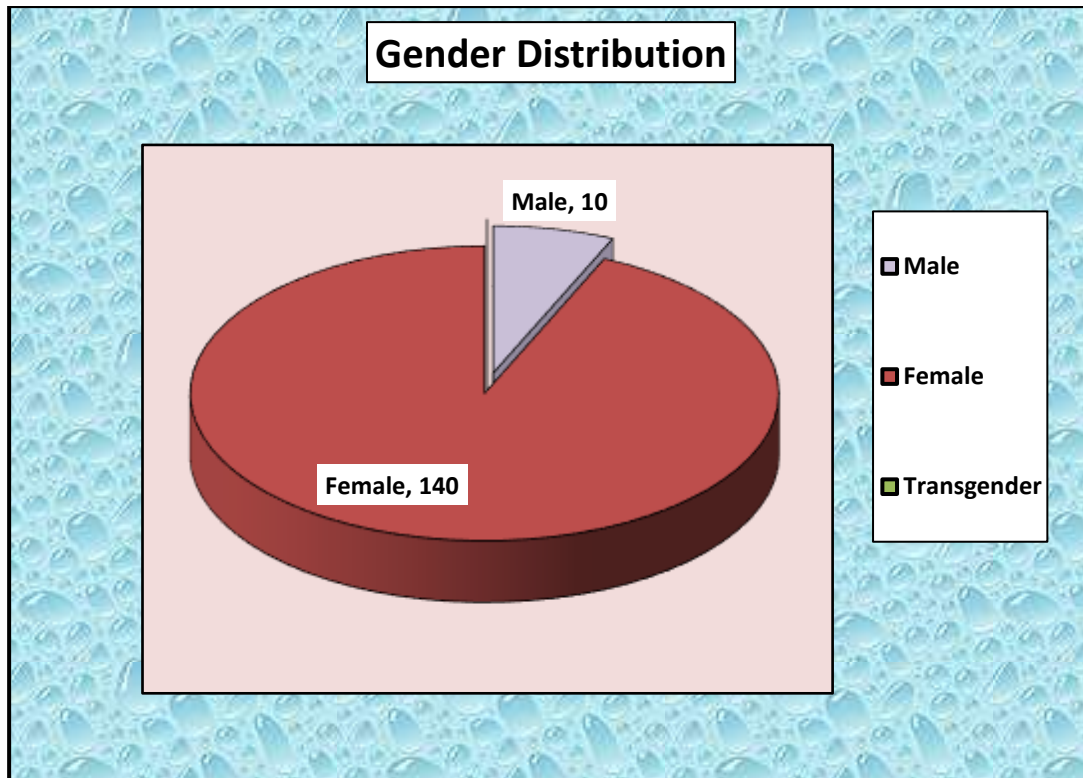


Figure No-9: Distribution of nursing students of selected nursing colleges according to gender

Table 9: Frequency & percentage distribution of nursing students of selected nursing colleges according to religion (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
3	Religion	Hindu	130	86.67
		Christian	12	8.00
		Muslim	6	4.00
		Other	2	1.33

The above table no. 9 and figure no. 10 shows that, in the study, according to religion of nursing students from selected nursing colleges, 86.68% of them were Hindu, 8% of students were Muslim, 4% from Muslim religion and 1.33% of student from other religion.

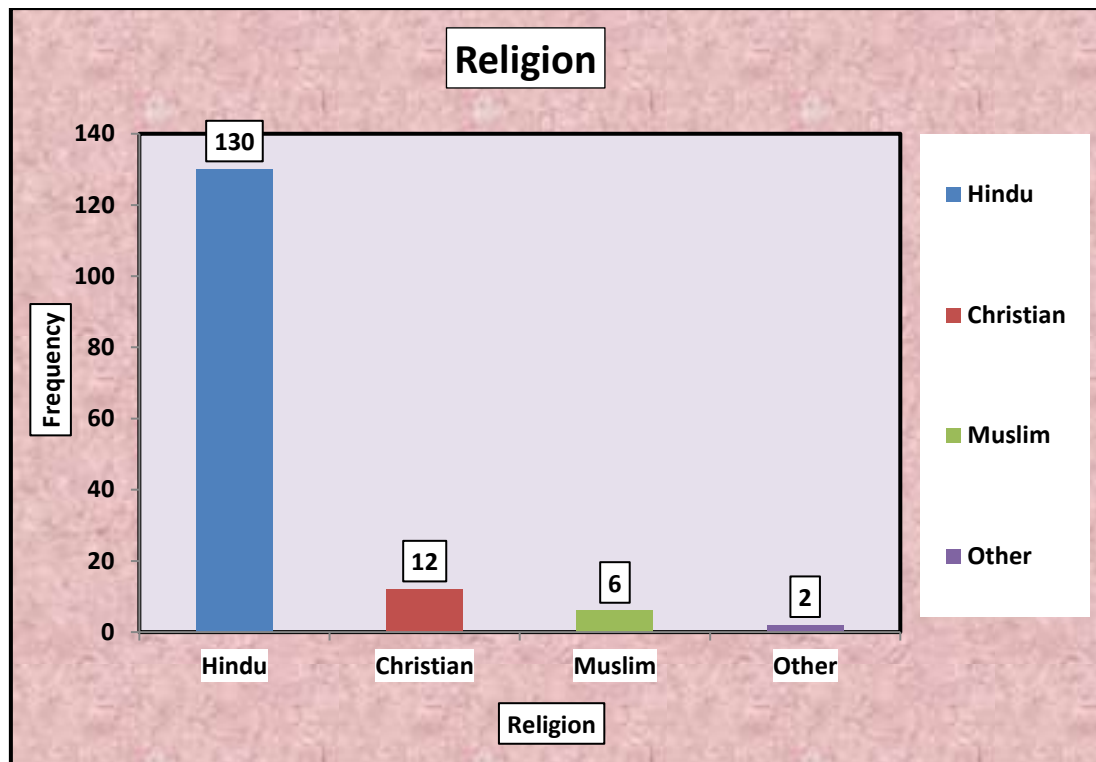


Figure No-10: Distribution of nursing students of selected nursing colleges according to religion

Table 10: Frequency & percentage distribution of nursing students of selected nursing colleges according to residence (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
4	Residence	Living in hostel	44	29.33
		Living with parents	106	70.67

The above table no. 10 and figure no. 11 shows that, in the study, according to residence of nursing students from selected nursing colleges, 29.33% of them living in hostel and 70.67% of student living with parents.

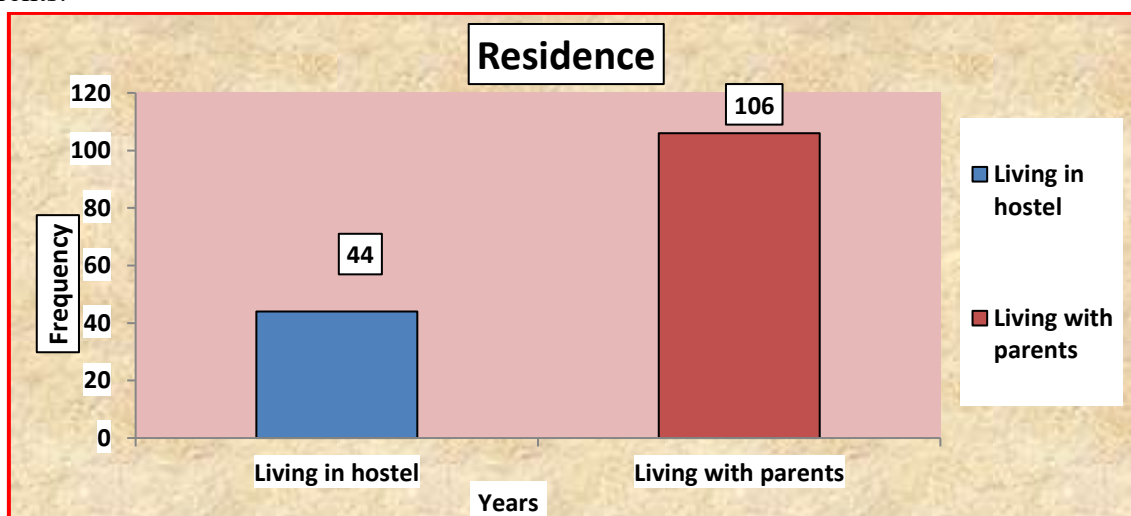


Figure No-11: Distribution of nursing students of selected nursing colleges according to residence

Table 11: Frequency & percentage distribution of nursing students of selected nursing colleges according to education (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
5	Education	ANM	2	1.33
		GNM	61	40.67
		BSc Nursing	0	0.00
		PBBSc Nursing	87	58.00

The above table no. 11 and figure no. 12 shows that, in the study, according to education stream of nursing students from selected nursing colleges, 1.33% of them were from ANM course, 40.67% from GNM course, no one from BSc Nursing and 58% of them from PBBSc Nursing.

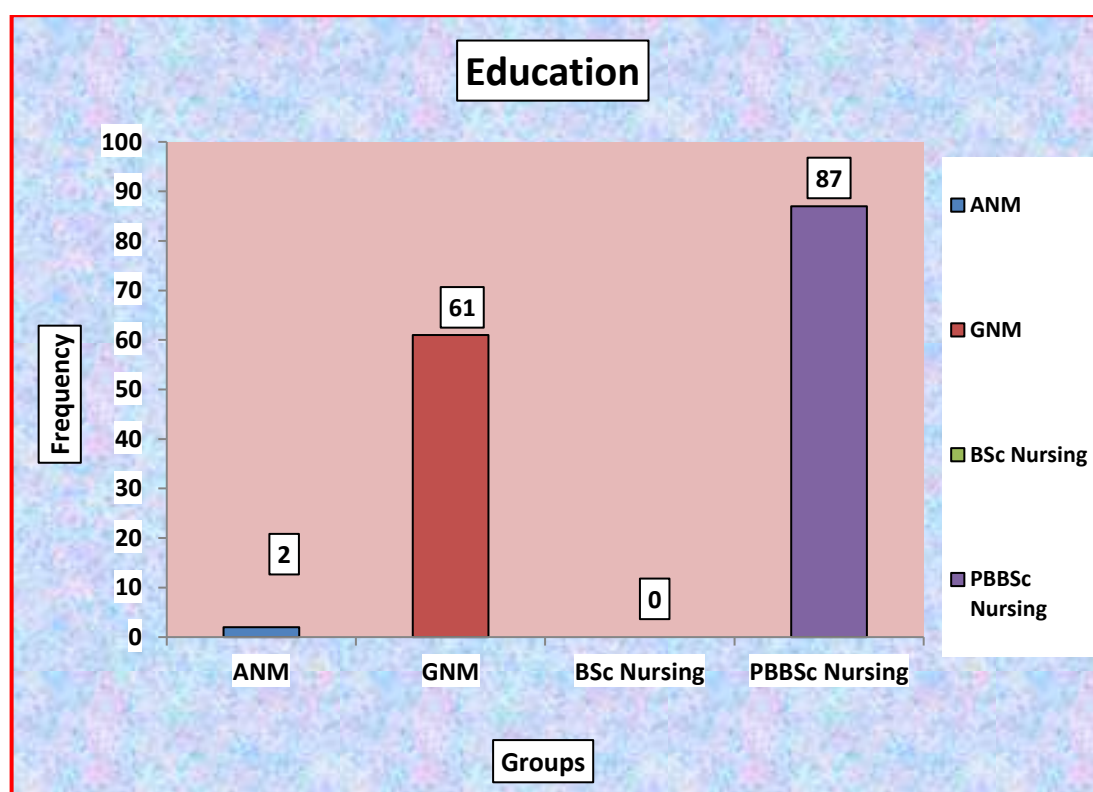


Figure No-12: Distribution of nursing students of selected nursing colleges according to education

Table 12: Frequency & percentage distribution of nursing students of selected nursing colleges according to year of education (N = 150)

Sr. No.	Variable	Groups	Frequency	Percentage
6	Year of education	First year	77	51.33
		Second year	53	35.33
		Third year	20	13.33
		Fourth year	0	0.00

The above table no. 12 and figure no. 13 shows that, in the study, according to year of education of nursing students from selected nursing colleges, 51.33% of them were from first year, 35.33% from second year, 13.33% from third year and no one of them from fourth year.

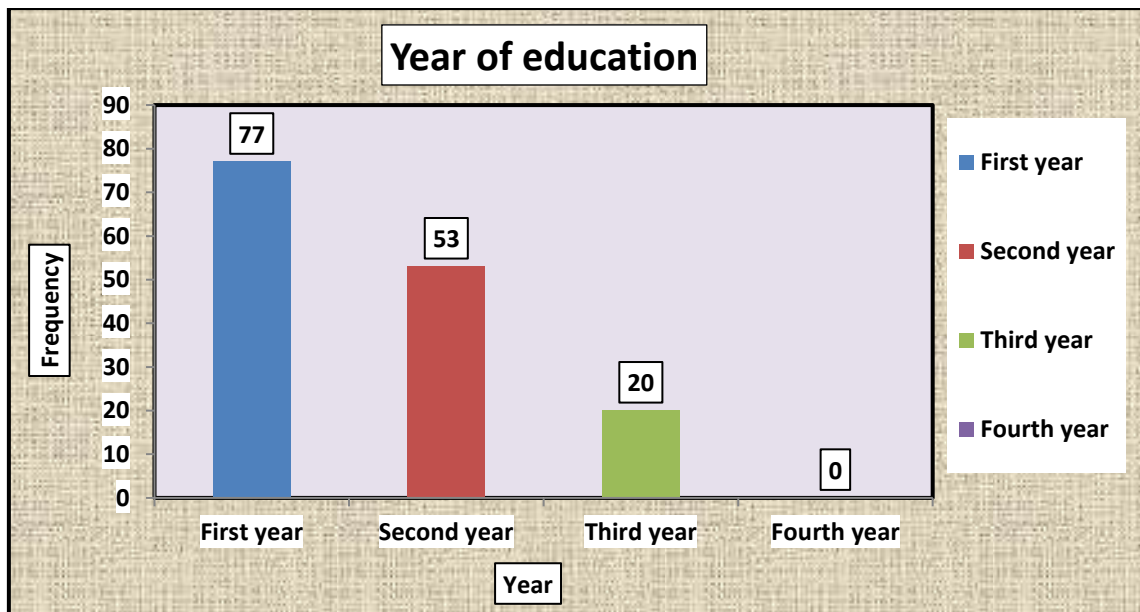


Figure No-13: Distribution of nursing students of selected nursing colleges according to year of education

Table 13: Frequency & percentage distribution of nursing students of selected nursing colleges according to use of mobile (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
7	Do you use mobile?	Yes	150	100.00
		No	0	0.00

The above table no.13 and figure no. 14 shows that, in the study, to the question do you use mobile, all 100% of nursing students from selected nursing colleges answered as yes and no one of them answered as no.

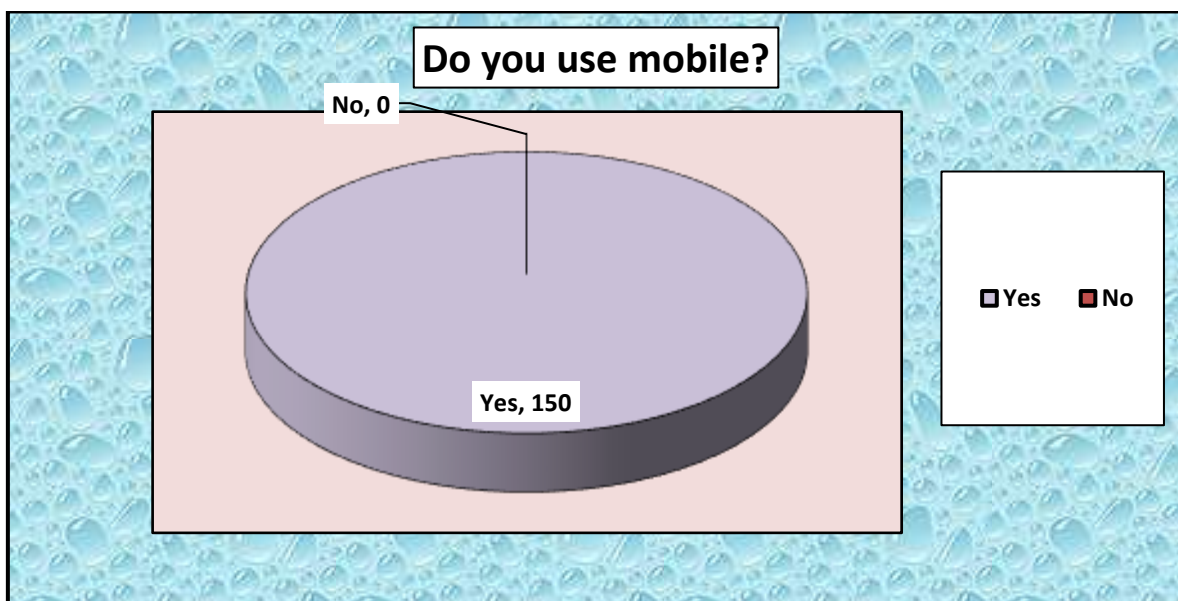


Figure No-14: Distribution of nursing students of selected nursing colleges according to use of mobile

Table 14: Frequency & percentage distribution of nursing students of selected nursing colleges according to type of mobile they use

(N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
8	If yes, which type of mobile do you use?	Android	150	100.00
		Non Android	0	0.00

The above table no. 14 and figure no. 15 shows that, in the study, to the question which type of mobile do you use, all 100% of nursing students from selected nursing colleges answered as android and no one of them answered as non-android.

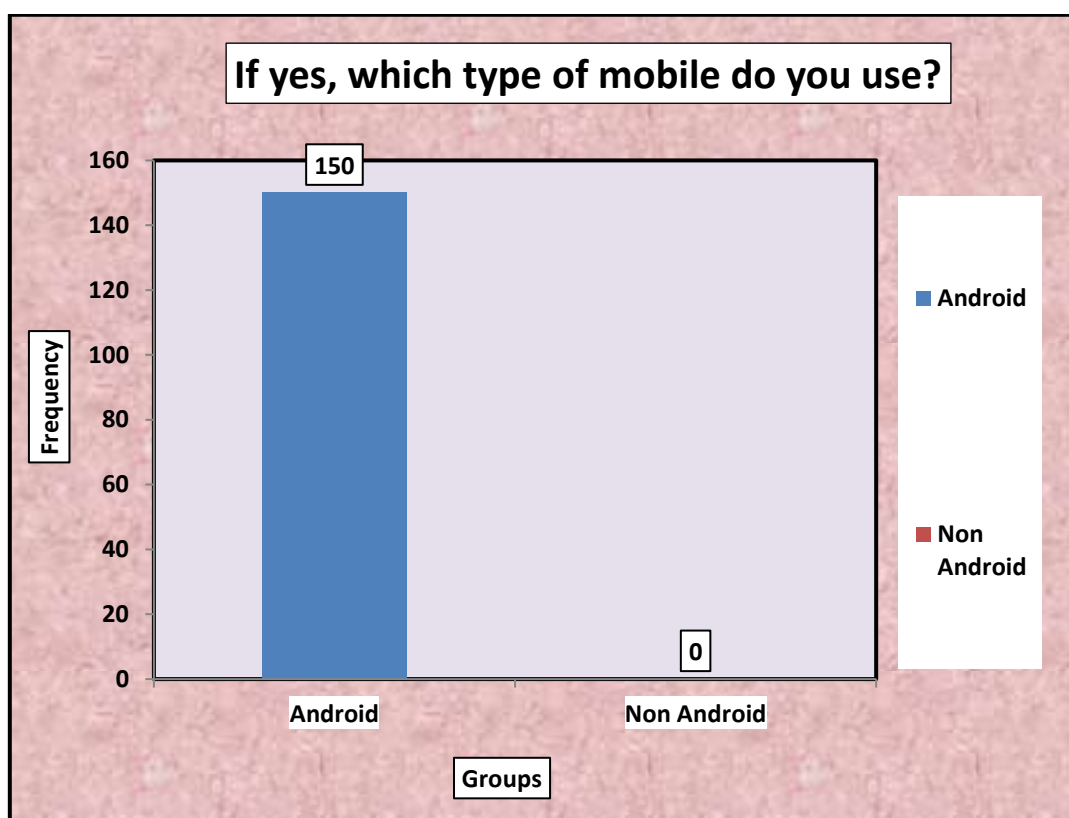


Figure No-15: Distribution of nursing students of selected nursing colleges according to type of mobile they use

Table 15: Frequency & percentage distribution of nursing students of selected nursing colleges according to have an Internet connection

(N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
9	Do you have an Internet connection on your mobile phone?	Yes	150	100.00
		No	0	0.00

The above table no. 15 and figure no.16 shows that, in the study, to the question do you have an Internet connection on your mobile phone, all 100% of nursing students from selected nursing colleges answered as yes and no one of them answered as no.

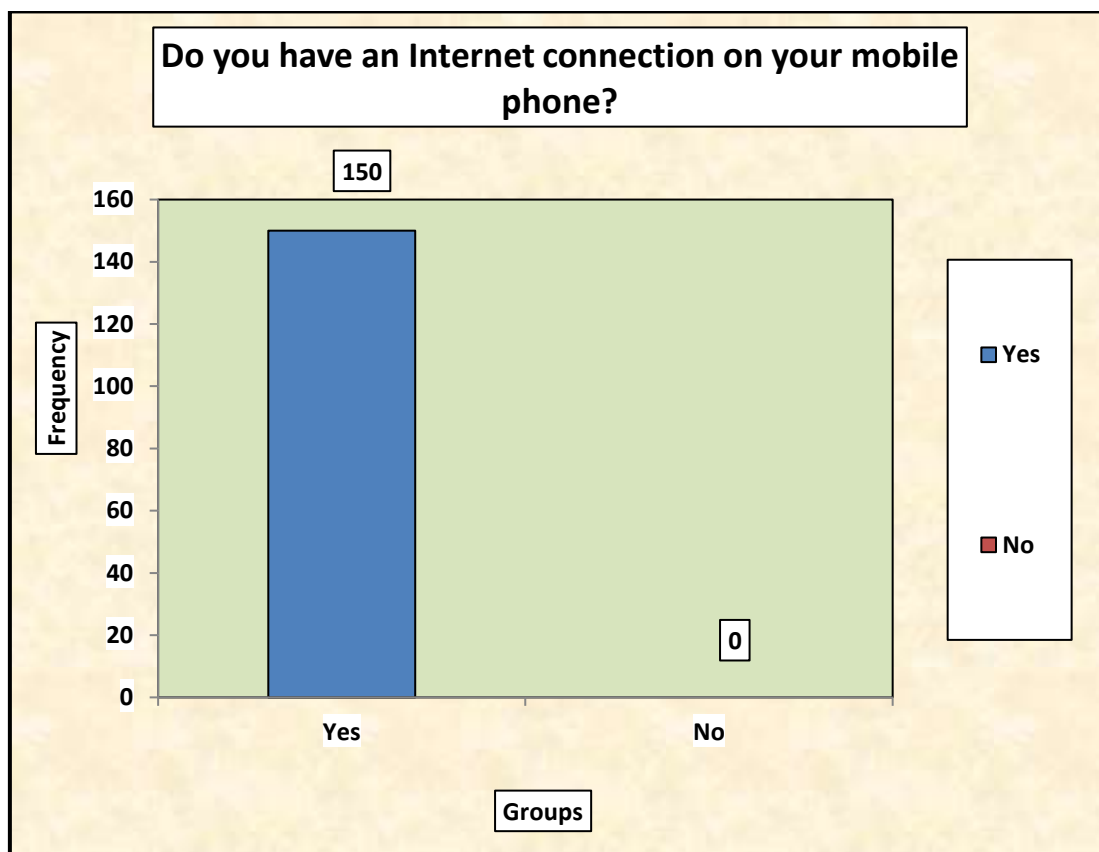


Figure No-16: Distribution of nursing students of selected nursing colleges according to have an Internet connection

Table 16: Frequency & percentage distribution of nursing students of selected nursing colleges according to have night duties as per your curriculum (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
10	Do you have night duties as per your curriculum	Yes	150	100.00
		No	0	0.00

The above table no. 16 and figure no. 17 shows that, in the study, to the question do you have night duties as per your curriculum, all 100% of nursing students from selected nursing colleges answered as yes and no one of them answered as no.

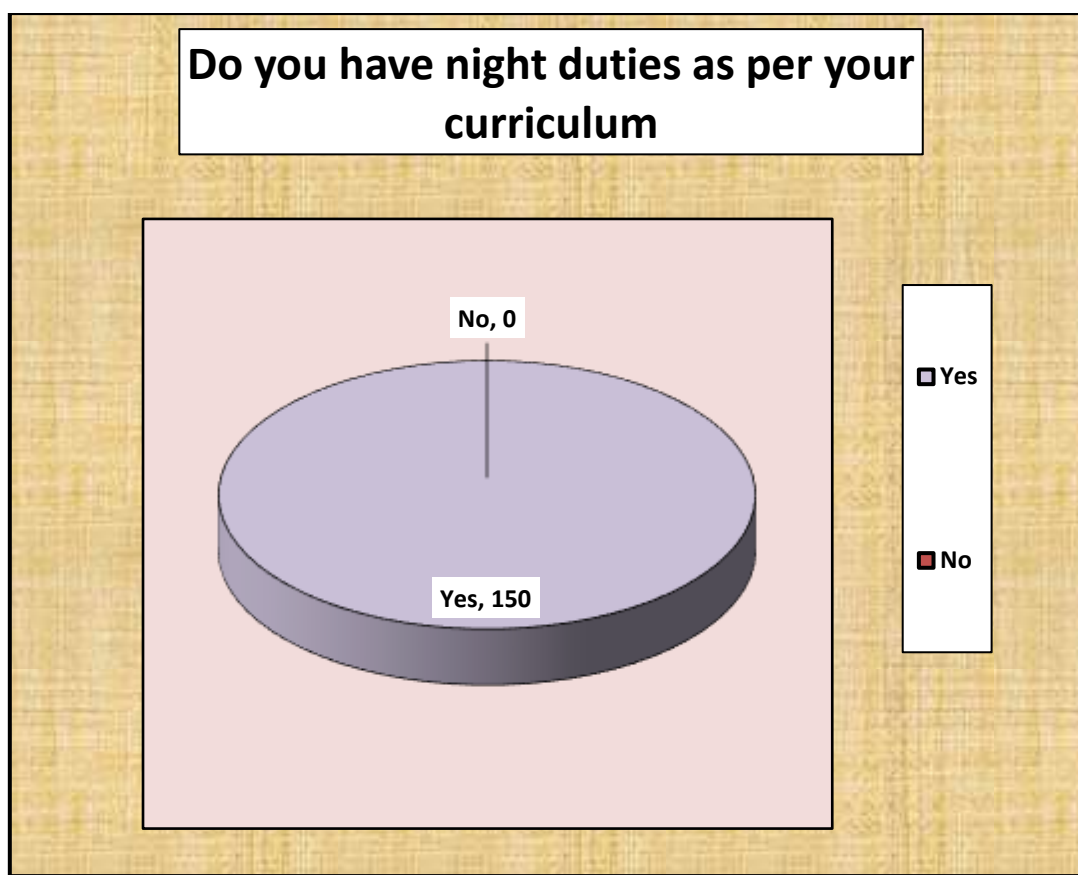


Figure No-17: Distribution of nursing students of selected nursing colleges according to have night duties as per your curriculum

Table 17: Frequency & percentage distribution of nursing students of selected nursing colleges according to number of night duties performed (N=150)

Sr. No.	Variable	Groups	Frequency	Percentage
11	How many night duties do you perform in a month?	Less than 5 days	0	0.00
		5-10 days	52	34.67
		10-15 days	98	65.33
		above 15 days	0	0.00

The above table no. 17 and figure no. 18 shows that, in the study, to the question how many night duties you perform in a month, no one of nursing students from selected nursing colleges answered as less than 5 days, 34.67% answered as 5-10 days, 65.33% of answered as 10-15 days and no one of them answered as above 15 days.

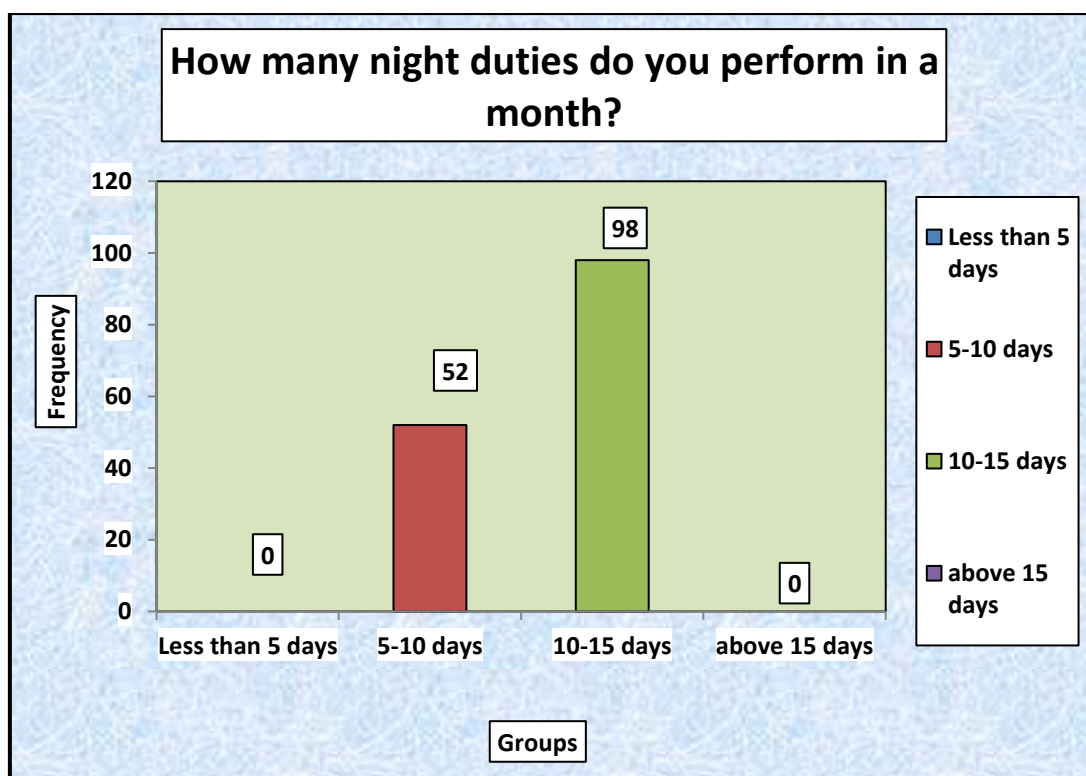


Figure No-18: Distribution of nursing students of selected nursing colleges according to number of night duties performed

Section – II

This section Deals with analysis of data related to assessment sleep deprivation (PSQI) among nursing students of selected nursing colleges of the city in terms of frequency and percentage.

Table 18: General assessments of sleep deprivation (PSQI) among nursing students.

(N=150)

Variable	Groups	Score	Frequency	Percentage
Sleep Quality (PSQI)	Good	0-7	99	66.00
	Average	8-14.	51	34.00
	Poor	15-21.	0	0.00
Sleep Quality	Minimum		2	
	Maximum		12	
	Average (SD)		6.93 (2.18)	

Assessment of the sleep deprivation (PSQI) among nursing students of selected nursing colleges of the city shows that, 66% of them had good sleep quality, 34% had average and no one of them had poor sleep quality.

Average sleep quality score of nursing students of selected nursing colleges was 6.93 with standard deviation of 2.18. The minimum score of sleep quality was 2 with maximum score of 12.

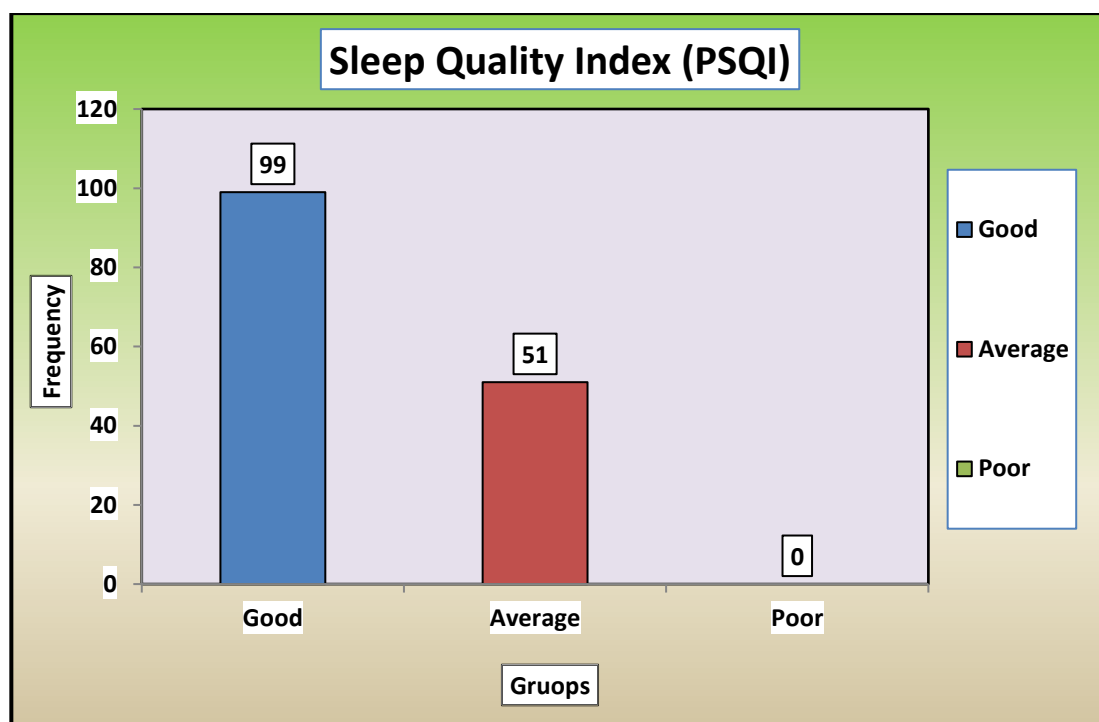


Figure No- 19: General assessments of sleep deprivation (PSQI)

Deals with analysis of data related to assessment sleep deprivation (Sleepiness) among nursing students of selected nursing colleges of the city in terms of frequency and percentage.

Table 19: General assessments of sleep deprivation (sleepiness) among nursing students (N=150)

Variable	Groups	Score	Frequency	Percentage
Sleepiness	abnormally sleepy	0-7	23	15.33
	average	8-9.	28	18.67
	may excessively sleepy	10-15.	83	55.33
	excessively sleepy	16-24	16	10.67
Sleepiness	Minimum		2	
	Maximum		19	
	Average (SD)		11.00 (3.58)	

Assessment of sleep deprivation (sleepiness) among nursing students of selected nursing colleges of the city shows that, 15.33% of them were abnormally sleepy, 18.67% were average sleepy, 55.33% may excessively sleepy, 10.67% were excessively sleepy.

Average sleep deprivation score of nursing students of selected nursing colleges was 11 with standard deviation of 3.58. The minimum score of sleep deprivation was 2 with maximum score of 19.

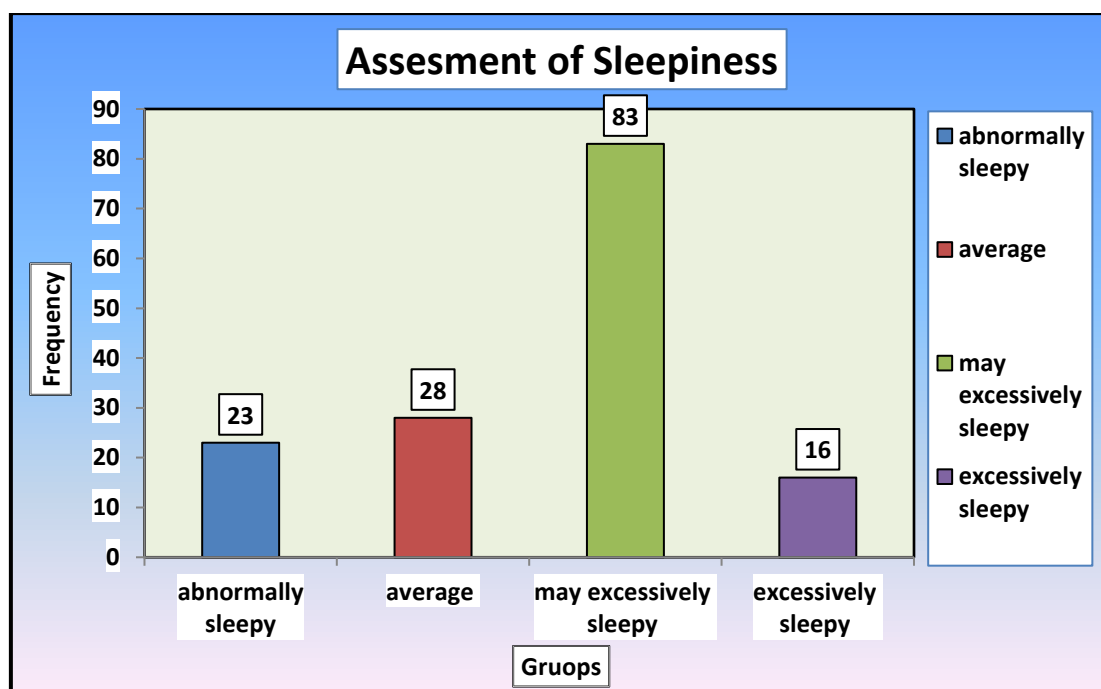


Figure No- 20: General assessments of sleep deprivation (sleepiness)

Deals with analysis of data related to assessment academic performance among nursing students of selected nursing colleges of the city in terms of frequency and percentage.

Table 20: General assessments of academic performance among nursing students (N=150)

Variable	Groups	Score	Frequency	Percentage
ACADEMIC PERFORMANCE	Excellent Performance	33-40	94	62.67
	Good Performance	25-32	47	31.33
	Moderate Performance	17-24	6	4.00
	Poor Performance	9-16.	2	1.33
	Falling Performance	0-8	1	0.67
ACADEMIC PERFORMANCE	Minimum		5	
	Maximum		39	
	Average (SD)		32.79 (4.96)	

Assessment of the academic performance among nursing students of selected nursing colleges of the city shows that, 62.67% of them had excellent performance, 31.33% had good performance and 4% students had moderate performance, 1.33% poor and 0.67% had falling performance.

Average academic performance score of nursing students of selected nursing colleges was 32.79 with standard deviation of 4.96. The minimum score of academic performance was 5 with maximum score of 39.

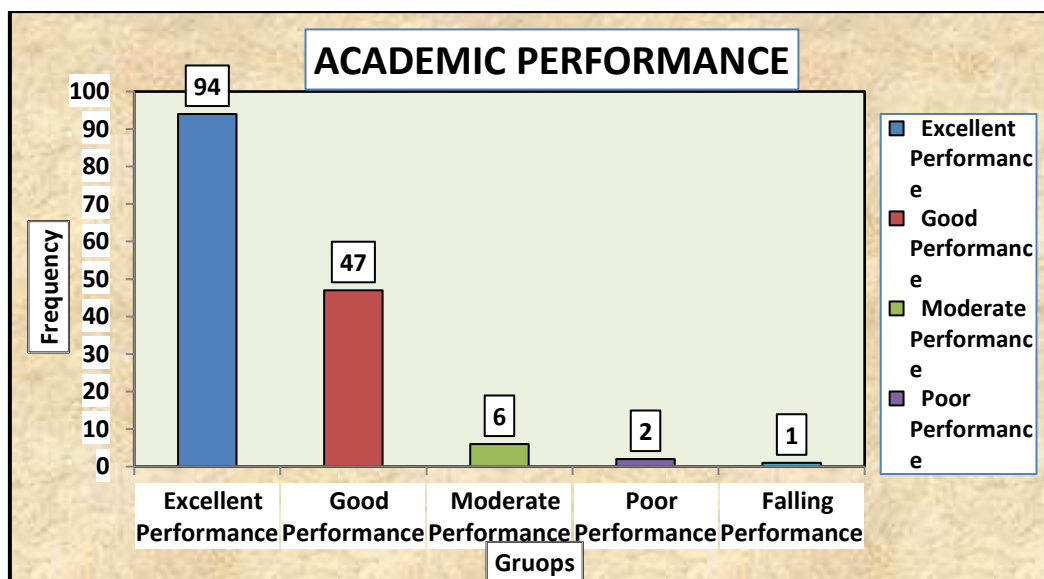


Figure No-21: General assessments of academic performance among nursing students

Section - III

This section deals with the analysis of data related to the correlation of sleep deprivation and academic performance among nursing students of selected nursing colleges of the city.

Table 21: Correlation of sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges. (N=150)

Correlation	p value
-0.032	0.70

The Karl Pearson's correlation coefficient was used to find the correlation between sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges of the city.

The correlation coefficient between sleep deprivation (PSQI) and academic performance was -0.032 with the p value 0.70. The p value more than 0.05, shows the no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students.

The scatter diagram, also confirms no correlation between sleep deprivation (PSQI) and academic performance.

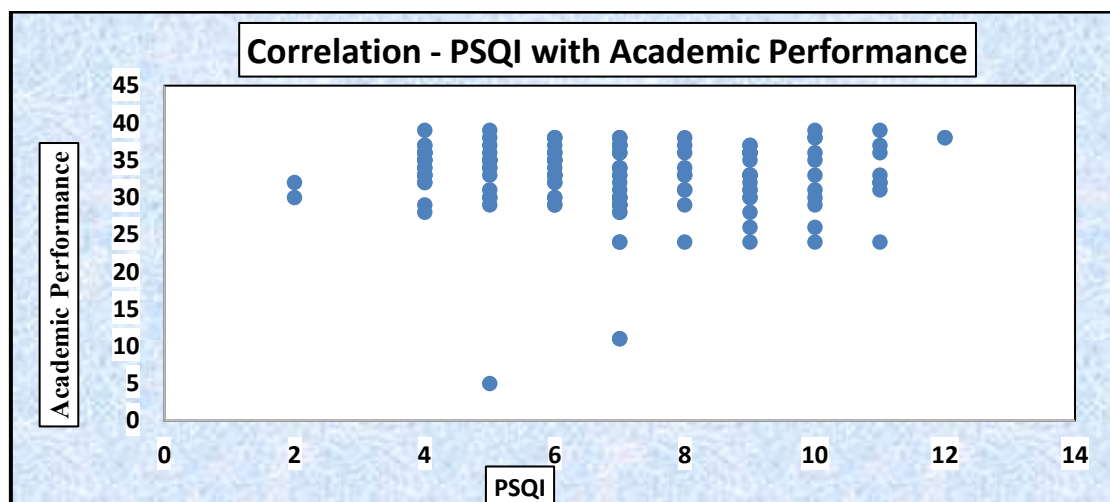


Figure 22: Scatter Diagram - Correlation of sleep deprivation (PSQI) and academic performance

Deals with analysis of data related to the correlation of sleep deprivation and academic performance among nursing students of selected nursing colleges of the city.

Table 22: Correlation of sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges

(N=150)

Correlation	p value
0.010	0.91

The Karl Pearson's correlation coefficient was used to find the correlation between sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges of the city.

The correlation coefficient between sleep deprivation (Sleepiness) and academic performance was 0.010 with p value 0.91. The p value more than 0.05, shows the no significant correlation between sleep deprivation (Sleepiness) and academic performance among nursing students.

The scatter diagram, also confirms no correlation between sleep deprivation (Sleepiness) and academic performance.

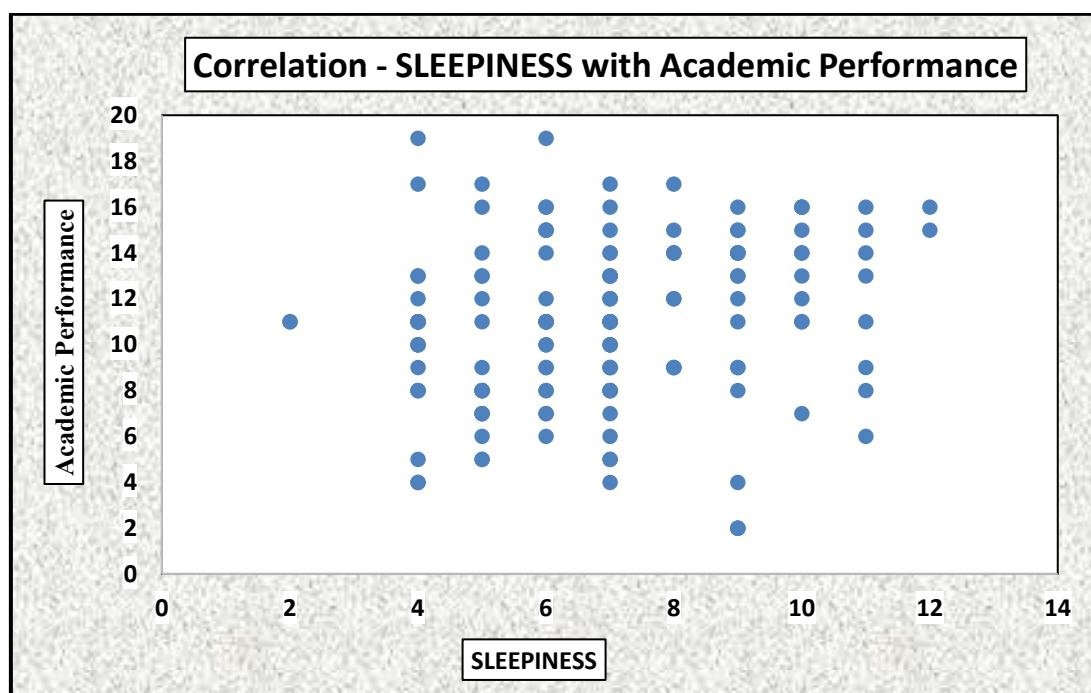


Figure 23: Scatter Diagram - Correlation of sleep deprivation (Sleepiness) and academic performance

Section - IV

Deals with analysis of data related to the association between sleep deprivations (PSQI) among nursing students with selected demographic variables.

ASSOCIATION OF SLEEP DEPRIVATIONS (PSQI) IN RELATION TO DEMOGRAPHIC VARIABLES

Table 23: Association of sleep deprivations (PSQI) with demographic variables (N=150)

Variable	Groups	PSQI		Chi Square	d.f.	P value	Significance
		below Md	Above Md				
Age (in years)	18 years	14	2	12.10	3	0.007	Significant
	19 years	21	21				
	20 years	6	14				
	more than 20	36	36				
Gender	Male	4	6	0.55	1	0.46	Not Significant
	Female	73	67				
	Transgender	0	0				
Religion	Hindu	67	63	2.35	3	0.50	Not Significant
	Christian	7	5				
	Muslim	3	3				
	Other	0	2				
Residence	Living in hostel	29	15	5.29	1	0.021	Significant
	Living with parents	48	58				
Education	ANM	1	1	1.51	2	0.47	Not Significant
	GNM	35	26				
	BSc Nursing	0	0				
	PBBSc Nursing	41	46				
Year of education	First year	44	33	6.45	2	0.040	Significant
	Second year	20	33				
	Third year	13	7				
	Fourth year	0	0				
How many night duties do you perform in a month?	Less than 5 days	0	0	1.28	1	0.26	Not Significant
	5-10 days	30	22				
	10-15 days	47	51				
	above 15 days	0	0				

Table no. 23 shows that The chi square test was used to see association between sleep deprivations (PSQI) among nursing students with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables age, residence and year of education, the p value of association test with sleep deprivations (PSQI) was less than 0.05. That means, the sleep deprivations (PSQI) among nursing students was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the sleep deprivations (PSQI).

No Significant Association:

For the demographic variables gender, religion, education etc. the p value of association test with sleep deprivations (PSQI) was more than 0.05. That means, the sleep deprivations (PSQI) among nursing students was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the sleep deprivations (PSQI).

Deals with analysis of data related to the association between sleep deprivations (Sleepiness) among nursing students with selected demographic variables.

ASSOCIATION OF SLEEP DEPRIVATIONS (SLEEPINESS) IN RELATION TO DEMOGRAPHIC VARIABLES

Table 24: Association of sleep deprivations (PSQI) with demographic variables (N=150)

Variable	Groups	Sleepiness		Chi Square	d.f.	p value	Significance
		below Md	Above Md				
Age (in years)	18 years	8	8	2.63	3	0.45	Not Significant
	19 years	26	16				
	20 years	14	6				
	more than 20	38	34				
Gender	Male	4	6	1.31	1	0.25	Not Significant
	Female	82	58				
	Transgender	0	0				
Religion	Hindu	76	54	10.04	3	0.02	Significant
	Christian	8	4				
	Muslim	0	6				
	Other	2	0				
Residence	Living in hostel	34	10	10.12	1	0.001	Significant
	Living with parents	52	54				

Education	ANM	2	0	6.15	2	0.046	Significant
	GNM	41	20				
	BSc Nursing	0	0				
	PBBSc Nursing	43	44				
Year of education	First year	45	32	21.71	2	0.000	Significant
	Second year	21	32				
	Third year	20	0				
	Fourth year	0	0				
How many night duties do you perform in a month?	Less than 5 days	0	0	0.08	1	0.78	Not Significant
	5-10 days	29	23				
	10-15 days	54	41				
	above 15 days	0	0				

Table no. 24 shows that, the chi square test was used to see association between sleep deprivations among nursing students with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables religion, residence, education and year of education, the p value of association test with sleep deprivations (Sleepiness) was less than 0.05. That means, the sleep deprivations (Sleepiness) among nursing students was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the sleep deprivations (Sleepiness).

No Significant Association:

For the demographic variables age, gender, night duties performed per month, the p value of association test with sleep deprivations (Sleepiness) was more than 0.05. That means, the sleep deprivations (Sleepiness) among nursing students was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the sleep deprivations (Sleepiness).

SUMMARY:

This chapter focused on the analysis and interpretation of data.

This chapter was structured into four sections, which pertain to the Description of samples (nursing students of selected nursing colleges) according to their personal characteristics, analysis of data related to assessment sleep deprivation and academic performance among nursing students of selected nursing colleges of the city in terms of frequency and percentage, Analysis of data related to the correlation of sleep deprivation and academic performance among nursing students of selected nursing colleges of the

city, and Analysis of data related to the association between sleep deprivations among nursing students with selected demographic variables..

Descriptive and inferential statistics were employed for the analysis. The Correlation of sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges and Correlation of sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges were analysed by the Karl Pearson's correlation coefficient. While its association with chosen demographic variables was analyzed through chi square test.

Findings suggest that The p value more than 0.05, shows there was no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students and no significant correlation between sleep deprivation (Sleepiness) and academic performance among nursing students. The sleep deprivations (PSQI) among nursing students was associated with for the demographic variables age, residence and year of education. And the sleep deprivations (Sleepiness) among nursing students was associated for the demographic variables religion, residence, education and year of education.

CHAPTER - V

SUMMARY, FINDINGS, CONCLUSION & RECOMMENDATIONS

Nothing is more important than your own resolution to succeed.

-Abraham Lincoln

This chapter provides a concise overview of the research, encompassing the study's findings, conclusion, personal insights, and the impact of the research on nursing administration, nursing service, nursing education, and nursing research, along with suggestions for enhancing the study and recommendations for future research.

Statement of the Problem:-

“To assess the sleep deprivation and its impact on academic performance among nursing students of selected nursing colleges of the city.”

Objectives of the study: -

1. To assess the sleep deprivation among nursing students of selected nursing colleges.
2. To assess the effect of sleep deprivation on academic performance among nursing students of selected nursing colleges.
3. To find out an association between sleep deprivation among nursing students with selected demographic variables.

Methodology: The research method employed in this study was quantitative, and the research design utilized was a Non-Experimental Descriptive correlational research design. The research study was carried out in the critical care unit of chosen colleges in the metropolitan area.

The investigator decided to use the non-probability purposive sampling technique and One Hundred Fifty (150) nursing students were selected as subjects for this study.

The research aimed to investigate the subsequent hypothesis,

H₀: ((Null Hypothesis) There will be no significant relationship between sleep deprivation and academic performance among nursing students. (P at 0.05 level of significance)

H₁: There is significant relationship between sleep deprivation and academic performance among nursing students. (P at 0.05 level of significance)

H₂: There is significant association between sleep deprivation and selected socio-demographic variables

at 0.05 level of significance. (P at 0.05 level of significance)

The independent variable was the Sleep deprivation and dependent variable was Academic performance of nursing students.

The study was based on ‘**Health Belief Model**’ approach by Rosenstock (1974). The study population included Nursing Students in city and who met the necessary inclusion criteria. The participants were chosen according to established inclusion and exclusion criteria. The instruments employed included Pittsburgh Sleep Quality Index (PSQI), The Epworth Sleepiness Scale (ESS) and Academic Performance Scale.

For generating necessary data, the tools prepared were Pittsburgh Sleep Quality Index (PSQI), The Epworth Sleepiness Scale (ESS) and Academic Performance Scale which were validated by experts from the various fields. Necessary modifications were made in the tool. The reliability of sleep deprivation (PSQI) tool was determined by Chronbach’s alpha. The tool was administered to 15 samples, reliability of sleep deprivation (PSQI) tool was found to be 0.77. The reliability of sleep deprivation (Sleepiness) tool was determined by Chronbach’s alpha. Reliability of sleep deprivation (PSQI) tool was found to be 0.78. The reliability of academic performance tool was determined by Chronbach’s alpha. Reliability of academic performance tool was found to be 0.92. The tool has been shown to be effective and statistically reliable as the reliability value is greater than 0.5. It showed high degree of correlation.

To pre-test and fine-tune the tools and technique, a pilot study was performed from 07/10/2024 to 09/10/2024 in the nursing colleges, involving a group of six (15) subjects. The analysis of the data was conducted using the ‘t’ test.

The results were found to be significant ($t = > 2.00$ at 0.05). Data collection for the study took place from 16th November 2024 until 22th November 2024 in the nursing colleges.

On the first data were collected from the subjects. The investigator implemented a research tool. In line with the objectives and hypothesis, the data was evaluated through both descriptive and inferential statistics. The respondents' demographic characteristics were analyzed and displayed in terms of frequency, percentage, and graphs. The descriptive statistics employed included frequency, mean, and standard deviation. The Karl Pearson’s correlation coefficient and chi square test were utilized to assess the hypothesis. The significance level established for hypothesis testing was 0.05 levels. The relationship between variables was determined for Age, Gender, Religion, Residence, Education, Year of education, use of mobile, type of mobile and internet connection on mobile, night duties etc.

MAJOR FINDINGS OF THE STUDY:

The analysis of demographic data of study samples gave an idea about general characteristics of nursing students of selected nursing colleges of the city.

The following are major findings of study.

Section – I. Demographic data of the subjects

1. According to age of nursing students from selected nursing colleges, 10.67% of them were from age group 18 years, 28% from age group 19 years, 13.33% from age group 20 years and all 48% of students were of age more than 20 years.
2. In the study, according to gender of nursing students from selected nursing colleges, 6.67% of them were males and 93.33% were females.

3. According to religion of nursing students from selected nursing colleges, 86.68% of them were Hindu, 8% of students were Muslim, 4% from Muslim religion and 1.33% of student from other religion.
4. In the study, according to residence of nursing students from selected nursing colleges, 29.33% of them living in hostel and 70.67% of student living with parents.
5. According to education stream of nursing students from selected nursing colleges, 1.33% of them were from ANM course, 40.67% from GNM course, no one from BSc Nursing and 58% of them from PBBS Nursing.
6. According to year of education of nursing students from selected nursing colleges, 51.33% of them were from first year, 35.33% from second year, 13.33% from third year and no one of them from fourth year.
7. In the study, to the question do you use mobile, all 100% of nursing students from selected nursing colleges answered as yes and no one of them answered as no.
8. To the question which type of mobile do you use, all 100% of nursing students from selected nursing colleges answered as android and no one of them answered as non-android.
9. To the question do you have an Internet connection on your mobile phone, all 100% of nursing students from selected nursing colleges answered as yes and no one of them answered as no.
10. To the question do you have night duties as per your curriculum, all 100% of nursing students from selected nursing colleges answered as yes and no one of them answered as no.
11. In the study, to the question how many night duties you perform in a month, no one of nursing students from selected nursing colleges answered as less than 5 days, 34.67% answered as 5-10 days, 65.33% of answered as 10-15 days and no one of them answered as above 15 days.

Section- II. General assessments of sleep deprivation (PSQI) among nursing students

For the assessment purpose total score of sleep deprivation (PSQI) among nursing students of selected nursing colleges of the city, was divided in to three groups like good (0-7 score), average (8-14 score) and poor (15-21 score).

Assessment of the sleep deprivation (PSQI) among nursing students of selected nursing colleges of the city shows that, 66% of them had good sleep quality, 34% had average and no one of them had poor sleep quality.

Average sleep quality score of nursing students of selected nursing colleges was 6.93 with standard deviation of 2.18. The minimum score of sleep quality was 2 with maximum score of 12.

General assessments of sleep deprivation (sleepiness) among nursing students

For the assessment purpose total score of sleep deprivation (sleepiness) among nursing students of selected nursing colleges of the city, was divided in to four groups like abnormally sleepy (0-7 score), average (8-9 score) may excessively sleepy (10-15 score) and excessively sleepy (16-24 score).

Assessment of sleep deprivation (sleepiness) among nursing students of selected nursing colleges of the city shows that, 15.33% of them were abnormally sleepy, 18.67% were average sleepy, 55.33% may excessively sleepy, 10.67% were excessively sleepy.

Average sleep deprivation score of nursing students of selected nursing colleges was 11 with standard deviation of 3.58. The minimum score of sleep deprivation was 2 with maximum score of 19.

General assessments academic performance among nursing students

For the assessment purpose total score of academic performance among nursing students of selected nursing colleges of the city, was divided in to five groups like falling performance (0-8 score), poor

performance (9-16 score), moderate performance (17-24 score), good performance (25-32 score) and excellent performance (33-40 score).

Assessment of the academic performance among nursing students of selected nursing colleges of the city shows that, 62.67% of them had excellent performance, 31.33% had good performance and 4% students had moderate performance, 1.33% poor and 0.67% had falling performance.

Average academic performance score of nursing students of selected nursing colleges was 32.79 with standard deviation of 4.96. The minimum score of academic performance was 5 with maximum score of 39.

Section- III. Correlation of sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges

The Karl Pearson's correlation coefficient was used to find the correlation between sleep deprivation (PSQI) and academic performance among nursing students of selected nursing colleges of the city.

The correlation coefficient between sleep deprivation (PSQI) and academic performance was -0.032 with the p value 0.70. The p value more than 0.05, shows the no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students.

The scatter diagram, also confirms no correlation between sleep deprivation (PSQI) and academic performance.

Correlation of sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges

The Karl Pearson's correlation coefficient was used to find the correlation between sleep deprivation (Sleepiness) and academic performance among nursing students of selected nursing colleges of the city.

The correlation coefficient between sleep deprivation (Sleepiness) and academic performance was 0.010 with p value 0.91. The p value more than 0.05, shows the no significant correlation between sleep deprivation (Sleepiness) and academic performance among nursing students.

The scatter diagram, also confirms no correlation between sleep deprivation (Sleepiness) and academic performance.

The associated p-values were small (less than 0.05), leading to the acceptance of the null hypothesis (H_0).

Therefore, it is firmly suggested that, there is no significant relationship between sleep deprivation and academic performance among nursing students., this proves H_0 .

Section – IV. Analysis of data related to association of sleep deprivations (PSQI) in relation to demographic variables

The chi square test was used to see association between sleep deprivations (PSQI) among nursing students with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables age, residence and year of education, the p value of association test with sleep deprivations (PSQI) was less than 0.05. That means, the sleep deprivations (PSQI) among nursing students was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the sleep deprivations (PSQI).

No Significant Association:

For the demographic variables gender, religion, education etc., the p value of association test with sleep

deprivations (PSQI) was more than 0.05. That means, the sleep deprivations (PSQI) among nursing students was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the sleep deprivations (PSQI).

Association of sleep deprivation (sleepiness) in relation to demographic variables

The chi square test was used to see association between sleep deprivations (Sleepiness) among nursing students with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables religion, residence, education and year of education, the p value of association test with sleep deprivations (Sleepiness) was less than 0.05. That means, the sleep deprivations (Sleepiness) among nursing students was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the sleep deprivations (Sleepiness).

No Significant Association:

For the demographic variables age, gender, night duties performed per month, the p value of association test with sleep deprivations (Sleepiness) was more than 0.05. That means, the sleep deprivations (Sleepiness) among nursing students was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the sleep deprivations (Sleepiness).

NURSING IMPLICATIONS:

The results of this study hold significance for nursing practice, nursing education, nursing administration, and nursing research.

NURSING PRACTICE:

- The results indicate the necessity for clinical nurses to stay updated with knowledge through continuing education and in-service training to enhance skills and learning and to be well-informed about the sleep deprivations (Sleepiness) among nursing students.
- Nurses should instruct nursing students on the sleep deprivations (Sleepiness) among nursing students by arranging teaching sessions as well as through individualized educational programs.
- Nurses must create an instructional or demonstration module to educate nursing students.
- The application of knowledge assists nursing students in enhancing academic performance and complementing verbal information, boosting knowledge, practices, and satisfaction.

NURSING EDUCATION:

- Nurse educators need to focus more on training nursing students about the effect of sleep deprivations on the academic performance among nursing students. This way, they can provide appropriate knowledge to other groups of diabetic patients.
- Greater emphasis should be placed on regular and periodic teaching or demonstration sessions concerning the academic performance among nursing students.
- To educate the community, nursing personnel must possess sufficient knowledge regarding the sleep deprivation on the outcomes for nursing students. Nursing staff in various healthcare settings should

receive in-service education to enhance their knowledge and skills in identifying the learning needs of nursing students and planning suitable interventions.

- Student nurses may be encouraged to organize teaching programs to improve the knowledge related to sleep deprivation.
- Education serves as the cornerstone for the advancement of outstanding nursing practice. As the demands of society and the profession continually evolve, new elements must be integrated into the nursing curriculum. Nursing education should concentrate on educating staff nurses about the sleep deprivation and its effect on academic performance for nursing students.
- Nursing instructors can utilize the findings of the study as an educational illustration for students. Nursing education ought to foster values and a sense of responsibility to educate nursing students.

NURSING ADMINISTRATION:

- The nursing administrator ought to take the initiative in establishing health policy development and creating protocols for educating nursing students during their academics, while also engaging nursing students in the promotion of their health.
- Nurse administrators must examine the institution's policies and practices concerning academic performance for nursing students.
- Nurse administrators are required to plan and arrange training programs for students focused on academic performances.
- The nurse administrator is responsible for coordinating educational programs in nursing colleges and community environments.
- The nurse administrator should plan the budget and effectively use resources for staff training and follow-up regarding improving the academic performances for nursing students in respective nursing colleges.

NURSING RESEARCH:

There is an increasing demand for providing nursing research across all domains of healthcare. The nurse researchers, particularly those new to the field, must intensify their pursuit of knowledge. Nursing research is a crucial component of the field as it elevates the profession and establishes new standards and bodies of knowledge in nursing. Here, an additional study has been incorporated into the nursing literature. The results of the study indicated that there is no correlation between sleep deprivation (PSQI) and academic performance. Based on these findings, professionals and student nurses are encouraged to carry out further investigations into various facets of the sleep deprivation concerning the outcomes on the academic performances. The nurse researchers can engage with nursing students and healthcare professionals to discuss future research issues related to sleep deprivation. The nurse researchers could effectively leverage the outcomes of different studies and advocate for the significance of utilizing knowledge regarding sleepiness. The nurse researchers may conduct investigations to evaluate the effectiveness of self-care manuals and health education modules for diverse age groups of nursing students.

This study will inspire beginners to undertake similar research on a larger scale and comparatively; it will also encourage young and passionate researchers.

PERSONAL EXPERIENCE:

Investigator had a highly informative experience during the research. Owing to the prompt recommendations and knowledgeable input of the research guide, investigator was able to proceed in the correct direction in the study. Even though investigator was initially quite anxious about how to carry out the research, the research guide provided investigator with guidance and ongoing support.

This study allowed investigator to interact with many nursing students, better understanding of their problems regarding sleep deprivation. The subjects were eager to know about the outcome.

The subjects, with whom the investigator interacted, expressed satisfaction as their queries and doubts were allayed. They all were really satisfied with the care given. Investigator is grateful to the nursing colleges authorities and entire subjects that co-operated well and participated in the study during the research.

The study being unique in its nature, initially investigator was anxious with the whole process. Investigator is extremely happy to say that the investigator could complete this study without any problems. The present study has provided investigator a rich learning experience. Investigator had firsthand experience of going through all the phases of the research work. During pilot study when investigator found that the many of the subjects were co-operative, it motivated and encouraged investigator to go on with the study. In general, the research was difficult, and ultimately, there was a feeling of accomplishment. The continuous encouragement from the mentor assisted the researcher in building confidence and understanding of the concepts. Investigator had achieved the objectives of the study within a limited period of time.

CONCLUSION:

During the research, it was noted that all the participants were quite aware and engaged. The findings showed that the correlation coefficient between sleep deprivation (PSQI) and academic performance was -0.032 with the p value 0.70. The p value more than 0.05, shows the no significant correlation between sleep deprivation (PSQI) and academic performance among nursing students.

The findings suggested that an equally positive reaction to the clinical pathway was found to be truly beneficial for them in enhancing results.

The participants indicated that they were looking forward to more training programs of this nature, along with demonstrations and structured teaching.

RECOMMENDATIONS:

In light of the aforementioned findings and the investigator's personal experience, the following recommendations are proposed:

- The research could be conducted again with a larger sample, thus allowing findings to be applied to a broader population.
- A comparable study might be repeated with a control group.
- A self-instructional module could be developed to improve the knowledge and practices of nursing students regarding the sleep deprivation.
- A comparative study may be performed to assess the sleep deprivation and its impact on academic performance among nursing students.
- A similar study may be carried out within other faculty students.
- A similar study could be executed to compare urban and rural communities.

REFERENCES:

1. Asish Anvika. Sleep deprivation a serious threat to nurse and patient care, *Nightingale nursing times*. October 2015;11:7: 45-47.
2. Guadagni V, Burles F, Ferrara M, Iaria G. The effects of sleep deprivation on emotional empathy. *J Sleep Res*. 2014 Dec;23(6):657-663. doi: 10.1111/jsr.12192. Epub 2014 Aug 13. PMID: 25117004. Available from: <https://pubmed.ncbi.nlm.nih.gov/25117004/>.
3. Sleep deprivation [Internet]. Wikipedia. Wikimedia Foundation; 2022. Available from: https://en.wikipedia.org/wiki/Sleep_deprivation.
4. Hershner SD, Chervin RD. Causes and consequences of sleepiness among college students. *Nat Sci Sleep*. (2014 Jun 23); 6:73-84. Doi: 10.2147/NSS.S62907. PMID: 25018659; PMCID: PMC4075951.
5. Marwa Omar Abd El-Kader and Fathia Attia Mohammad, (2013). *Public Health Research* , 3(3): 54-70 DOI: 10.5923/j.phr.2013. 303.05.
6. Tom Deliens, Peter Clarys, Ilse De Bourdeaudhuij and BenedicteDeforche. Weight, socio-demographics, and health behaviour related correlates of academic performance in first year university students Deliens et al. *Nutrition Journal* 2013, 12:162 <http://www.nutritionj.com/content/12/1/162>.
7. Laxmikant J Borse, Deepak G Bansode, Hitesh K. Modak, Rasika D Yadav Influence of Body Weight on Academic Achievement of the First Year Medical College Students. *International Journal of Health Sciences & Research* (www.ijhsr.org).(2013). Vol.3; Issue: 3: 2249-957.
8. Slats D, Claassen J, Verbeek MM, Overeem S (2013). Reciprocal interactions between sleep, circadian rhythms and Alzheimer's disease: Focus on the role of hypocretin and melatonin. *Ageing Research Reviews*, 12, 188-200. doi:10.1016/j.arr.2012.04.003.
9. Steven P. Gilbert And Cameron C. Weaver. Sleep Quality and Academic Performance in University Students: A Wake-Up Call for College Psychologists. *Journal of College Student Psychotherapy*, 24:295–306, 2010. Copyright © Taylor & Francis Group, LLC. ISSN: 8756-8225 print/1540-4730 online. DOI: 10.1080/87568225.2010.509245.
10. Ahmed S BaHammam, Abdulrahman M Alaseem, Abdulmajeed A Alzakri, Aljohara S Almeneessier and Munir M Sharif. The relationship between sleep and wake habits and academic performance in medical students: a cross-sectional study BaHammam et al. *BMC Medical Education* 2012, 12:61 <http://www.biomedcentral.com/1472-6920/12/61>.
11. Gallego-Gómez JI, González-Moro MTR, González-Moro JMR, Vera-Catalán T, Balanza S, Simonelli-Muñoz AJ, Rivera-Caravaca JM. Relationship between sleep habits and academic performance in university Nursing students. *BMC Nurs*. 2021 Jun 17;20(1):100. doi: 10.1186/s12912-021-00635-x. PMID: 34140029; PMCID: PMC8212524.
12. Jayanta Deka:Mar 13 2015. World sleep day: 93% Indians are sleep-deprived: Lucknow News - Times of India [Internet]. The Times of India. TOI; Available from:<https://timesofindia.indiatimes.com/city/lucknow/world-sleep-day-93indians-are-sleepdeprived/articleshow/46547288.cms>
13. Thomas CM, McIntosh CE, Lamar RA, Allen RL. Sleep deprivation in nursing students: The negative impact for quality and safety [Internet]. *Journal of Nursing Education and Practice*. (2017) Available from: <https://www.sciedupress.com/journal/index.php/jnep/article/view/10499>.

14. El Desouky, E. M., Lawend, J. A., & Awed, H. (2015). Relationship between quality of sleep and academic performance Among Female Nursing Students. *International Journal of Nursing Didactics*, 5(9), 6-13. <http://dx.doi.org/10.15520/ijnd.2015.vol5.iss9.111.06-13>.
15. Belingheri M, Luciani M, Ausili D, Paladino ME, Di Mauro S, De Vito G, Riva MA. Sleep disorders and night-shift work in nursing students: a cross-sectional study. *Med Lav*. 2022 Feb 22;113(1):e2022003. doi: 10.23749/mdl.v113i1.12150. PMID: 35226654; PMCID: PMC8902742.
16. Perotta, B., Arantes-Costa, F.M., Enns, S.C. et al. Sleepiness, sleep deprivation, quality of life, mental symptoms and perception of academic environment in medical students. *BMC Med Educ* 21, 111 (2021).
17. Binks, H., Vincent, G. E., Irwin, C., Heidke, P., Vandelanotte, C., Williams, S. L., & Khalesi, S. (2020). Associations between sleep and lifestyle behaviours among Australian nursing students: A cross-sectional study. *Collegian*. <https://doi.org.dominican.idm.oclc.org/10.1016/j.colegn.2020.02.013>.
18. Ceylan A, Demirdel E. The Relationship Between Academic Performance and Physical Activity, Smart Phone Use and Sleep Quality in University Students. *Clinical and Experimental Health Sciences*. September 2023;13(3):549-554. doi:10.33808/clinexphealthsci.1112286
19. Yilmaz D, Tanrikulu F, Dikmen Y. Research on Sleep Quality and the Factors Affecting the Sleep Quality of the Nursing Students. *Curr Health Sci J*. (2017 Jan-Mar); 43(1):20-24. doi: 10.12865/CHSJ.43.01.03. Epub 2017 Sep 27. PMID: 30595850; PMCID: PMC6286721.
20. Jalali R, Khazaei H, Paveh BK, Hayrani Z, Menati L. The Effect of Sleep Quality on Students' Academic Achievement. *Adv Med Educ Pract*. 2020 Jul 17;11:497-502. doi: 10.2147/AMEP.S261525. PMID: 32765154; PMCID: PMC7381801.
21. Silva, V. M., Magalhaes, J. E. De M., & Duarte, L. L. Quality of sleep and anxiety are related to circadian preference in university students. *PLoS ONE*, 15(9), 1. 2020.
22. Chen WL, Chen JH. Consequences of inadequate sleep during the college years: Sleep deprivation, grade point average, and college graduation. *Prev Med*. 2019 Jul;124:23-28. doi: 10.1016/j.ypmed.2019.04.017. Epub 2019 Apr 26. PMID: 31034864.
23. Mah CD, Kezirian EJ, Marcello BM, Dement WC. Poor sleep quality and insufficient sleep of a collegiate student-athlete population. *Sleep Health*. 2018 Jun;4(3):251-257. doi: 10.1016/j.sleh.2018.02.005. Epub 2018 Mar 27. PMID: 29776619.
24. Vallat R, Eskinazi M, Nicolas A, Ruby P. Sleep and dream habits in a sample of French college students who report no sleep disorders. *J Sleep Res*. 2018 Oct;27(5):e12659. doi: 10.1111/jsr.12659. Epub 2018 Feb 6. PMID: 29405504.
25. Kaliyaperuma I, d., elango, y., alagesan, m., & santhanakris hanan, I. (2017). Effects of Sleep Deprivation on the Cognitive Performance of Nurses Working in Shift. *Journal of Clinical & Diagnostic Research*, 11(8), 1– 3. <https://doi.org.dominican.idm.oclc.org/10.7860/JCDR/2017/26029.10324>.
26. Almojali AI, Almalki SA, Alothman AS, Masuadi EM, Alaqeel MK. The prevalence and association of stress with sleep quality among medical students. *J Epidemiol Glob Health*. 2017 Sep;7(3):169-174. doi: 10.1016/j.jegh.2017.04.005. Epub 2017 May 5. PMID: 28756825; PMCID: PMC7320447.
27. Alsagaf MA, Wali SO, Merdad RA, Merdad LA. Sleep quantity, quality, and insomnia symptoms of medical students during clinical years. Relationship with stress and academic performance. *Saudi*

- Med J. 2016 Feb;37(2):173-82. doi: 10.15537/smj.2016.2.14288. PMID: 26837401; PMCID: PMC4800917.
28. Angelone AM, Mattei A, Sbarbati M, Di Orio F. Prevalence and correlates for self-reported sleep problems among nursing students. *J Prev Med Hyg.* 2011 Dec;52(4):201-8. PMID: 22442926.
29. García A, Angel JD, Borrani J, Ramirez C, Valdez P. Sleep deprivation effects on basic cognitive processes: which components of attention, working memory, and executive functions are more susceptible to the lack of sleep? *Sleep Sci.* 2021 Apr-Jun;14(2):107-118. doi: 10.5935/1984-0063.20200049. PMID: 34381574; PMCID: PMC8340886.
30. Mishra P, Panigrahi M, Ankit D. Cognition and Alertness in Medical Students: Effects of a Single Night of Partial Sleep Deprivation. *Ann Neurosci.* 2020 Apr;27(2):57-62. doi: 10.1177/0972753120965083. Epub 2020 Nov 9. PMID: 33335357; PMCID: PMC7724434.
31. Ramjan LM, Salamonson Y, Batt S, Kong A, McGrath B, Richards G, Roach D, Wall P, Crawford R. The negative impact of smartphone usage on nursing students: An integrative literature review. *Nurse Educ Today.* 2021 Jul;102:104909. doi: 10.1016/j.nedt.2021.104909. Epub 2021 Apr 17. PMID: 33894590.
32. Thomas CM, McIntosh CE, Lamar RA, Allen RL. Sleep deprivation in nursing students: The negative impact for quality and safety [Internet]. (2017) *Journal of Nursing Education and Practice.* Available from: journal/index.php/jnep/article/view/10499.; Available from: <https://www.sciedupress.com/>
33. Patrick Y, Lee A, Raha O, Pillai K, Gupta S, Sethi S, Mukeshimana F, Gerard L, Moghal MU, Saleh SN, Smith SF, Morrell MJ, Moss J. Effects of sleep deprivation on cognitive and physical performance in university students. *Sleep Biol Rhythms.* 2017;15(3):217-225. doi: 10.1007/s41105-017-0099-5. Epub 2017 Apr 13. PMID: 28680341; PMCID: PMC5489575.
34. Chua EC-P, Fang E, Gooley JJ Effects of total sleep deprivation on divided attention performance. *PLoS ONE* 12(11):e0187098. (2017) <https://doi.org/10.1371/journal.pone.0187098>.
35. Al Ghamdi, A. A. Sleep deprivation and academic performance of students in the Collage of Nursing at King Saud University. *World Applied Sciences Journal*, (2013). 27(2), 155-167. <https://doi.org/10.5829/idosi.wasj.2013.27.02.8141>
36. Sutay SS, Sheikh NA, Rath RS, Vasudeva A. Sleep Patterns, Issues, Reasons for Sleep Problems, and Their Impact on Academic Performance among First-Year Medical Students in Central India. *Maedica (Bucur).* 2022 Mar;17(1):97-102. doi: 10.26574/maedica.2022.17.1.97. PMID: 35733748; PMCID: PMC9168562.
37. Marta, O. F. D., Kuo, S.-Y., Bloomfield, J., Lee, H.-C., Ruhyanudin, F., Poynor, M. Y., Brahmadi, A., Pratiwi, I. D., Aini, N., Mashfufa, E. W., Hasan, F., & Chiu, H.-Y. (2020). Gender differences in the relationships between sleep disturbances and academic performance among nursing students: A cross-sectional study. *N. Ed. Today*, <https://doi.org.dominican.idm.oclc.org/10.1016/j.nedt.2019.104270>.
38. Suardiaz-Muro M, Morante-Ruiz M, Ortega-Moreno M, Ruiz MA, Martín-Plasencia P, Vela-Bueno A. Sleep and academic performance in university students: systematic review. *Rev Neurol* 2020;71(02):43-53 doi: 10.33588/rn.7102.2020015 PMID: 32627159.

39. Seoane, H. A., Moschetto, L., Orliacq, F., Orliacq, J., Serrano, E., Cazenave, M. I., Vigo, D. E., & Perez-Lloret, S. (2020). Sleep Medicine Reviews, 53. <https://doi.org/10.1016/j.smrv.2020.101333>.
40. Ella, Regina & Lukpata, Felicia & Bassey, Josephine. (2019). Sleep Deprivation and Academic Performance of Nursing Students in a Tertiary Institution in Cross River State, Nigeria. Global Journal of Health Science. 11. 168. [10.5539/gjhs.v11n1p168](https://doi.org/10.5539/gjhs.v11n1p168).
41. Aung, K.T., Nurumal, M.S., & Zainal, S.R. (2016). Sleep quality and academic performance of nursing students. IOSR Journal of Nursing and Health Science (IOSR-JNHS). (2016). 5. 145-149. [10.9790/1959-050601145149](https://doi.org/10.9790/1959-050601145149).
42. El Desouky, E. M.; A. Lawend, Josephine Atef; M. Awed, H. A. Relationship Between Quality of Sleep and Academic Performance Among Female Nursing Students. *ijnd* **2015**, 5, 06-13.
43. Yasin, Iqra & Matin, Asad & Naqvi, Syed Tayyab & Sheikh, Abdullah & mallick, rumsha & ashraf, Marium & Khan, Fahad. (2015). Incidence of sleep deprivation and its relation with academic performance of undergraduate students of Karachi. International Journal of Research. 2.
44. Kana Okano, Jakub R. Kaczmarzyk, Neha Dave, John D. E. Gabrieli, & Jeffrey C. Grossman. (2019). Sleep quality, duration, and consistency are associated with better academic performance in college students. *Npj Science of Learning*, 4(1), 1–5. <https://doi.org/10.1038/s41539-019-0055-z>.
45. Ahrberg K, Dresler M, Niedermaier S, Steiger A, Genzel L. The interaction between sleep quality and academic performance. *J Psychiatr Res*. 2012 Dec;46(12):1618-22. doi: [10.1016/j.jpsychires.2012.09.008](https://doi.org/10.1016/j.jpsychires.2012.09.008). Epub 2012 Oct 3. PMID: 23040161.
46. Abraham, J., & Scaria, J. (2015). Influence of sleep in academic performance - an integrated review of literature. *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 4(Issue 4), 78-81. <https://doi.org/10.9790/1959-04477881>.
47. Polit DF, Beck CT. Essentials of Nursing Research. 8th edition. Volume 2, Philadelphia: J.B Lippincott Publication; 2008, p .82-85.
48. Basavanthappa B.T, Nursing Research, Second Edition, volume 1, Jaypee Brothers Medical Publication-2006, page No.164-165.
49. Sharma KS. Nursing research and Statistics. Second Edition, volume 1, New Delhi Elsevier;2011. page No.95
50. Polit D F and Hungler BP. Nursing Research Principles and Methods. 6th edition, volume 3, Philadelphia: JB Lippincott, 2003, page no. 120-123.
51. B.T. Basavanthappa. Nursing Research.2nd edition: Jaypee Publication; Page. No.193-194.
52. Polit And Hungler, “A textbook Of Statistics”. 2nd edition, volume 2, Philadelphia:(2001): page no. 109
53. Sharma S.K. A text book of nursing research and statistics .2nd edition. volume 2, (2005), page no. 230 to 245.