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SLEEP DISORDERS AMONG THE ELDERLY PEOPLE AT OLD HOME

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Bachelor of Science in Physiotherapy (B. Sc. PT)

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled.

SLEEP DISORDERS AMONG THE ELDERLY PEOPLE AT OLD HOME

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation, or dissemination of information of the study, I would be bound to take the written consent of my supervisor & Head of the Physiotherapy Department of Bangladesh Health Professions Institute (BHPI).

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Contents

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Acronyms

BHPI-	Bangladesh Health Professions Institute.
BMRC-	Bangladesh Medical and Research Council
CRP-	Centre for the Rehabilitation of the Paralysed
IRB-	Institutional Review Board
NREM-	Non-Rapid Eye Movement
OSA -	Obstructive Sleep Apnea
PLM-	Periodic Limb Movements
QOL-	Quality of Life
REM-	Rapid Eye Movement
RLS-	Restless Legs Syndrome
SCN-	The Suprachiasmatic Nucleus
SPSS-	Statistical Package for the Social Science
UN-	United Nations
WHO-	World Health Organization

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Abstract

Purpose: To identify the prevalence of The sleep disorders among the elderly people at old home. **Objectives:** To explore socio-demographic (age, gender, living area, previous occupation) information of the participants, to examine the prevalence of Insomnia among elderly The people at old home, to find out the prevalence of Psychiatric Disorders among The elderly people at old home, to find out the prevalence of Movement disorders among The elderly people at old home and to find out the prevalence of Sleep apnea among The elderly people at old home. **Methods:** The study design was cross-sectional. Total 82 samples were selected for this study from old home in Dhaka city. A self-developed questionnaire was used to collect the participant's information. The study was conducted by using quantitative descriptive analysis through using SPSS software 25.0 version. **Results:** In this study, the results found that 60-69 year olds made up 76.8% (n=63), 70-79 year olds made up 19.5% (n=16), and 80-90 year olds made up 3.7 % (n=3). Males made up 51.2% of the group (n=42), while females made up 48.8 % (n=40). Among the 82 participants lived in 67.1% urban area (n=55),20.7% semi urban area (n=17) and 12.2% rural area (n=10) and 72% (n=59) participants out of 82 participants have suffered from sleep disorders and 28% (n=23) participants had not been suffered from sleep disorders, out of 82 participant's insomnia 71%(n=59), Psychiatric Disorders 18%(n=15), Movement disorders 13%(n=11), sleep apnea 2%(n=2) and 46% (n=38) participants out of 82 participants were received treatment and 54% (n=44) participants were not received treatment. **Conclusion:** This study focuses on finding out sleep disorders and relation between socio-demographic factors and sleep disorders,

Keywords: Sleep disorders, Old home, Elderly people, Rapid eye movement.

Word count:10,535

CHAPTER-I INTRODUCTION

1.1 Background

Aging is a heterogeneous phenomenon, meaning that is manifests itself differently in different persons (Santos et al., 2012). Old age is normal, biological and universal process. The world's population has been aging as the average life expectancy at birth has increased. It is anticipated that the world's aged population would have surpassed one billion by 2020, with the majority of the senior population living in developing countries (Tel,2013). The aging process frequently causes changes in one's normal sleeping pattern. Several of these changes may correspond to sleep problems or a reduction of sleep quality (Costa et al., 2011).Aging is associated with a loss of temporal coordination in vital functions. The weakening of rhythmic behaviors, such as circadian sleep/wake rhythms, is a well-known symptom of aging in mammals . Rhythmic behaviors in insects were not studied across lifespan until a pioneer study revealed that decline in sleep consolidation and weakened rest/activity rhythms occur in aging fruit flies Drosophila. This work paved the way for further research into the reciprocal relationship between aging and the circadian system in insects. Because of their short lifespan (50-80 days) and excellent genetic tools, flies may aid in determining whether the decline of circadian rhythms with age is simply a biomarker of senescence or, more intriguingly, whether there is a causative relationship between weakened circadian rhythms and aging. The goal of this review is to summarize the modest advances made in this area of research thus far and to highlight the power of insects for future studies on the aging circadian system (Giebultowicz & Long, 2015).

Aging is a heterogeneous phenomenon, meaning that it manifests itself differently in different persons. It can also cause disruptions in regular sleep patterns, which is one of the most prevalent complaints among senior individuals. Sleep issues affect more than half of seniors aged 65 and up. Both the architecture and the quality of sleep can alter as people age. There could be a decrease in total sleep duration, an increase in awake time, more naps and snoozes during the day, increased usage of sleep-inducing medication, excessive tiredness during the day, focus and memory issues, depression, falls, and degradation of the quality of life (Santos et al., 2012).There are several physical and psychological

changes that occur with natural aging; nevertheless, adjusting to changes in sleep amount and quality might be among the most difficult. Although sleep disruption is a common complaint among patients of all ages, evidence indicates that older persons are especially sensitive (Roepke & Sonia Ancoli-Israel, 2010). Humans are the most intelligent creatures in the universe. We are distinct from the rest because we can experience ourselves, our ideas, and our feelings. We are born as children and must die at some point. The human life cycle is the process of growing and aging through various stages of our lives. The human life cycle is typically split into five stages: infancy, childhood, adolescence, adulthood, and old age. Every person must deal with a variety of situations and challenges at various periods of their lives. Old age is not without its troubles. Physical strength deteriorates, mental stability deteriorates, and financial power dwindles, all of which are exacerbated by the younger generation's neglect (Azad India foundation, 2010).

The old population is increasing as life expectancy rises and socioeconomic development improves. (Gulia & Kumar,2018). There are many types of sleep disorders, but which often occur in the elderly are insomnia or sleep time is reduced than usual, often awakened at night, woke up earlier and could not sleep again, as well as other issues related to psychosocial such as fear exposed to stroke, fear of dying at bedtime, and so forth. The prevalence of insomnia in the elderly occurred at 15-20%, while the breathing time stopped by 9% in the elderly men and 4% experienced by the elderly women. The factors that influence sleep disorders are physiological factors, cognitive factors, and psychological factors. Stress due to loss such as separation, divorce, death, health, and work are factors that support sleep disorders (Rosa & Rustiaty et al.,2018).Based on their level of disability, older persons are divided into three categories: healthy, dependent, and frail. Frailty is a term used to describe elderly people who are at an increased risk of bad outcomes. It is a dynamic situation in which people can return to a nonfrail state but can also become chronically frail or dependent if no specific intervention is implemented. The impact of sleep problems on this status is still unknown (Cochen et al., 2009). Healthy sleep is defined as sleep that is regular, of high quality, efficient, and of sufficient duration. While disrupted sleep is a common complaint, sleep problems are not a welcome event in late age, and many older adults maintain adequate sleep well into their golden years (Dzierzewski et al., 2022).

Sleep is a complex physiological and behavioral process comprised of two separate states: non-rapid eye movement (NREM stages 1-3) and rapid eye movement (REM), each with its own set of features. Age-related changes in sleep architecture include decreased slow-wave sleep (NREM stage 3) and REM sleep, resulting in lighter, more fragmented sleep (Luyster et al., 2015). Sleep is a vital human requirement. Meeting this demand, as well as having a quality sleeping process, is critical for preventing and maintaining health, well-being, and quality of life in older persons. Sleep boosts immunity to infections, promotes glucose metabolism and prevents diabetes, and allows people to be more active and conscious during the day (Korkmaz Aslan et al., 2020). Sleep is a physiological process that involves multiple cycles of various sleep stages. Circadian rhythms (core body temperature, hormone secretion, and the sleep-wake cycle) oscillate during a 24-hour period. An endogenous pacemaker and extrinsic stimuli regulate the sleep-wake cycle. The hypothalamic suprachiasmatic nucleus is hypothesized to mediate circadian rhythms by acting as the brain's internal clock (Bombois et al., 2010).

Sleep becomes more fragmented and light as we age, with a rise in the number of EEG arousals and awakenings, resulting in decreased sleep efficiency and overall sleep time. Throughout life, both sleep architecture and sleep characteristics undergo several changes. With age, the percentage of stage N1 and stage N2, as well as time spent awake throughout the night, increases, but sleep efficiency and slow-wave sleep percentage decrease. When opposed to young folks, the elderly tend to go to bed and wake up sooner. The circadian rhythm created by the pacemaker in the suprachiasmatic nucleus (SCN) of the hypothalamus causes the shift in sleep times. The SCN's sensitivity to external cues to adapt circadian rhythm to a natural 24-hour day/night cycle is known to decline or malfunction with age. Melatonin levels decrease with age and reach levels equivalent to daytime concentrations, possibly contributing to the rise in the prevalence of sleep disturbances as people get older. In the aged, the amplitude of circadian rhythms, such as body temperature and hormones like cortisol, is diminished. Sleep equilibrium deteriorates as people age. The reduction in homeostatic sleep pressure with age may contribute to the age-related decrease in total sleep time and sleep efficiency. The aforementioned age-related changes are largely important to older persons in good health. However,

osteoarthritis, cardiovascular disease, lung disease, psychiatric diseases, diabetes mellitus, gastric reflux, and cancer affect a considerable number of older persons. Increased drug use, combined with an increase in the prevalence of primary sleep disorders, may hurt sleep. As a result, it is plausible to conclude that sleep disorders in the elderly are typically complex and not solely due to aging (Tatineny et al., 2020).Sleep is necessary for survival. Because we spend one-third of our lives sleeping, its quality should be a significant element in overall life satisfaction. Sleep disorders are being linked to cognitive dysfunction, job, and traffic accidents, as well as metabolic, cardiovascular, and cerebrovascular consequences and death, according to new studies (Demir et al., 2015).

Sleeping earlier than desired is a common feature of aging. Older people's sleep is also characterized by an increased number of awakenings and a decrease in the deeper stages of non-rapid eye movement (REM). Although sleep disorders are far more common in older adults, even otherwise healthy older people experience sleep changes, such as decreased SWS and sleep efficiency and increased awakenings. Even in middle-aged adults, age-related changes in sleep structure are observed. Most studies find that more than one-third of older adults report early morning awakening and/or difficulty maintaining sleep on a regular (several times per week) basis (Duffy et al., 2015).

Sleep problems affect people of all ages. More than half of individuals aged 65 and up have serious difficulties getting a decent night's sleep (Cassidy-Eagle et al., 2022).Sleep disorders are common in the elderly. It is estimated that 40-70% of elderly experience chronic sleep problems. Higher rates of sleep problems are observed in those elderly with medical and psychiatric comorbidity. The comorbid disorders have additive effects on sleep disturbances, i.e. higher the number of comorbidities, higher the rates of sleep problems. Elderly subjects have initial insomnia, wake up earlier than usual, have higher time spent in bed, have nighttime awakenings, nap more, and have decreased total sleep as compared to younger adults. With increasing age lighter stages of sleep becomes more, whereas, REM and slow-wave sleep reduce; up to 6 years of age there is 2% decrease in slow-wave sleep every decade. Slow-wave sleep does not change much from 60 to 90 years of age. However, sleep efficiency, i.e. the duration of sleep relative to total time in bed, continue to decrease over time. Sleep in the elderly is fragmented, lighter and is

characterized by episodes of arousals and awakenings (Samir Kumar Praharaj,2018). Sleep disorders are a significant public health issue in an aging society. It is estimated that approximately 50% of people aged 55 and older have difficulty falling and staying asleep. Moderate sleep disorders in the elderly are frequently associated with functional deficits in daily life, such as increased tiredness and mood disorders, which leads to lower quality of life, an increased risk of depression, and pathological phenomena such as alcohol or medication addiction (Cybulski et al., 2019).

Reduced birth rates and higher health status demonstrate the success of health development. These changes have an impact on the increasing age of life expectancy, increasing the number of elderly individuals. By 2050, the world's population of people aged fifty and up is expected to reach 450 million. Indonesia now has around 17 million people aged 50 and up, with a projected population of 33 million by 2025. Among them, it is reported that the elderly has never received formal education (58 percent), so they must continue to work in an untrained field if they are still elderly. It is also reported that 36.59 percent of the population over the age of 60 are still employed as laborers, operators, and laborers. The problem that often occurs in old age according to the biological theory of the aging process (Rosa & Rustiaty, 2018).

Insomnia is defined as difficulty falling asleep, difficulty staying asleep, difficulty waking up in the morning, or sleep that is chronically non-restorative or of poor quality and is associated with daytime impairment such as fatigue, memory impairment, social or vocational dysfunction, or mood disturbance (Abd Allah et al., 2014).

From childhood until old age, general physicians, psychiatrists, and neurologists have noticed a shift in sleep patterns. Inadequate and unsuitable sleep has an impact on the elderly's quality of life. The elderly's sleep problem has recently attracted the attention of researchers. (Neikrug and Ancoli-Israel, 2010; Miner and Kryger, 2017; Fuchs, 2016). Sleep is the most crucial aspect of the elderly's general health and well-being (Suzuki et al., 2017).

Sleep patterns alter as people age. In particular, babies sleep between 10 and 14 hours per day, and older adults should sleep between 7 and 8 hours each day. Even with appropriate sleep opportunities, many older persons are dissatisfied with the quantity and quality of

their sleep; when this is coupled with daily impairment over time, they may meet the criteria for insomnia disorder (Brewster et al., 2017).

In comparison to younger adults, middle and older adults have a higher prevalence of insomnia, which increases with age. Although up to 50% of older adults have insomnia, this does not suggest that insomnia is a typical component of aging. Sleep onset insomnia is characterized by trouble falling asleep at the beginning of the sleep cycle. 5–7 Multiple and extended awakenings during the night characterize sleep maintenance or middle insomnia. 5–7 Early morning awakenings or late insomnia refers to waking up early in the morning and being unable to return to sleep. 5–7 Sleep maintenance is more difficult for older persons than it is for younger adults, resulting in decreased overall sleep time and sleep efficiency. Situational, persistent, or recurrent insomnia are all possibilities. Situational insomnia is a type of acute insomnia that lasts for a few days or weeks and is caused by changes in the sleep routine or environment. Situational insomnia can be triggered by life events such as retirement, hospitalizations, and new-onset illnesses. When the situation that causes the insomnia is resolved, insomnia usually goes away. Chronic insomnia develops if insomnia does not resolve. Recurrent insomnia is episodic, returning frequently in response to stressful life events (Brewster et al., 2017).

Insomnia is the most common sleep disorder in the elderly. In the elderly, the prevalence of insomnia symptoms ranges between 20 and 40%. According to other studies, insomnia, also known as a chronic sleep disorder, affects 50-70 percent of people over the age of 65. The Polish population has similar statistics. Subjective sleep difficulties were reported by 50.5 percent of the population studied in a Polish research program on cardiovascular disease risk factors, NATPOL, in a group of nearly 2500 respondents. The percentage was 58.9 percent among women, which was higher than the percentage among men. Subjective insomnia was found in 50.9 percent of people aged 60 to 79, particularly among women. The NATPOL study's findings are consistent with previous epidemiological studies on sleep disorders in the Polish population (Cybulski et al., 2019).Insomnia or reduced sleep time is the most prevalent sleep disorders in the elderly, as are frequent night awakenings, waking up earlier and unable to sleep again, and other psychosocial challenges such as fear of stroke, the anxiety of dying at night, and so on. Insomnia was shown to be common in

the elderly, with 9 percent of senior men and 4 percent of elderly women reporting it. Physiological, cognitive, and psychological variables all play a role in sleep problems. Separation, divorce, death, illness, and loss of employment are among the factors that contribute to sleep disorders (Rosa & Rustiaty et al., 2018).

Along with sleep duration, sleep quality has also been associated with physical activity(PA). Findings of previous cross-sectional and longitudinal studies have shown that poor sleepers are less likely to meet PA guidelines and that better initial sleep quality predicted higher levels of later PA. In general, the association between sleep and PA is bidirectional (Stefan et al., 2018).

Around the world, the proportion of elderly individuals (those aged 60 and up) is rapidly increasing. Bangladesh is a developing country where the proportion of elderly people has risen from 6.7% in 2010 to 6.9% in 2011. (Government of Bangladesh, 2013). The bulk of people in Bangladesh (even senior individuals) reside in rural areas (Government of Bangladesh, 2013). In Bangladesh, the growing number of elderly people is becoming a problem. As a result, the importance of their quality of life (QOL) is growing (Uddin, 2017).

In a national poll of older persons, the average total sleep time reported was 7 hours per night, which was the same or higher than that reported by younger adults. Nonetheless, older people complain about their sleep. A large epidemiological research of sleep discovered that over 50% of older persons had symptoms of insomnia, but that chronic sleep disruptions were predominantly connected with indicators of poor health (Neikrug and Ancoli-Israel, 2010).

Increased life expectancy has resulted in aging populations all around the world. Bangladesh, like other developing countries, is seeing an increase in the proportion of persons aged 60 and up. A considerable disturbance to an individual's daily sleep-wake cycle is a common condition related to the aging process. Sleep is an important physiological process that serves important restorative functions, and studies show that the prevalence of sleep difficulties rises with age. Approximately 20% of persons aged 65 and older have substantial and chronic sleep disorders, which are characterized as an

insufficient quantity and/or quality of sleep that lasts for a long time. It can take the form of trouble getting asleep, remaining asleep, or waking up too early (Uddin, 2017).

According to epidemiological studies, more than 57 percent of the elderly report sleep disorders, with only 12 percent reporting no complaints about their sleep. Another study discovered a high prevalence of sleep disorders (57%) and insomnia (50%) in the elderly. Other research has found that insomnia can have a negative impact on many aspects of a person's life, including relationships with others, occupation, and health status, and that sleep deprivation can lead to decreased immune system function and heart disease. Previous research has shown that age is the most important factor in sleep disorders, followed by gender, occupation, social status, and physical and mental health. There are various approaches to dealing with sleep disorders. Sleeping medications are commonly used by the elderly, with people over the age of 60 accounting for 39% of all users. However, these drugs only provide temporary relief from sleep disorders and primarily reduce sleep with Rapid Eye Movement (REM), which is necessary for mental agility and stress relief. As a result, except in a few special cases and for short-term use, these drugs should not be prescribed (Torabi et al., 2012).

1.2 Rationale

Sleep problems have been shown to be the most common problem experienced by older people. About 50% of US people aged 65 and over reported sleep problems. In Egypt, the prevalence of sleep problems among people aged 60 years and above was 33.6%. In China, approximately 42 percent of people aged 60 or above suffered from sleep problems. In Bangladesh, about 39 percent of older people reported sleep problems.

This is the first study in our country on adult sleep problems. Geriatrics discusses various problems of older people. It also includes sleep problems. From this study, we can find out the extent of sleep problems in older people. Also what kind of problems affect sleep. This study will serve as a resource for research into the effects of subsequent sleep problems. It will provide guidance on what a professional healthcare practitioner should look for in preventing sleep problems in the elderly.

1.3 Research question:

What are sleep disorders among the elderly people at old home?

1.4 Study Objectives:

1.4.1 General objective

To find out The sleep disorders among elderly people at old homes.

1.4.2 Specific Objectives

I. To identify the socio-demographic information of participants;

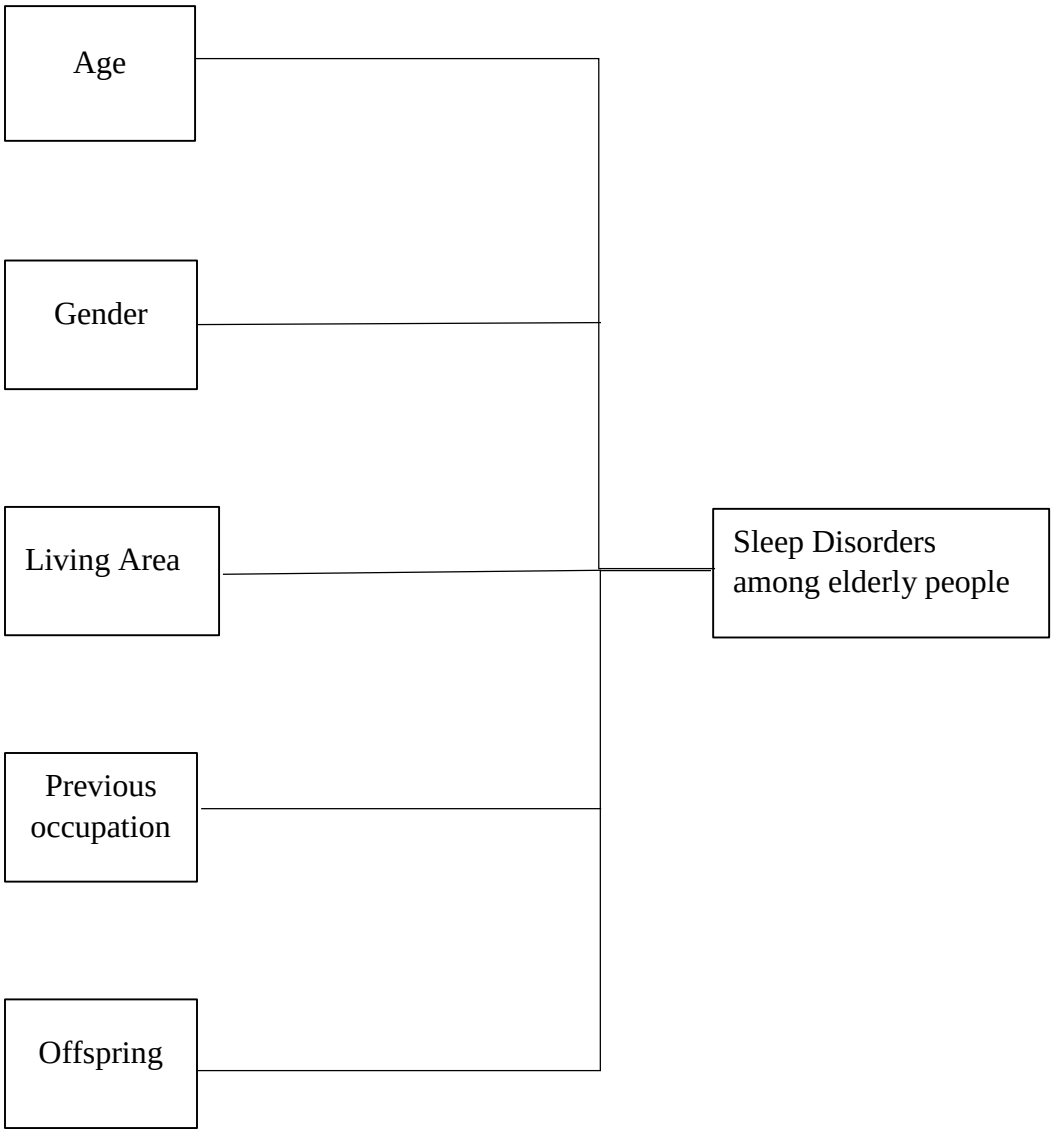
II. To know the prevalence of Insomnia, Psychiatric Disorders, Movement disorders and Sleep Apnea among the elderly people at old home;

III. To perceive whether sleep disorders patient received treatment or not;

IV. To estimate the correlation between sociodemographic factors with Sleep disorders domains;

1.5 Conceptual Framework

Predictable variables **Response variables**



1.6 Operational definition:

Aging:

Aging is a heterogeneous phenomenon, meaning that it manifests itself differently in different persons.

Sleep:

Sleep is a complex biological process. It is a reversible state of unconsciousness in which there are reduced metabolism and motor activity.

Sleep disorders:

Sleep disorders are a collection of ailments that disrupt regular sleeping habits. One of the most prevalent clinical concerns seen is sleep disorders.

Restless legs syndrome (RLS):

RLS is a condition that causes an uncontrollable urge to move the legs, usually because of an uncomfortable sensation.

Circadian rhythms:

Circadian rhythms are physical, mental, and behavioral changes that follow a 24-hour cycle.

Snoring:

Snoring is noisy breathing while you sleep.

CHAPTER-II LITERATURE REVIEW

According to the 2004 National Health Interview Survey in the United States, 20–25 percent of older men and women sleep less than 6 hours every night. 81 Insomnia is more common among older Hispanics than in non-Hispanic whites, according to studies. 82 Researchers found sleeplessness in 32 percent of the elderly population with various comorbidities in a small hospital-based study in northern India. 78 To better understand the role of ethnic disparities in age-related insomnia, large-scale research is needed. Although the clinical severity of insomnia increases with age, concomitant health issues have a significant impact (Gulia et al., 2018).

Sleep disturbance is one of the most prevalent problems that older individuals face, with approximately 60% of community-dwelling seniors experiencing sleep disturbances at least a few evenings per week (Cho et al., 2008).

Self-reported sleep problems, particularly persistent insomnia, are becoming more common as people get older (Ensrud et al., 2009).Sleep disturbances are more common in the elderly population. The high frequency of medical and psychosocial comorbidities, as well as the frequent use of various drugs, are important explanations for this, rather than aging itself (Bloom et al., 2009).

Sleep issues are frequently caused by changes in the sleep patterns of the elderly as they age. Epidemiologic data indicate that sleep complaints and sleep disorders grow with old age. It is underlined that the prevalence of sleep disorders among community-living senior individuals is greater than 50% (Tel, 2013).

The aging population is a global phenomena that reflects the rise in life expectancy. By 2030, one billion individuals, or one in every eight persons worldwide, will be beyond the age of 65. In Egypt, the number of elderly people reached 5.8 million in 2011, accounting for 7.3% of the overall population, and it is predicted to rise to 11.6% by 2030 as health-care services improve. One of the key changes that usually accompany the aging process in this rapidly rising older population is an often significant alteration of an individual's daily sleep-wake cycle (Abd Allah et al., 2014).

It is commonly acknowledged that sleep disorders become more common with age, particularly among the elderly. Sleep deprivation has an impact on physical and psychiatric morbidity, cognitive performance, and quality of life (Fok et al., 2010).

Sleep is essential for overall health and well-being throughout life. The number of persons aged 65 and up in the United States is constantly rising and is predicted to double to roughly 72 million in the next 25 years. By 2030, one in every five Americans will be above the age of 65. The physiology of sleep varies with age, and many sleep problems become more prevalent in the elderly. Sleep disorders are reported by up to 50% of older persons, compared to 15.9% to 22.3 percent of the general population. (Tatineny et al., 2020)

Even though cultures have evolved dramatically, current epidemiological research on sleep duration do not differ significantly from the results of studies conducted roughly 50 years ago. This could imply that sleep needs are rather consistent and are determined by intrinsic, genetic, and biological variables rather than environmental influences (Partinen, 2011).

several cross-sectional studies have been conducted in America and Europe to investigate the frequency of sleep disorders and their repercussions, but little is known regarding their occurrence, natural history, and implications on preexisting conditions in Africa. Despite the dearth of such data, we can infer statistics from African Americans and some Sub-Saharan African countries. This will allow us to gain a better grasp of the current state of sleep problems in Africa, as well as their impact on its people (Aragon-Arreola et al., 2016).

According to a global cross-sectional study done among 35,327 people in ten countries on International Sleep Well Day (March 21, 2002), 24 percent of respondents did not sleep well, 31.6 percent had insomnia, and 11.6 percent were "extremely drowsy" or "dangerously sleepy" throughout the day. Turkey is a huge country with a population of over 70 million people (adults over 48 million) and a diverse cultural and social landscape. There are few local statistics on sleep-related symptoms like snoring, insomnia, and restless legs syndrome (RLS), but no large-scale, nationwide survey covering a wide variety of symptoms associated with sleep disorders. The Turkish Adult Population Epidemiology of Sleep Disorders (TAPES) study was designed to look at the prevalence of sleep complaints in a random sample of 5021 people who were representative of the country's adult population (Demir et al., 2015).

Despite being generally thin, Asian Indians have a high frequency of hypothyroidism, diabetes, metabolic syndrome, and early cardiovascular disease. It is unknown how common SDB is in this group. There has been little research on this ethnic group, with the majority being clinic-based. The current study aims to evaluate the prevalence of various sleep disorders in a generally lean metropolitan South Indian population, with a focus on snoring and daytime sleepiness, as well as its relationship with hypothyroidism and metabolic risk factors. The researchers also looked into their prospective link to cardiometabolic risk factors (Krishnan et al., 2012).

Sleep issues have been identified as the most common issue among the elderly. Age, medical issues, and environmental or lifestyle changes can all contribute to them. According to the underlying reason, sleep difficulties might be primary or secondary. Irregular sleep patterns, jet lag, poor sleep hygiene, excessive caffeine, excessive alcohol, usage of certain drugs, and stress are all common causes of main sleep difficulties. Primary sleep issues are rarely linked to a medical or psychological illness. Medical or psychological diseases are linked to secondary sleep issues. Accidents fall, and persistent weariness is all increased by little sleep. Sleep issues were reported by about half of Americans aged 65 and up. Sleep disorders were found to be prevalent in 33.6 percent of Egyptians aged 60 and up. In China, almost 42% of persons aged 60 and up have sleep disorders. In Bangladesh, over 39% of the elderly reported sleeping issues. Participants in the latter trial reported sleeping issues, but no measurement devices were used to assess them. As a result, it may be important to identify sleep difficulties in older persons and their association with socio-demographic factors. The author hopes that this study will contribute to a better understanding of sleep problems in older people and will aid in the development of strategies to assess and prevent the consequences of sleep problems. Improved assessment of sleep problems and the development of prevention and treatment programs are recommended to inform improved assessment of sleep problems and prevention and treatment programs (Uddin, 2017).

Restless legs syndrome, also known as WillisEkbom illness, is characterized by a strong need to move one's legs, typically accompanied by strange leg sensations, which can make it difficult to go asleep and/or stay asleep. RLS can be idiopathic or related to various

medical disorders such as iron deficiency anemia, chronic kidney disease, and peripheral neuropathy. Restless leg syndrome is frequent among the elderly, with a prevalence of 10-35 percent among those aged 65 and up. Periodic limb movements (PLMs) are characterized by repetitive, stereotyped movements of the big toe and ankle, and occasionally the knee and hip, in the majority of persons with RLS. PLMs, on the other hand, occurs about 70% of the time when RLS is absent. Polysomnography is used to diagnose this syndrome by recording bursts of electromyography. activity in the afflicted muscles at regular intervals. Although PLMs are usually asymptomatic and do not require treatment, their presence in patients with unexplained insomnia may necessitate treatment (Tatineny et al, 2020).

A comprehensive research of over 9,000 older adults over the age of 65 indicated that 42% of participants had trouble initiating and maintaining sleep.A three-year follow-up evaluation found that 15% of patients who did not report sleep difficulty at baseline had disturbed sleep, implying an annual incidence rate of around 5% (Roepke & Ancoli-Israel, 2010).

According to a recent thorough review by Ohayon, difficulties starting sleep were noted by 15% to 45% of noninstitutionalized senior respondents, interrupted sleep by 20% to 65%, early morning awakenings by 15% to 54%, and nonrestorative sleep by 10% (Ancoli-Israel & Ayalon,2006).

Obstructive sleep apnea (OSA) is defined by upper airway instability caused by recurrent pharyngeal collapse, resulting in reduced (hypopnea) or absent (apnea) airflow during sleep. The prevalence of OSA rises with age, with figures differing according to on the criterion utilized. The prevalence of OSA in older persons could be as high as 70% in men and 56% in women, compared to prevalence estimates of 15% in men and 5% in women in the overall adult population (Tatineny et al, 2020).

When insomnia was defined as at least one occurrence of trouble beginning sleep (8.3%), maintaining sleep (15.0%), or waking up early in the morning, a Japanese epidemiological survey found a prevalence of 21.4 percent (8.0 percent). More than half of older persons suffer from sleeplessness, which is frequently untreated. In elderly persons, the annual incidence of insomnia is estimated to be 5-8 percent. 4–6 The prevalence of excessive

daytime drowsiness, defined as a self-reported sense of excessive daytime sleepiness "often" or "often" among five possibilities, was 2.5 percent in major epidemiological research of 28 714 participants (Suzuki et al., 2017).

Sleep is essential for both emotional and physical wellness. Inadequate sleep has been linked to obesity, diabetes, heart disease, and depression. The health-care system bears a large burden as a result of sleep disturbances. An individual with a chronic sleep issue has a $2000 higher annual medical expense than someone who does not have a sleep disorder (Xie et al., 2017).

In prospective cohort research done in the United States, the hypothesis that sleep disorders are independently related to more indications of frailty among older men was evaluated. The participants in this study were 3133 gentlemen aged 67 and up. When compared to the chronologically advantaged individuals who were not frail, complaints about poor sleep quality, excessive sleepiness during the day, short duration of sleep, prolonged sleep latency, and fragmentation of sleep was more common among the frail senior citizens studied (p 0.002 for all parameters). Self-reports of poor sleep quality (OR = 1.28, IC 1.09-1.50), sleep efficiency below 70% (OR = 1.37, IC 1.12-1.67), and sleep latency of more than 60 minutes (OR = 1.42, IC 1.10-1.82) were all independently linked to a higher risk of frailty after minor causes of confusion were taken into account. The scientists concluded that sleep complaints, such as self-reported poor sleep quality, sleep efficiency, and longer sleep latency, are all linked to increased frailty. In a study conducted in Iran with 1409 men and 1685 women with an average age of 43.57 years (SD = 17.5) to determine the occurrence of sleep issues as well as the subjective quality of sleep, the prevalence of sleep complaints was also found to be high. Sleep issues were more common in women, chronologically advantaged individuals, widowed people, and separated couples (Santos et al, 2012).

As of 2019, over 13 million people living in Bangladesh are aged over 60 which is 8% of the country’s total population. The proportion of older people is expected to double to 21.9% in 2050 with 36 million people aged over 60. This means that for every five Bangladeshis, one will be a senior citizen (Global agewatch index, 2015**).**

CHAPTER-III METHODOLOGY

3.1 Study Design

This study was a quantitative study design where a cross-sectional study design has been employed. In a cross-sectional examination, the researcher obtains the result of the exposures or incidences in a specific time frame. This also can be termed as a snapshot of time. The members in a cross-sectional examination are simply chosen dependent on the inclusion and exclusion criteria in a certain time frame.

3.2 Study site

The study was conducted in Bangladesh Association for the Aged and Institute of Geriatric Medicine (BAAIGM) and Institute for Autistic children and Blind Old home and TN mother Child Hospital, these are government institutions where older people are distributed with.

3.3 Study population

All the elderly people who live in old homes were the population of this study because the researcher was interested to find out the proportion of sleep disorders among the elderly people in old homes. Samples were selected by the convenience sampling procedure from two selected old homes that are Bangladesh Association for the Aged and Institute of Geriatric Medicine (BAAIGM) and Institute for Autistic children and Blind Old home and TN mother Child Hospital.

3.4 Sample size

The sample size has been calculated as the estimation of sampling scientifically and was selected as the standard number of the sample as a calculation guide. (Depends on inclusion & exclusion criteria).

Mathematical Tools:

n=number of sample

p=sample proportion /percentage of incidence & prevalence =(0.5)

q=1-p

z=1.96(constant)

e=margin of error 5%=0.05

The equation of sample size calculation is given below-

$$n = \frac{z2pq}{e2}$$

$$= \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2}$$

$$= \frac{3.8416 \times 0.5 \times 0.5}{0.0025}$$

$$= \frac{0.9406}{0.0025}$$

$$= 384$$

So, initially, the researcher's goal was to focus the study on 384 samples using the calculation above. However, because the study was conducted as part of a fourth professional academic research project and data was collected in a limited time by considering the feasibility and time limitation 82 sample were collected conveniently

3.5 Sampling Technique:

Findings the appropriate number and type of people taking part in the study is called "sampling" (Hicks, 2009). The study was conducted by using the convenience sampling methods due to the time limitation and as it was the one of the easiest, cheapest and quicker method of sample selection. The researcher used this procedure, because, getting of those samples whose criteria were concerned with the study purpose.

3.6 Selection criteria:

Inclusion criteria

- Both male and female will be included.
- The elderly people of above 60 years' age.
- Subject who are willing to participate in the study.

Exclusion criteria:

- Who has cognitive problem
- Unconscious patient
- Loss of vision or hearing.

3.7 Data Processing

3.7.1 Data Collection Tools

- Record or Data collection form
- Informed Consent
- Self developed questionnaire

SPSS (Statistical Package for the Social Sciences) software

- Papers, pen, and pencil etc.

3.7.2 Data Collection Procedure

In this study data were collected by questionnaire. Following that the investigator went to elderly people in old homes to take permission if they are interested in this study or not. Firstly, the investigator introduced himself and the research project as well its purpose. Then investigator met with individual subject to find out if they were interested in participating. For data collection, the investigator used Bengali questionnaire and close ended questions.

3.8 Data Analysis

Descriptive statistics were used to analyze data. Descriptive statistics refers methods of describing a set of results in terms of their most interesting characteristics (Hicks, 2009). Data were analyzed with the software named Statistical Package for the Social Science (SPSS) version 25.0. The variables were labeled in a list and the researcher established a computer-based data definition record file that consist of a list of variables in order. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment and measurement level of data. The next step was cleaning new data files to check the inputted data set to ensure that all data has been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data were ready for analysis in SPSS. Data were collected on frequency and contingency tables. Measurements of central tendency were carried out using the mean plus standard deviation (SD) for variables. For the study of the association of numeric variables chi squared test, Spearman Correlation test were used. Data were analyzed by descriptive statistics and calculated as percentages and presented by using table, bar graph, pie charts etc. Microsoft office Excel 2016 was used to decorating the bar graph and pie charts. The results of this study were consisted of quantitative data. By this study a lot of information was collected.

Chi-squared test:

A chi-squared test, also written as $\chi 2$ test, is any statistical hypothesis test where the sampling distribution of the test statistic is a chi-squared distribution when the null

hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for Pearson's chi-squared test. The chi-squared test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories.

Assumptions of the Chi-square:

The data in the cells should be frequencies, or counts of cases rather than percentages or some other transformation of the data.

The levels (or categories) of the variables are mutually exclusive. That is, a particular subject fits into one and only one level of each of the variables.

Each subject may contribute data to one and only one cell in the $\chi 2$. If, for example, the same subjects are tested over time such that the comparisons are of the same subjects at Time 1, Time 2, Time 3, etc., then $\chi 2$ may not be used.

The study groups must be independent. This means that a different test must be used if the two groups are related. For example, a different test must be used if the researcher's data consists of paired samples, such as in studies in which a parent is paired with his or her child.

There are 2 variables, and both are measured as categories, usually at the nominal level. However, data may be ordinal data. Interval or ratio data that have been collapsed into ordinal categories may also be used. While Chi-square has no rule about limiting the number of cells (by limiting the number of categories for each variable), a very large number of cells (over 20) can make it difficult to meet assumption #6 below, and to interpret the meaning of the results.

The value of the cell expecteds should be 5 or more in at least 80% of the cells, and no cell should have an expected of less than one. This assumption is most likely to be met if the sample size equals at least the number of cells multiplied by 5. Essentially, this assumption specifies the number of cases (sample size) needed to use the $\chi 2$ for any number of cells in that $\chi 2$. This requirement will be fully explained in the example of the calculation of the statistic in the case study example.

Calculating Chi-square

The formula for calculating a Chi-Square is:

$$\sum x_{i-j}^2 = \frac{(O-E)^2}{E}$$

Where,

O = Observed (the actual count of cases in each cell of the table)

E = Expected value

$\chi 2$ = The cell Chi-square value

$\sum \chi 2$ = Formula instruction to sum all the cell Chi-square values

$x2\ i{-}j$ = i−j is the correct notation to represent all the cells, from the first cell (i) to the last cell (j); in this case Cell (i) through Cell (j).

The first step in calculating a $\chi 2$ is to calculate the sum of each row, and the sum of each column. These sums are called the "marginals" and there are row marginal values and column marginal values.

3.10 Ethical Consideration

The researcher maintained some ethical considerations: Researcher has followed the Bangladesh Medical Research Council (BMRC) guideline & WHO research guideline. A research proposal was submitted to the physiotherapy department of BHPI for approval and the proposal was approved by the faculty members and gave permission initially from the supervisor of the research project and from the course coordinator before conducting the study. The proposal of the dissertation including methodology was presented to the Institutional Review Board (IRB) of Bangladesh Health Professions Institute (BHPI) for oral presentation defense was done infront of the IRB. Then the necessary information was approved by Institutional Review Board and was permitted to do this research. After getting the permission of doing this study from the academic institute the researcher had been started to do it. The researcher had been taken permission for data collection from Bangladesh Association for the Aged and Institute of Geriatric Medicine (BAAIGM) and Institute for Autistic children and Blind Old home and TN mother Child Hospital.. The participants would be informed before to invite participation in the study. A written consent form used to take the permission of each participant for the study. The researcher ensured that all participants were informed about their rights and reserves and about the aim and objectives of the study. Researcher also ensured that Bangladesh Association for the Aged and Institute of Geriatric Medicine (BAAIGM) and Institute for Autistic children and Blind Old home and TN mother Child Hospital. were not hampered by the study. All kinds of confidentiality highly maintained. The researcher ensured not to leak out any type of confidentialities. The researcher was eligible to do the study after knowing the academic and clinical rules of doing the study about what should be done and what should not. All rights of the participants were reserved and researcher was accountable to the participant to answer any type of study related question.

CHAPTER-IV RESULTS

4.1 Socio-demographic informetion

A total 82 subjects were studied in this study. Necessary information was collected from the respondents and after analysis data was presented as tables and graphical from below.

4.1.1 Socio-demographic characteristics of the participants of the study

The table above shows a total of 82 participants. 60-69 year olds made up 76.8 percent (n=63), 70-79 year olds made up 19.5 percent (n=16), and 80-9 year olds made up 3.7 percent (n=3). Males made up 51.2 percent of the group (n=42), while females made up 48.8 percent (n=40). Among the82 participants lived in 67.1% urban area (n=55),20.7% semi urban area (n=17) and 12.2% rural area (n=10). In the case of educational level of the participants 8.5% (n=7) were illiterate, 8.5% (n=7) had primary education, 4.9%(n=4) participants got secondary education,7.3%(n=6) participants had higher secondary education,22%(n=18) were graduated and 48.8% were post graduated. Data showed that 4.9%(n=4) were farmer,0%(n=0) were day labour,24.4%(n=20) were teacher ,14.6%(n=12) were house wife,7.3% (n=6) were business man,31.7%(n=26) were govt. employee and 17.1%(n=14) were others job.

4.1 Table 01: Socio-demographic part

Variable	Category	Frequency	Percentage	Mean age
Age group	60-69 years	63	76.8%	68.29
	70-79 years	16	19.5%	
	80-89 years	3	3.7%	

Gender-	Male Female	42 40	51.2% 48.8%
Living area	Urban Semi urban Rural	55 17 10	67.1% 20.7% 12.2%
Educational Level	Illiterate Primary Secondary Higher Secondary Graduate Masters	7 7 4 6 18 40	8.5% 8.5% 4.9% 7.3% 22.0% 48.8%
Previous occupation	Farmer Day labor Teacher House Wife Business man Govt Employee Others	4 0 20 12 6 26 14	4.9% 0% 24.4% 14.6% 7.3% 31.7% 17.1%

4.2 Prevalence

4.2.1 Prevalence of sleep disorders

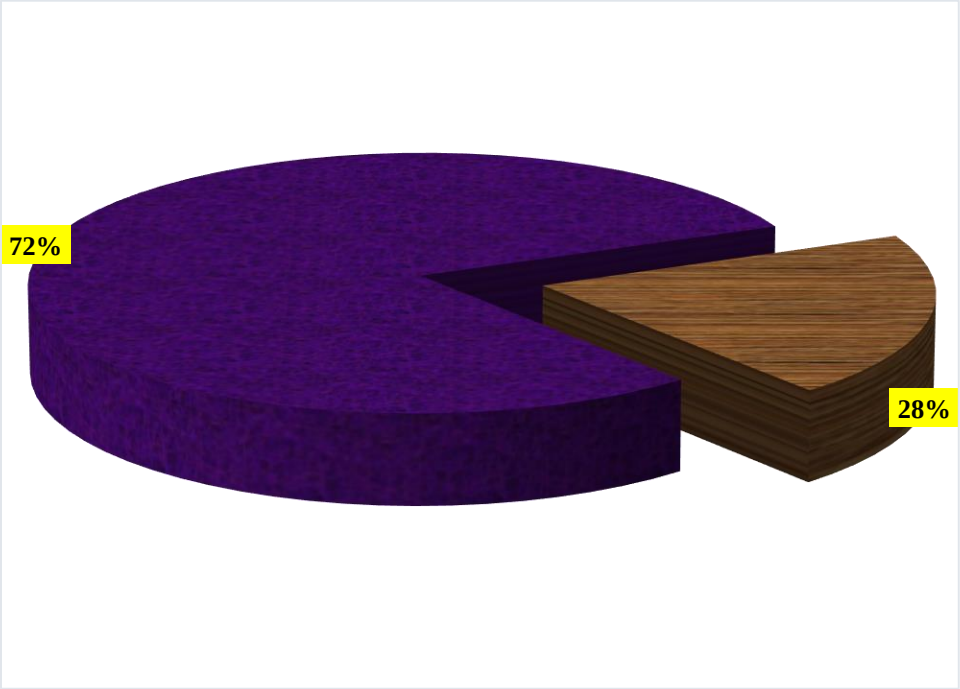


Figure-01: Prevalence of sleep disorders

Outcome show that 72% (n=59) participants out of 82 participants have suffered from sleep disorders and 28% (n=23) participants had not been suffered from sleep disorders.

4.2.2 Prevalence of Insomnia

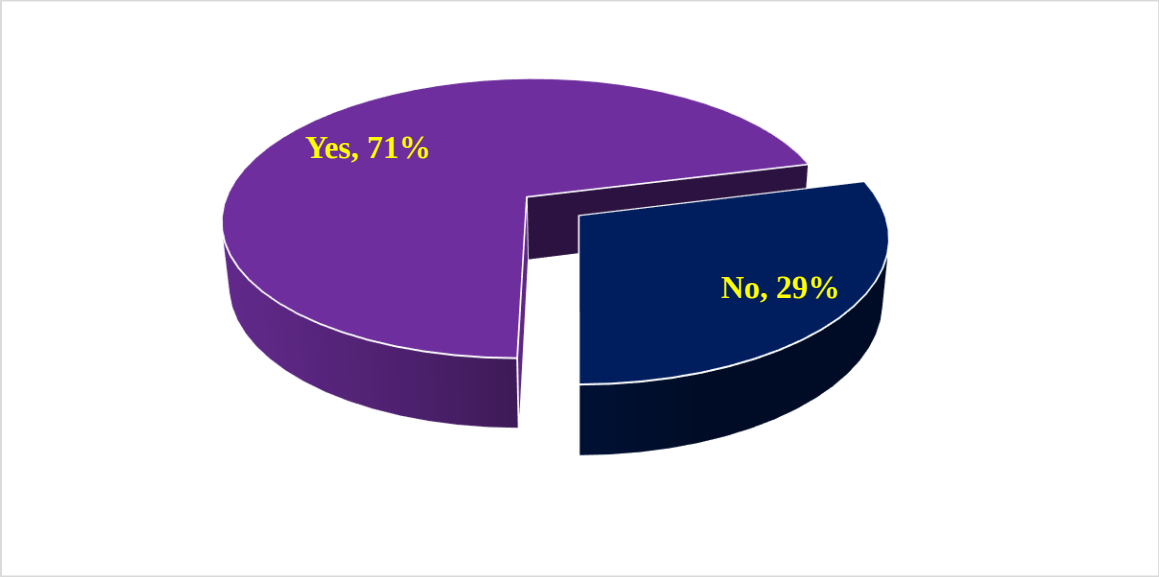


Figure-02: Prevalence of Insomnia

Outcome show that 72% (n=59) participants out of 82 participants have suffered from Insomnia and 28% (n=23) participants had not been suffered from Insomnia.

4.2.3 Prevalence of Psychiatric disorder

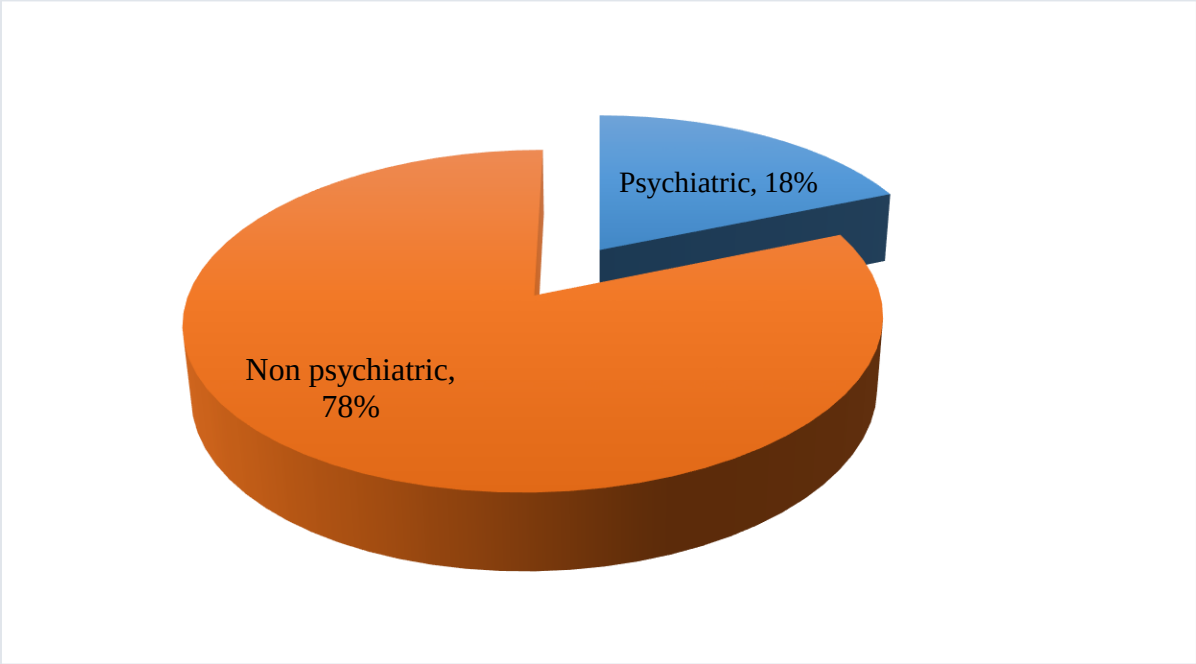


Figure-03: Prevalence of Psychiatric disorder

Outcome show that 18% (n=15) participants out of 82 participants have suffered from Psychiatric Disorders and 78% (n=67) participants had not been suffered from Psychiatric Disorders.

4.2.4 Prevalence of Movement disorder

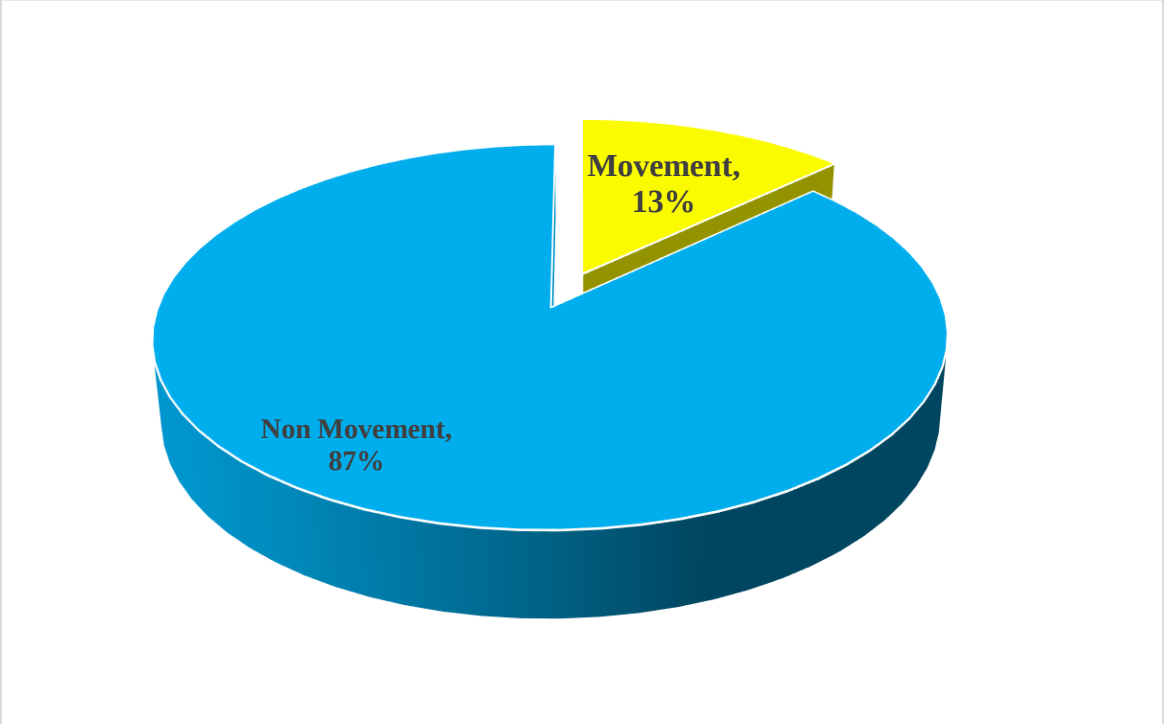


Figure-04: Prevalence of Movement disorder

Outcome show that 13% (n=11) participants out of 82 participants have suffered from Movement disorders and 87% (n=71) participants had not been suffered from Movement disorders.

4.2.5 Prevalence of Sleep Apnea

Figure-05: Prevalence of Sleep Apnea

Outcome show that 2% (n=2) participants out of 82 participants have suffered from sleep apnea and 98% (n=80) participants had not been suffered from sleep apnea

4.2.6 Treatment taken or not

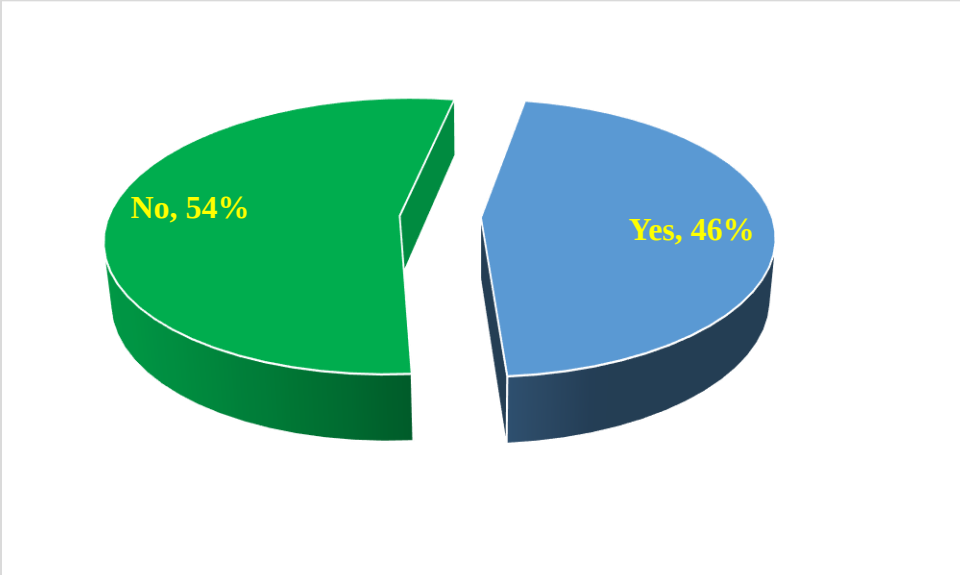


Figure-06: Percentage that taken treatment or not

Outcome show that 46% (n=38) participants out of 82 participants were received treatment and 54% (n=44) participants were not received treatment.

4.2.7 Association:

Sleep disorders (absent/present) and independent variables (age, gender, living area, etc.....) have a relationship. This table contained the test value and p values.

Table 02: Association between dependent (Sleep disorders present/absent) variable with the independent variable.

Dependent variable: Sleep disorders(present/absent)			
Independent Variable	Test	Test value	P-value
Age overall- 60-69 years 70-79 years 80-89 years	Chi-Square	7.316	0.503
Gender- Male, female	Chi-Square	2.681	0.443
Living area	Chi-Square	9.815	0.133
Educational Level	Chi-Square	19.366	0.198
Previous occupation	Chi-Square	81.462	0.000

Alpha value: *=<.05, **=<.01, *=<.001**

The age Chi-Square test value was 7.316, with a 5% level of significance. The age p-value is (p<0.503). As a result, the outcome was not significant, indicating that there was no strong association between age and Sleep disorders (absent/present).

The gender Chi-Square test value was 2.681, with a 5% level of significance. The gender p-value is (p<0.443). As a result, the outcome was not significant, indicating that there was no strong association between gender and Sleep disorders (absent/present).

The living area Chi-Square test value was 9.816, with a 5% level of significance. The living area p-value is (p<0.133). As a result, the outcome was not significant, indicating that there was no strong association between Living area and Sleep disorders (absent/present).

The Educational level Chi-Square test value was 19.366, with a 5% level of significance. The gender p-value is ($p<0.198$). As a result, the outcome was not significant, indicating that there was no strong association between Educational level and Sleep disorders (absent/present).

The Previous occupation Chi-Square test value was 81.462, with a 5% level of significance. The gender p-value is ($p>0.000$). As a result, the outcome was significant, indicating that there was strong association between Previous occupation and Sleep disorders (absent/present).

4.3 Sleep Disorders Questionnaire part

4.3.1 Trouble falling asleep

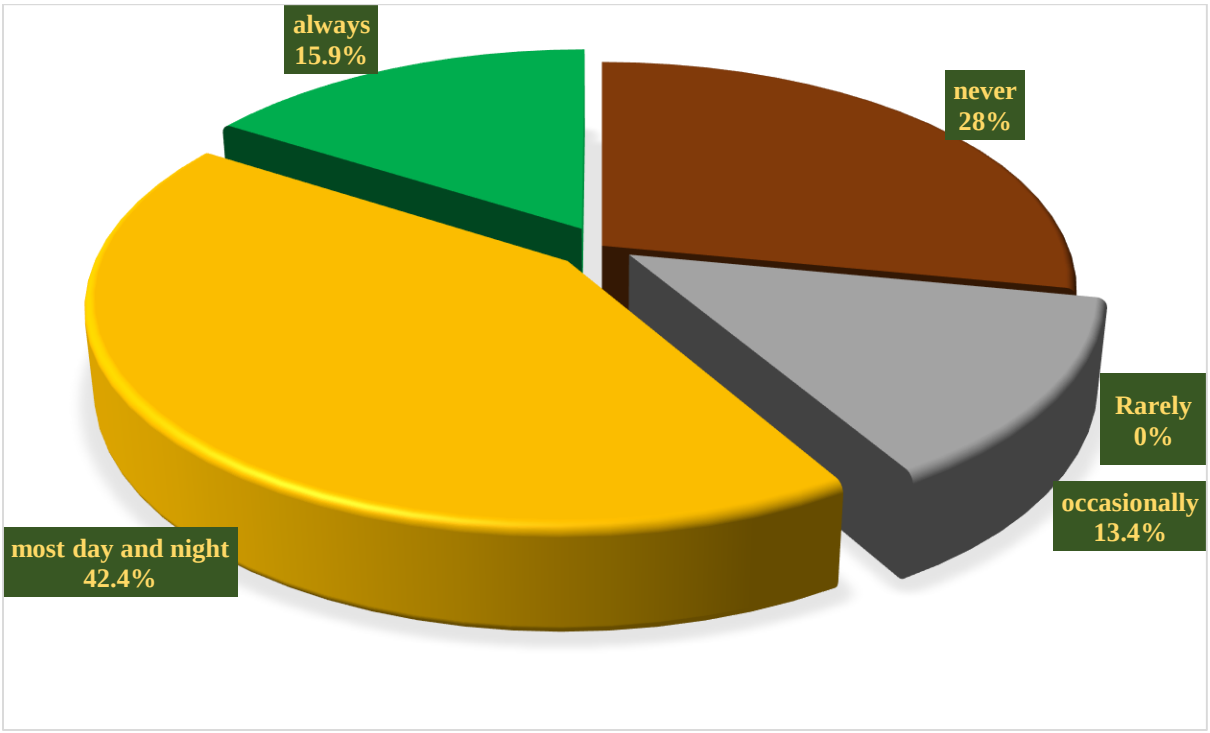


Figure-07: Trouble falling asleep of participants

In this study it was found that about 42.4% (n=35) participants selecting most nights/days, 28% (n=23) participants selecting never, about 13.4% (n=11) participants selecting occasionally, about, about 15.9% (n=13) participants selecting always, about 0% (n=0) participants selecting Rarely,

4.3.2 Trouble staying asleep

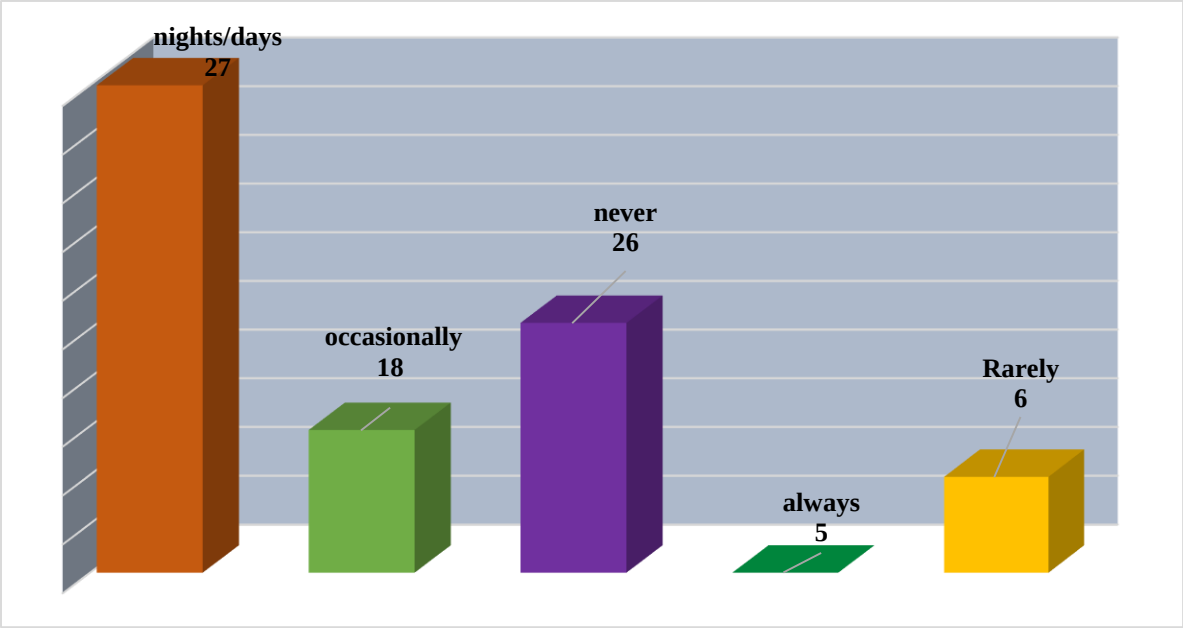


Figure-08: Trouble staying asleep of participants

In this study it was found that about 32.9% (n=27) participants selecting most nights/days, about 22% (n=18) participants selecting occasionally, about 13.7% (n=26) participants selecting never, about 6.1% (n=5) participants selecting Rarely, about 7.3% (n=6) participants selecting always.

4.3.3 Take sedative drug for sleep

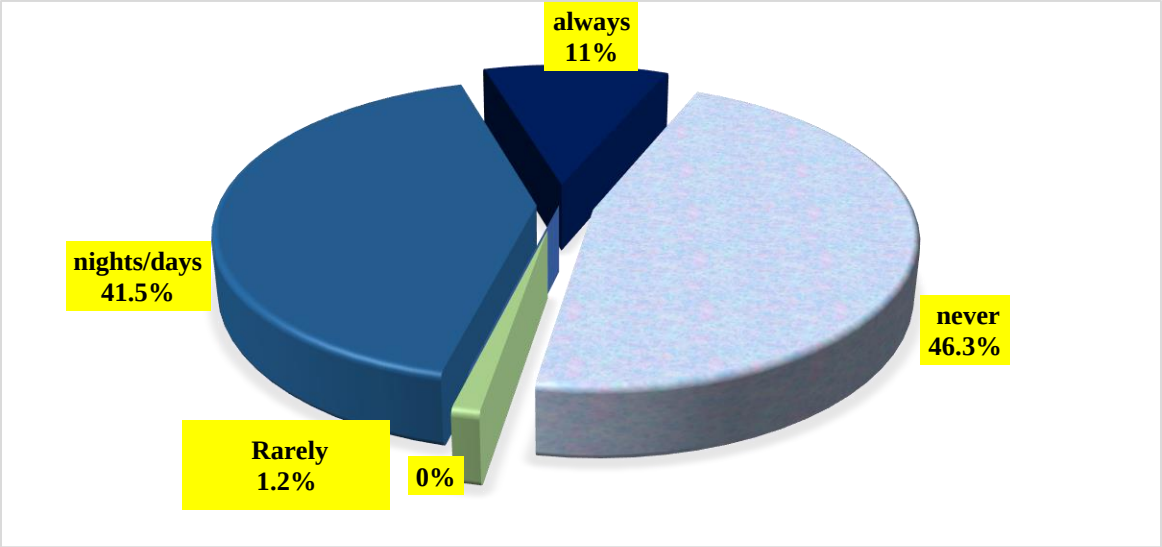


Figure-09: Take sedative drug for sleep

Among the total Sleep disorders patients of this study was found that about 46.3% (n=38) participants selecting never for sedative drug, about 41.5% (n=34) participants selecting most nights/days for sedative drug, about 1.2% (n=1) participants selecting Rarely for sedative drug, about 11% (n=9) participants selecting always for sedative drug. No one selecting occasionally for sedative drug.

4.3.4 Medical conditions

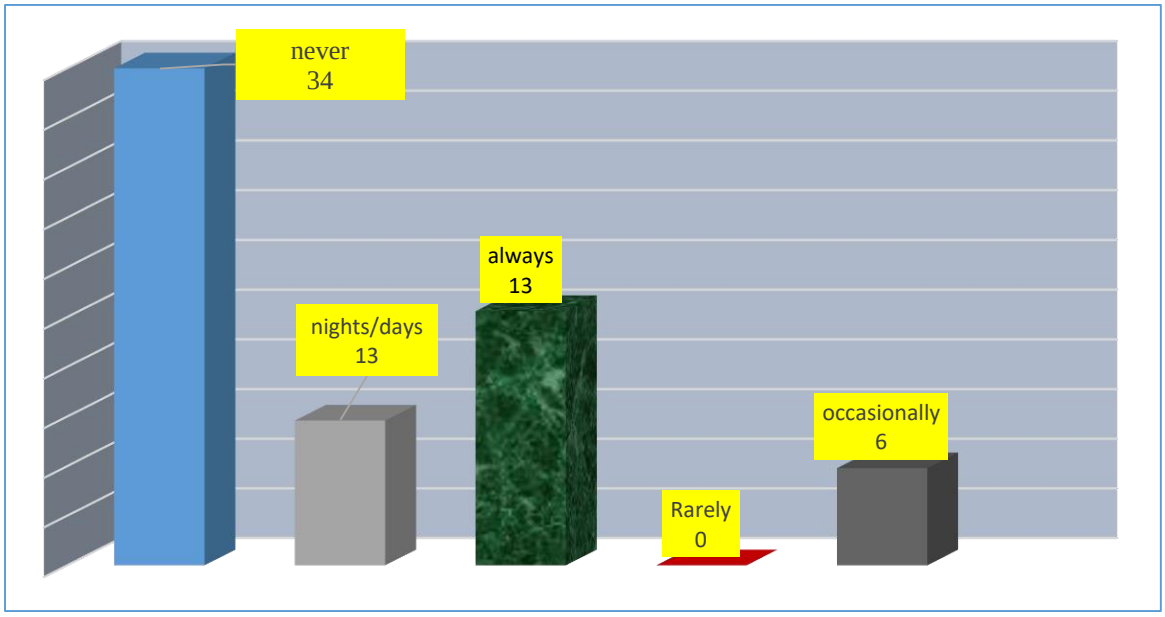


Figure-10: Medical conditions of participants

Among the total Sleep disorders patients of this study was found that about 41.5% (n=34) participants selecting never for medical condition, about 35.4% (n=29) participants selecting always for medical condition, about 15.9% (n=13) participants selecting most nights/days for medical condition, about 7.3% (n=6) participants selecting occasionally for medical condition, no one selecting Rarely for medical condition.

4.3.5 Lost interest

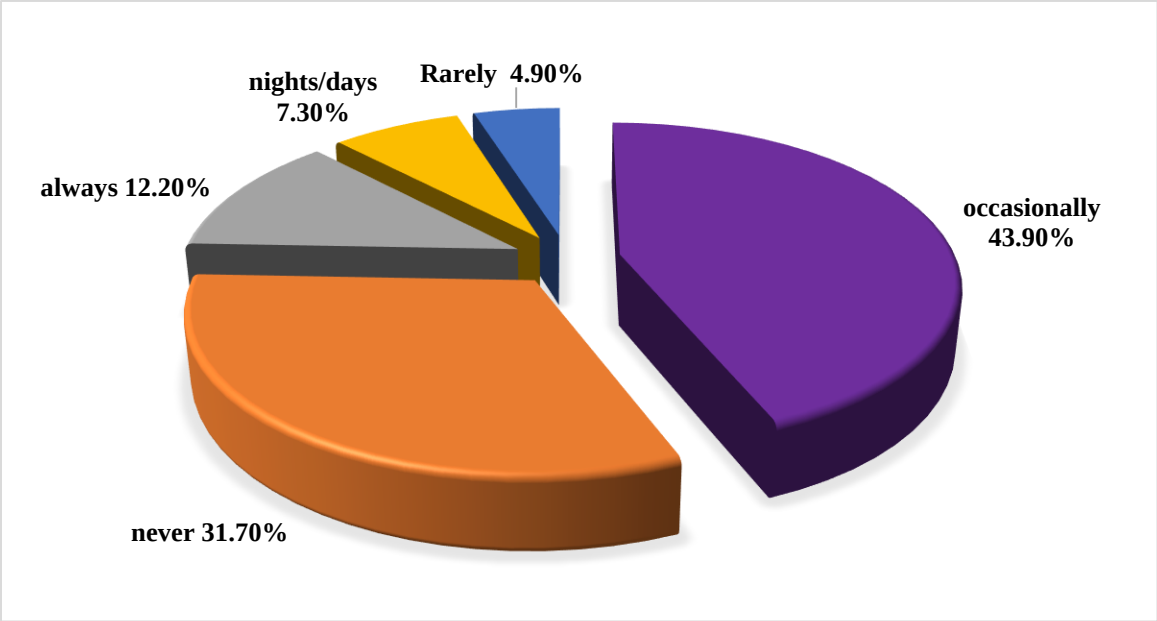


Figure-11: Lost interest

Among the total Sleep disorders patients of this study was found that about 35.4% (n=29) participants selecting never for interest, about 26.8% (n=22) participants selecting occasionally for interest, about 23.2% (n=19) participants selecting Rarely for interest, about 9.8% (n=8) participants selecting always for interest, about 4.9% (n=4) participants selecting most nights/days for interest.

4.3.6 Sad feeling:

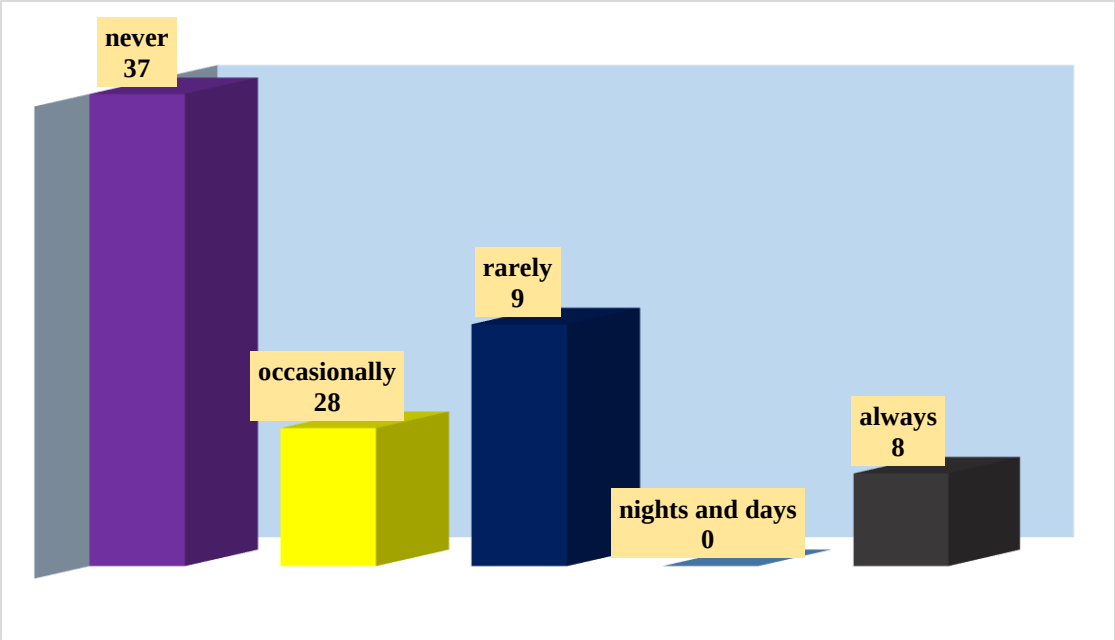


Figure-12: Sad feeling of participants

In this study it was found that about 50% (n=37) participants selecting never for sad feeling, about 26.6% (n=28) participants selecting occasionally for sad feeling, about 14.6% (n=9) participants selecting Rarely for sad feeling, about 9.8% (n=8) participants selecting always for sad feeling, no one selecting most nights/days for sad feeling.

4.3.7 Nervous feeling

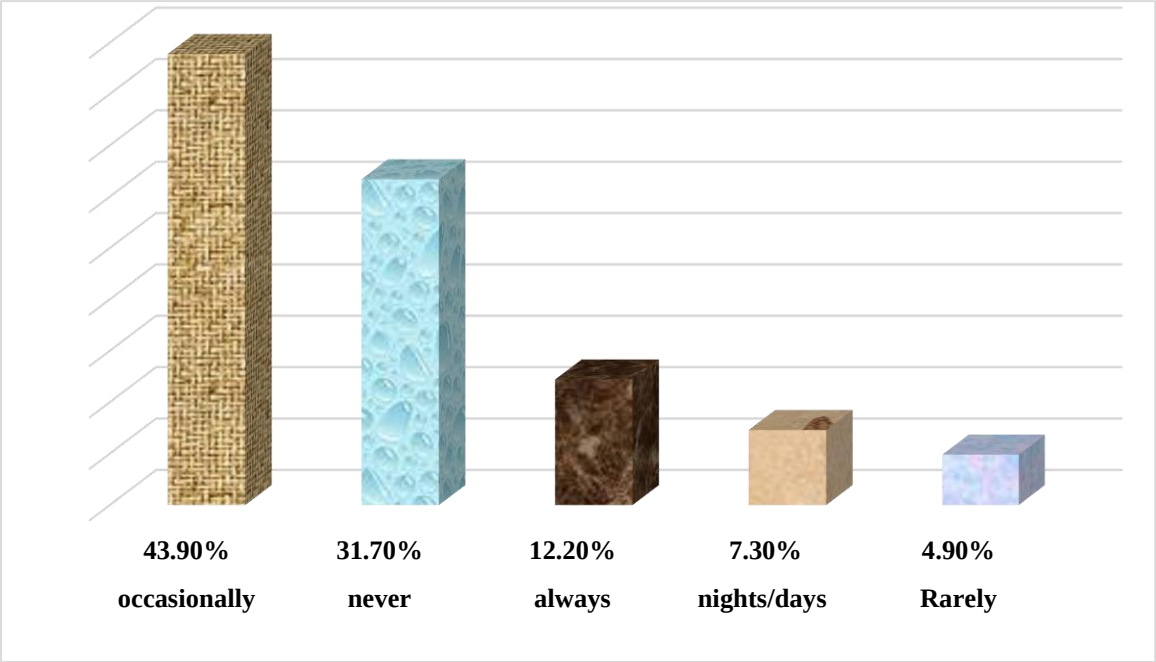


Figure-13: Nervous feeling

In this study it was found that about 45.1% (n=37) participants selecting never for nervous feeling, about 34.1% (n=28) participants selecting occasionally for nervous feeling, about 11% (n=9) participants selecting Rarely for nervous feeling, about 9.8% (n=8) participants selecting always for nervous feeling. No one selecting most nights/days for nervous feeling.

4.3.8 Shift worker:

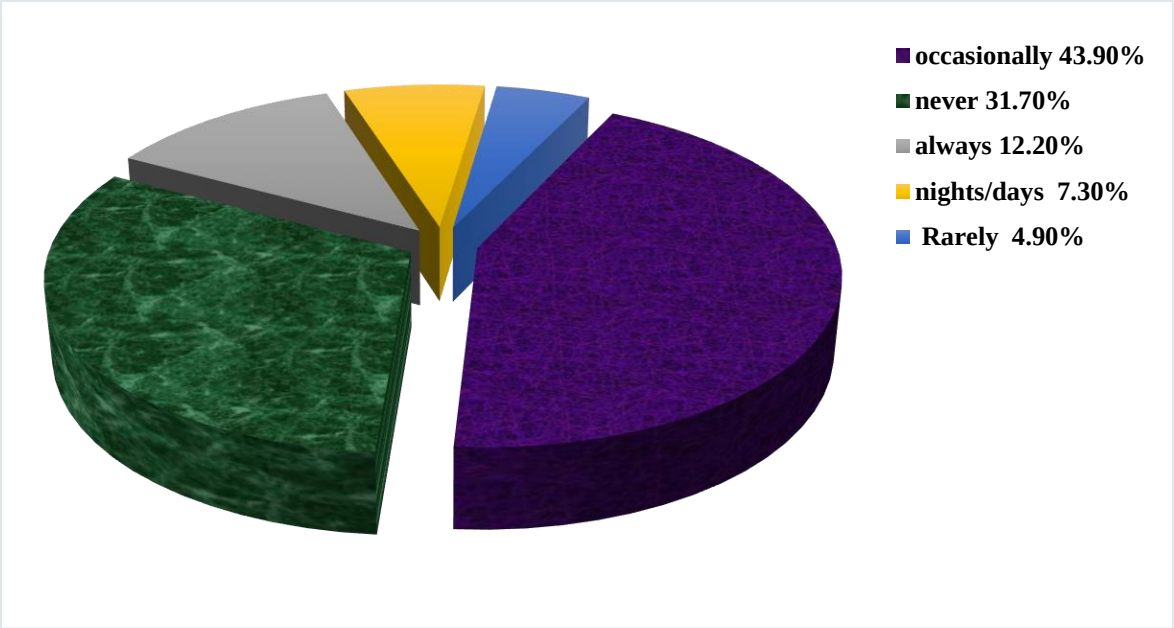


Figure-14: Shift workers

In this study it was found that about 43.9% (n=36) participants selecting occasionally for shift working, about 31.7% (n=26) participants selecting never for shift working, about 12.2% (n=10) participants selecting always for shift working, about 7.3% (n=6) participants selecting most nights/days for shift working, about 4.9% (n=4) participants selecting Rarely for shift working.

4.3.9 Stop breathing:

In this study it was found that about 78% (n=64) participants selecting never for stop breathing, about 22% (n=18) participants selecting occasionally for stop breathing, no one selecting Rarely for stop breathing, no one selecting most nights/days for stop breathing, no one selecting always for stop breathing.

Table 03:

Variable	Frequency	Percentage
Never	64	78%
Occasionally	18	22%

4.3.10 Restless leg:

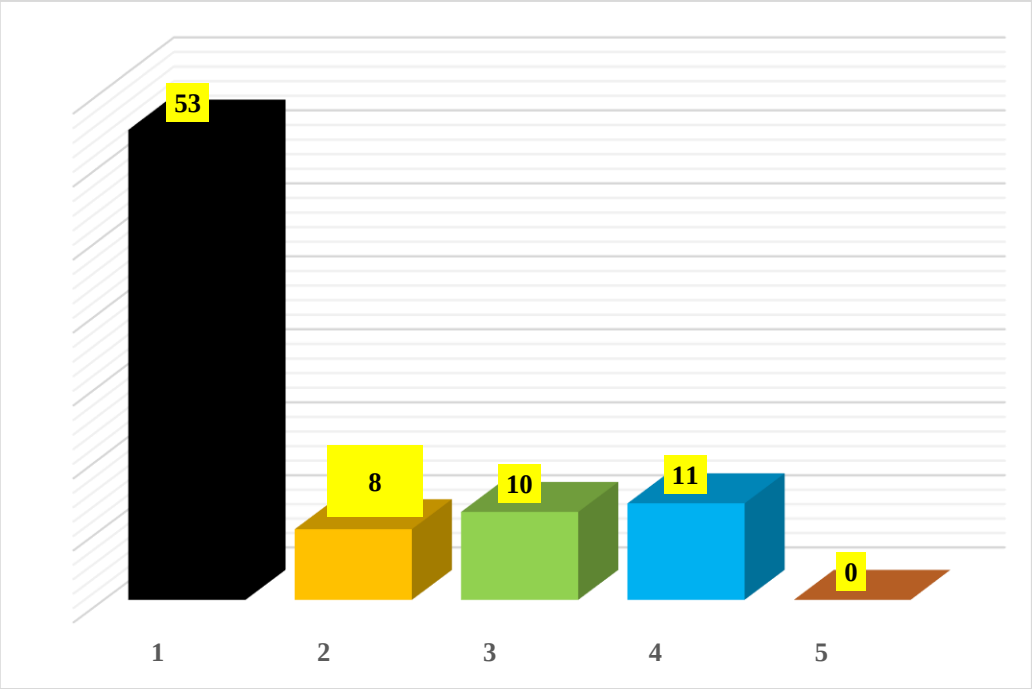


Figure-15: legs restless

In this study it was found that about 64.6% (n=53) participants selecting never for restless leg, about 13.4% (n=11) participants selecting most nights/days for restless leg, about 12.2% (n=10) participants selecting occasionally for restless leg, about 9.8% (n=8) participants selecting Rarely for restless leg, no one selecting always for restless leg.

4.3.11 Day time awake:

In this study it was found that about 53.7% (n=44) participants selecting occasionally for day time awake, about 42.7% (n=35) participants selecting never for day time awake, about 3.7% (n=3) participants selecting most nights/days for day time awake, no one selecting Rarely, no one selecting always for day time awake.

Table 04:

Variable	Frequency	Percentage
Never	35	42.7%
Occasionally	44	53.7%
Most Nights/Days	3	3.7%

4.3.12 Unusual behaviors:

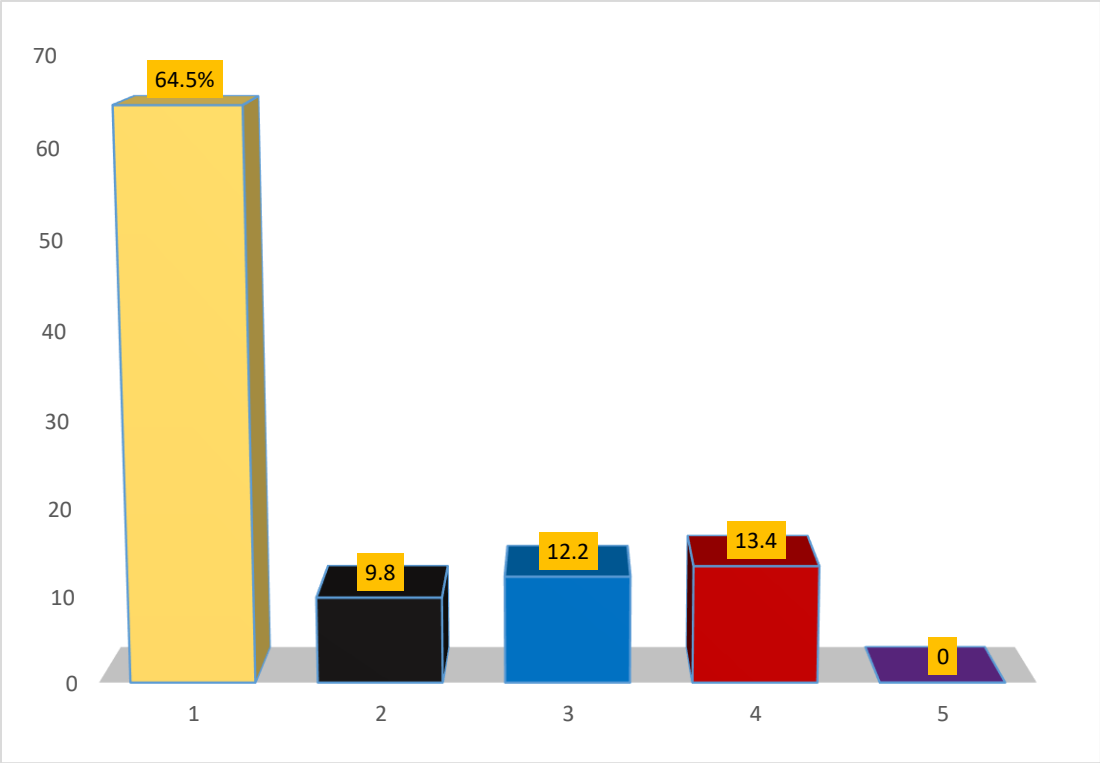


Figure-16: Unusual behaviors

In this study it was found that about 64.6% (n=53) participants selecting never for unusual behaviors, about 13.4% (n=11) participants selecting most nights/days for unusual behaviors, about 12.2% (n=10) participants selecting occasionally for unusual behaviors, about 9.8% (n=8) participants selecting Rarely for unusual behaviors, no one selecting always for unusual behaviors.

4.3.13 Table 05: Sleep disorders part

This table contains different variables such as Do you have trouble falling asleep, Do you have trouble staying asleep , Do you take anything to help you sleep , Do you use alcohol to help you sleep, Do you have any medical conditions that disrupt your sleep, Have you lost interest in hobbies or activities, Do you feel sad, irritable, or hopeless, Do you feel nervous or worried , Do you think something is wrong with your body , Are you a shift worker or is your sleep schedule irregular , Are your legs restless and/or uncomfortable before bed , Have you been told that you are restless or that you kick your legs in your sleep , Do you have any unusual behaviours or movements during sleep , Do you snore , Has anyone said that you stop breathing, gasp, snort, or choke in your sleep , Do you have difficulty staying awake during the day these are described frequency, percentage

Table 05: Sleep disorders related chart with frequency, percentage:

Variable	Category	Description of data(Frequency,%)
Do you have trouble falling asleep?	Ordinal	23(28%)Never, 11(13.4%)Occasionally, 35(42.4%) Most Nights/Days, 13(15.9%) Always;
Do you have trouble staying asleep?	Ordinal	26(13.7%)Never, 5(6.1%)Rarely, 18(22%)Occasionally, 27(32.9%) Most Nights/Days, 6(7.3%) Always;
Do you take anything to help you sleep?	Ordinal	38(46.3%) Never, 1(1.2%) Rarely, 34(41.5%) Most Nights/Days, 9(11%) Always;
Do you use alcohol to help you sleep?	Ordinal	82(100%) Never;

Do you have any medical conditions that disrupt your sleep?	Ordinal	34(41.5%) Never, 6(7.3%) Occasionally, 13(15.9%) Most Nights/Days, 29(35.4%) Always;
Have you lost interest in hobbies or activities?	Ordinal	29(35.4%)Never, 19(23.2%)Rarely, 22(26.8%)Occasionally, 4(4.9%) Most Nights/Days, 8(9.8%) Always;
Do you feel sad, irritable, or hopeless?	Ordinal	41(50%) Never, 12(14.6%) Rarely, 21(25.6%)Occasionally, 8(9.8%) Always;
Do you feel nervous or worried?	Ordinal	37(45.1%) Never, 9(11%) Rarely, 28(34.1%) Occasionally, 8(9.8%) Always;
Do you think something is wrong with your body?	Ordinal	41(50%) Never, 4(4.9%) Rarely, 34(41.5%) Occasionally, 3(3.7%) Always;
Are you a shift worker or is your sleep schedule irregular?	Ordinal	26(31.7) Never, 4(4.9%) Rarely, 36(43.9%) Occasionally, 6(7.3%) Most Nights/Days, 10(12.2%) Always;
Are your legs restless and/or uncomfortable before bed?	Ordinal	53(64.6%) Never, 8(9.8%) Rarely, 10(12.2%) Occasionally, 11(13.4%) Most Nights/Days;

Have you been told that you are restless or that you kick your legs in your sleep?	Ordinal	53(64.6%) Never, 8(9.8%) Rarely,10(12.2%) Occasionally, 11(13.4%) Most Nights/Days;
Do you have any unusual behaviours or movements during sleep?	Ordinal	53(64.6%) Never, 8(9.8%) Rarely, 10(12.2%) Occasionally, 11(13.4%) Most Nights/Days;
Do you snore?	Ordinal	69(84.1%) Never, 13(15.9%) Occasionally;
Stop breathing, gasp, snort, or choke in your sleep?	Ordinal	64(78%) Never, 18(22%) Occasionally;
Difficulty staying awake during the day?	Ordinal	35(42.7%) Never, 44(53.7%) Occasionally, 3(3.7%) Most Nights/Days

4.3.14 Sleep disorders characteristics

The table above shows a total of 82 participants Among the 82 participants 28%(n=23) participants were never graded,0%(n=0) participants were Rarely graded, 13.4%(n=11) participants were Occasionally graded,42.4%(n=35) participants were Most Nights/Days graded and 15.9%(n=13) participants were Always graded for trouble feeling, 13.7%(n=26) participants were never graded,6.1%(n=5) participants were Rarely graded, 22%(n=18) participants were Occasionally graded,32.9%(n=27) participants were Most Nights/Days graded and 7.3%(n=6) participants were Always graded for trouble staying asleep, 46.3%(n=38) participants were never graded,1.2%(n=1) participants were Rarely graded, 0%(n=0) participants were Occasionally graded,41.5%(n=34) participants were Most Nights/Days graded and 11%(n=9) participants were Always graded for Take sedative drug for sleep. 100%(n=80) participants were never graded for alcohol, 41.5%(n=34) participants were never graded,0%(n=0) participants were Rarely graded, 7.3%(n=6) participants were Occasionally graded,15.9%(n=13) participants were Most Nights/Days graded and 35.4%(n=29) participants were Always graded for medical conditions, 35.4%(n=29) participants were never graded,23.2%(n=19) participants were Rarely graded, 26.8%(n=22) participants were Occasionally graded,4.9%(n=4) participants were Most Nights/Days graded and 9.8%(n=8) participants were Always graded for lost interest, 50%(n=41) participants were never graded,14.6%(n=12) participants were Rarely graded, 25.6%(n=21) participants were Occasionally graded,0%(n=0) participants were Most Nights/Days graded and 9.8%(n=8) participants were Always graded for feeling sad, 45.1%(n=37) participants were never graded,11%(n=9) participants were Rarely graded, 34.1%(n=28) participants were Occasionally graded,0%(n=0) participants were Most Nights/Days graded and 9.8%(n=8) participants were Always graded for feeling nervous, 50%(n=41) participants were never graded,4.9%(n=4) participants were Rarely graded, 41.5%(n=34) participants were Occasionally graded,0%(n=0) participants were Most Nights/Days graded and 3.7%(n=3) participants were Always graded for wrong thinking for body, 31.7%(n=26) participants were never graded,4.9%(n=4) participants were Rarely graded, 43.9%(n=36) participants were Occasionally graded,7.3%(n=6) participants were Most Nights/Days graded and 12.2%(n=10) participants were Always graded for shift worker, 64.6%(n=56) participants

were never graded,9.8%(n=8) participants were Rarely graded, 12.2%(n=10) participants were Occasionally graded,13.4%(n=16) participants were Most Nights/Days graded and 0%(n=0) participants were Always graded for restless leg, 64.6%(n=56) participants were never graded,9.8%(n=8) participants were Rarely graded, 12.2%(n=10) participants were Occasionally graded,13.4%(n=11) participants were Most Nights/Days graded and 0%(n=0) participants were Always graded for 12st question, 64.6%(n=56) participants were never graded,9.8%(n=8) participants were Rarely graded, 12.2%(n=10) participants were Occasionally graded,13.4%(n=11) participants were Most Nights/Days graded and 0%(n=0) participants were Always graded for unusual behaviors,84.1%(n=64) participants were never graded,0%(n=0) participants were Rarely graded, 22%(n=18) participants were Occasionally graded,0%(n=0) participants were Most Nights/Days graded and 0%(n=0) participants were Always graded for snore, ,78%(n=64) participants were never graded,0%(n=0) participants were Rarely graded, 22%(n=18) participants were Occasionally graded,0%(n=0) participants were Most Nights/Days graded and 0%(n=0) participants were Always graded for 15st question and ,42.7%(n=35) participants were never graded,0%(n=0) participants were Rarely graded, 53.7%(n=44) participants were Occasionally graded,3.7%(n=3) participants were Most Nights/Days graded and 0%(n=0) participants were Always graded for difficulty staying awake during the day.(table -2)

CHAPTER-V DISCUSSION

This was cross sectional study to evaluation between sociodemographic and sleep disorders of older people. The purpose of the study was to evaluate the sleep disorders among elderly people at old home. Age, gender, living area, educational status, occupational status, and other independent variables were taking to consideration as socio-demographic variables.

In the case of age, the most participants were attended from 60-90 age groups. Among 82 of participants 78.8%(n=63) participants were in 60-69 age group, 19.5%(n=16) participants were in 70-79 age group and 3.7%(n=3) participants were in 80-90 age group. In the other hand the most participants were male and there was 51.2%(n=42) participants who was male and 48.8%(n=40) participants who was female.in the case of educational level of the participants in this study found that the most participants had the master's education and it was about 48.8%(n=40) of the subject. Among the rest participants 8.5%(n=7) participants were illiterate,8.5%(n=7) participants had primary education, 4.9%(n=4) participants had secondary education, 7.3%(n=6) participants had higher secondary education and 22.0%(n=18) participants were Graduate. A relevant research which was done among the population of Bangladesh showed that The majority of older people (85.4%) were between the ages of 60 and 70. 50.4 % were men and 49.60 % were women. The majority (80.0 %) were married, and 55.0 % were illiterate. The vast majority (82.9 %) were employed. 53.2 % lived in a nuclear family, and exactly half reported a monthly income of between 3,100 and 10,000 Taka. Almost all (98.60 %) of the elderly reported having diseases. Marital status (f=16.84, p=.000), education level (f=20.55, p=.000), family type (f=15.44, p=.000), and income (f=33.10, p=.000) were also found to be significant factors linked to older people's sleep problems scores. However, age (f=.704, p=.402), gender (f=2.08, p.150), employment status (f=1.63, p=.203), and diseases (f=3.27, p=.072) were found to be non-significant (Uddin,2017).

In the case of occupation of the participants, the most participants were govt Employee and it was 31.7%(n=26) of the subject. The following major occupation showed that 24.4%(n=20) participants were teacher,17.1%(n=14) participants had others, 14.6%(n=12) participants had house wife, 7.3%(n=6) participants had business man 4.9%(n=4) participants were farmer and 0%(n=0) participants were day labor. On the other hand, most participants lived in urban area (n=55) occupying 67.1% of the subjects while 20.7%(n=17) participants lived in semi urban areas and 12.2%(n=10) participants lived in rural areas.

A relevant research which was done among the population of Denizli city centre showed that the 360 older adult subjects had a mean age of 69.52±8.36 years old, 60.0% were women, 68.1% were married, 48.6% had graduated from elementary school, 70.8% had an income level equal to their expenses, 49.2% lived with only their spouse and 56.1% had a moderate perception of their health (Korkmaz Aslan et al.,2019).

Among the total Sleep disorders patients of this study was found that about 46.3% (n=38) participants selecting never for sedative drug, about 41.5% (n=34) participants selecting most nights/days for sedative drug, about 1.2% (n=1) participants selecting Rarely for sedative drug, about 11% (n=9) participants selecting always for sedative drug. No one selecting occasionally for sedative drug. A relevant research which was done among the population of Denizli city centre showed that 45.0% took more than one medication regularly, and 56.1% had a moderate perception of their health (Korkmaz Aslan et al.,2019).

Among the total Sleep disorders patients of this study was found that about 41.5% (n=34) participants selecting never for medical condition, about 35.4% (n=29) participants selecting always for medical condition, about 15.9% (n=13) participants selecting most nights/days for medical condition, about 7.3% (n=6) participants selecting occasionally for medical condition, no one selecting Rarely for medical condition. A relevant research which was done among the population of Denizli city centre showed that Among the total Sleep disorders patients of this study was found that about 40.8% had at least one chronic disease (aslan et al.,2019). Almost all (98.60 %) of the elderly reported having diseases in other research (Uddin, 2017).

Outcome show that 71% (n=59) participants out of 82 participants have suffered from sleep disorders and 28% (n=23) participants had not been suffered from sleep disorders. Other Outcome show that 71%(n=59) participants out of 82 participants have suffered from insomnia, 18%(n=15) participants out of 82 participants have suffered from Psychiatric Disorders, 12%(n=10) participants out of 82 participants have suffered from Circadian Rhythm Disorder, 13%(n=11) participants out of 82 participants have suffered from Movement disorders, 35%(n=29) participants out of 82 participants have suffered from Parasomnias, 2%(n=2) participants out of 82 participants have suffered from sleep apnea. A relevant research showed that Almost all (87.9%) older people reported having severe sleep problems, 10.4% reported having sleep problems. Only 1.80% reported no sleep problems (Uddin, 2017).

A relevant research showed that the prevalence of insomnia in the general population has been estimated at 10% to 20%, studies in older adults have found higher frequencies. In a study of more than 9,000 adults aged 65 and older, 42% of participants had difficulty falling asleep and staying asleep, with a higher prevalence found in older adults with poor health and who were taking medications for a variety of medical problems.24 Participants who were depressed were 2.5 times as likely to report insomnia, and those with respiratory symptoms were 40% more likely to do so. The finding that a considerable proportion of sleep complaints in older people may be associated with chronic disease and other health problems is corroborated in other reports (Bloom et al., 2009).

In this study it was found that about 64.6% (n=53) participants selecting never for restless leg, about 13.4% (n=11) participants selecting most nights/days for restless leg, about 12.2% (n=10) participants selecting occasionally for restless leg, about 9.8% (n=8) participants selecting Rarely for restless leg, no one selecting always for restless leg .A relevant research showed that Restless legs syndrome is common in older people, with an estimated prevalence of 10%–35% among those over 65 years of age.23 Unlike periodic leg-movement disorder, it has a female predominance.24 The majority of patients with restless legs also have periodic leg movements, but only about a quarter of patients with a

diagnosis of periodic leg movements also have restless legs syndrome (Wolkove et al., 2007).

In this study it was found that about 42.4% (n=35) participants selecting most nights/days, 28% (n=23) participants selecting never, about 13.4% (n=11) participants selecting occasionally, about, about 15.9% (n=13) participants selecting always, about 0% (n=0) participants selecting Rarely. A relevant research showed that Most of the 35.5% of patients who had difficulty falling asleep were women (Tufan et al.,2017)

A relevant research showed that the prevalence of sleep disorders and symptoms. Insomnia, risk of SDB, habitual snoring, EDS and RLS were reported by 15.3%, 13.7%, 9.6%, 5.4% and 5.2%, respectively. All the sleep complaints increased with age, except for insomnia. Insomnia prevalence among women increased with age. In the analysis stratified for age groups; sleep complaints, except for EDS and habitual snoring, were more common among women than men (Demir et al.,2015)

LIMITATION OF THE STUDY:

The researcher faced some limitation while conducting the research project.

The main limitation of this study was its short duration. The study was conducted with 82 elderly people which was a very small number of samples The result of the study cannot be generalized to the whole population of Old homes in Bangladesh as the samples were collected only from two old homes in Dhaka city.

CHAPTER-VI CONCLUSION & RECOMMENDATION

6.1 Conclusion:

The goal of this study was to identify the Sleep disorders among Elderly people at Old Home. At the end of the study, it was found that Insomnia, Psychiatric Disorders, Movement disorders, and Sleep Apnea was the highest type of sleep disorders complained. Also shows the relationship between sleep disorders with socio-demographic factors like age, gender, area, and previous occupation. The result of this study would help in preventing Sleep disorders in Elderly people.

6.2 Recommendations:

The aim of this study was to identify the Sleep disorders among Elderly people at Old Home and the result which found from the study has fulfilled the aim of this research project. The following recommendations are-

Should take more samples for generating the result and make more valid and reliable. Should take more time in conducting this type of study. Sample should collect from all over Bangladesh.

This is an undergraduate study and doing the same study at graduate level will give more precise output. There were some limitations of this study mentioned at the relevant section; it is recommended to overcome those limitations during further study. So for further study, it was strongly recommended to include Elderly people with sleep disorders from all over Bangladesh.

REFERENCES

Abd Allah, E.S., Abdel-Aziz, H.R. and El-Seoud, A.R.A., (2014). Insomnia: Prevalence, risk factors, and its effect on quality of life among elderly in Zagazig City, Egypt. Journal of nursing education and practice, 4(8):52.

Ancoli-Israel, S. and Ayalon, L., (2006). Diagnosis and treatment of sleep disorders in older adults. The American journal of geriatric psychiatry, 14(2):95-103.

Aragón-Arreola, J.F., Moreno-Villegas, C.A., Armienta-Rojas, D.A. and Alberto, K., (2016). An insight of sleep disorders in Africa. Eneurologicalsci, 3:37-40.

Azad India foundation: An organization committed to the overall development of rural India, (2010). The problem of old age in India, Kishanganj. http://www.azadindia.org/social-issues/problem-of-old-age-in-india.html Retrieved from.

Bloom, H.G., Ahmed, I., Alessi, C.A., Ancoli-Israel, S., Buysse, D.J., Kryger, M.H., Phillips, B.A., Thorpy, M.J., Vitiello, M.V. and Zee, P.C., (2009). Evidence-based recommendations for the assessment and management of sleep disorders in older persons. Journal of the American Geriatrics Society, 57(5):761-789.

Bloom, H.G., Ahmed, I., Alessi, C.A., Ancoli-Israel, S., Buysse, D.J., Kryger, M.H., Phillips, B.A., Thorpy, M.J., Vitiello, M.V. and Zee, P.C., (2009). Evidence-based recommendations for the assessment and management of sleep disorders in older persons. Journal of the American Geriatrics Society, 57(5):761-789.

Bombois, S., Derambure, P., Pasquier, F. and Monaca, C.(2010). Sleep disorders in aging and dementia. The journal of nutrition, health & aging, 14(3):212-217.

Brewster, G.S., Riegel, B. and Gehrman, P.R., (2018). Insomnia in the older adult. Sleep medicine clinics, 13(1):13-19.

Cassidy-Eagle, E.L., Siebern, A., Chen, H., Kim, H.M. and Palesh, O.,(2022). Cognitive-Behavioral Therapy for Insomnia in Older Adults. Cognitive and Behavioral Practice, 29(1):146-160.

Cho, H.J., Lavretsky, H., Olmstead, R., Levin, M.J., Oxman, M.N. and Irwin, M.R., (2008). Sleep disturbance and depression recurrence in community-dwelling older adults: a prospective study. American Journal of Psychiatry, 165(12):1543-1550.

Cochen, V., Arbus, C., Soto, M.E., Villars, H., Tiberge, M., Montemayor, T., Hein, C., Veccherini, M.F., Onen, S.H., Ghorayeb, I. and Verny, M., (2009). Sleep disorders and their impacts on healthy, dependent, and frail older adults. JNHA-The Journal of Nutrition, Health and Aging, 13(4):322-329.

Costa, S.V.D., Ceolim, M.F. and Neri, A.L., (2011). Sleep problems and social support: Frailty in a Brazilian Elderly Multicenter Study. Revista Latino-Americana de Enfermagem, 19:920-927.

Cybulski, M., Cybulski, L., Krajewska-Kulak, E., Orzechowska, M., Cwalina, U. and Kowalczuk, K., (2019). Sleep disorders among educationally active elderly people in Bialystok, Poland: A cross-sectional study. BMC geriatrics, 19(1):1-8.

Demir, A.U., Ardic, S., Firat, H., Karadeniz, D., Aksu, M., Ucar, Z.Z., Sevim, S., Ozgen, F., Yilmaz, H., Itil, O. and Peker, Y., (2015). Prevalence of sleep disorders in the Turkish adult population epidemiology of sleep study. Sleep and Biological Rhythms, 13(4):298-308.

Duffy, J.F., Zitting, K.M. and Chinoy, E.D., 2015. Aging and circadian rhythms. Sleep medicine clinics, 10(4):423-434.

Dzierzewski, J.M., Rodríguez, J.C. and Alessi, C., (2022). Sleep Disorders. Reichel's Care of the Elderly: Clinical Aspects of Aging :235.

Ensrud, K.E., Blackwell, T.L., Redline, S., Ancoli-Israel, S., Paudel, M.L., Cawthon, P.M., Dam, T.T.L., Barrett-Connor, E., Leung, P.C., Stone, K.L. and Osteoporotic Fractures in Men Study Group, (2009). Sleep disturbances and frailty status in older

community-dwelling men. Journal of the American Geriatrics Society, 57(11):2085-2093.

Fok, M., Stewart, R., Besset, A., Ritchie, K. and Prince, M., (2010). Incidence and persistence of sleep complaints in a community older population. International journal of geriatric psychiatry, 25(1):37-45.

Giebultowicz, J.M. and Long, D.M., (2015). Aging and circadian rhythms. Current opinion in insect science, 7:82-86.

Gulia, K.K. and Kumar, V.M.,(2018). Sleep disorders in the elderly: a growing challenge. Psychogeriatrics, 18(3):155-165.

Korkmaz Aslan, G., İncİ, F.H. and Kartal, A., (2020). The prevalence of insomnia and its risk factors among older adults in a city in Turkey's Aegean Region. Psychogeriatrics, 20(1):111-117.

Korkmaz Aslan, G., İncİ, F.H. and Kartal, A., (2020). The prevalence of insomnia and its risk factors among older adults in a city in Turkey's Aegean Region. Psychogeriatrics, 20(1):111-117.

Krishnan, P.V., Vadivu, A.S., Alappatt, A. and Kameswaran, M., (2012). Prevalence of sleep abnormalities and their association among hypothyroid patients in an Indian population. Sleep Medicine, 13(10):1232-1237.

Luyster, F.S., Choi, J., Yeh, C.H., Imes, C.C., Johansson, A.E. and Chasens, E.R., (2015). Screening and evaluation tools for sleep disorders in older adults. Applied Nursing Research, 28(4):334-340.

Neikrug, A.B. and Ancoli-Israel, S., (2010). Sleep disorders in the older adult–a mini-review. Gerontology, 56(2):181-189.

Partinen, M., (2011). Epidemiology of sleep disorders. Handbook of clinical neurology, 98:275-314.

Praharaj, S.K., Gupta, R. and Gaur, N.,(2018). Clinical practice guideline on management of sleep disorders in the elderly. Indian journal of psychiatry, 60(Suppl 3) :S383.

Roepke, S.K. and Ancoli-Israel, S., (2010). Sleep disorders in the elderly. Indian Journal of Medical Research, 131(2):302.

Roepke, S.K. and Ancoli-Israel, S.,(2010). Sleep disorders in the elderly. Indian Journal of Medical Research, 131(2):302.

Rosa, E.F. and Rustiaty, N., (2018). Affective disorders in the elderly: the risk of sleep disorders. International Journal of Public Health Science, 7(1):33-38.

Santos, A.A.D., Ceolim, M.F. and Neri, A.L.,(2012). Sleep complaints among Brazilian senior citizens from municipalities with different Human Development Indices. Revista Latino-Americana de Enfermagem, 20:917-926.

Štefan, L.; Sporiš, G.; Kristic˘evic´, T.; Knjaz, D. Associations between sleep quality and its domains and insufficient physical activity in a large sample of Croatian young adults: A cross-sectional study. BMJ Open (2018), 8, e021902. [CrossRef] [PubMed]

Suzuki, K., Miyamoto, M. and Hirata, K., (2017). Sleep disorders in the elderly: Diagnosis and management. Journal of general and family medicine, 18(2) :61-71.

Tatineny, P., Shafi, F., Gohar, A. and Bhat, A., (2020). Sleep in the elderly. Missouri Medicine, 117(5):490.

Tel, H., (2013). Sleep quality and quality of life among the elderly people. Neurology, psychiatry and brain research, 19(1):48-52.

Torabi, S., Shahriari, L., Zahedi, R., Rahmanian, S. and Rahmanian, K., (2012). A survey the prevalence of sleep disorders and their management in the elderly in Jahrom City, 2008. Journal of Jahrom University of Medical Sciences, 10(4):35-41.

Tufan, A., Ilhan, B., Bahat, G. and Karan, M.A., (2017). An under-diagnosed geriatric syndrome: sleep disorders among older adults. African Health Sciences, 17(2):436-444.

Uddin, M.A., (2017). Sleep problems of older people in Bangladesh. J Ment Disord Treat, 3(143):2.

Uddin, M.A., Soivong, P., Lasuka, D. and Juntasopeepun, P., (2017). Factors related to quality of life among older adults in Bangladesh: A cross sectional survey. Nursing & health sciences, 19(4):518-524.

Wolkove, N., Elkholy, O., Baltzan, M. and Palayew, M., (2007). Sleep and aging: 1. Sleep disorders commonly found in older people. Cmaj, 176(9):1299-1304.

Xie, Z., Chen, F., Li, W.A., Geng, X., Li, C., Meng, X., Feng, Y., Liu, W. and Yu, F., (2017). A review of sleep disorders and melatonin. Neurological research, 39(6):559-565.

APPENDIX-1

Appendix-I(A)

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref: *Date:*

CRP/BHPI/IRB/03/2022/587

07/03/2022

Md. Safayet Hossen
4th Year B.Sc. in Physiotherapy
Session: 2016 – 2017
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the research project proposal **"Sleep Disorders among the Elderly People at Old Home"** by ethics committee.

Dear Md. Safayet Hossen,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator and Prof. Md. Obaidul Haque as thesis supervisor. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Dissertation Proposal
2	Questionnaire (English version)
3	Information sheet & consent form.

The purpose of the study is to find out the sleep disorders among the elderly people at old home. Since the study involves questionnaire that takes maximum 10-15 minutes and have no likelihood of any harm to the participants, the members of the Ethics committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on 12th October, 2021 at BHPI (30th IRB Meeting).

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd, www.crp-bangladesh.org

Appendix-I(B)

The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI), CRP
Savar, Dhaka-1343.Bangladesh

Subject: Application for review and ethical approval.

Dear sir,

With due respect, I am Md. Safayet Hossen, student of final year B.Sc. in Physiotherapy program at Bangladesh Health Professions Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralysed (CRP) under the Faculty of Medicine, University of Dhaka. As per the course curriculum, I have to conduct a research project. My title is "**Sleep Disorders among the Elderly People at Old Home**".I am doing this under the supervision of Prof. Md. Obaidul Haque ,Vice Principal ,BHPI.

The purpose of the study is to find out The Sleep disorders among the elderly people at old home. For this study I need face-to-face interview by using questionnaire to explore the perception of Sleep disorders of older persons at old home in Dhaka city that may take 10-15 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. Data collectors will receive informed consent from all participants and the collected data will be kept confidential.

Therefore, I look forward to having your kind approval for the research project and to start data collection. I can also assure you that I will maintain all the requirements for study.

Sincerely,

Thesis presentation date: 17th October 2021

Md Safayet Hossen Safayet Hossen
Final Year B.Sc. in Physiotherapy
Session: 2016 – 2017,
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Head of Department
B.Sc. in Physiotherapy, BHPI.
Md. Shofiqul Islam
Associate Professor & Head
Department of Physiotherapy
Bangladesh Health Professions Institute, BHPI
CRP, Chapain, Savar, Dhaka-1343

Recommendation from the Supervisor

Prof. Md. Obaidul Haque ,
Vice Principal, BHPI.

10.02.22
Prof. Md. Obaidul Haque
Vice-Principal
BHPI, CRP, Savar, Dhaka

Appendix-II(A)

VERBAL CONSENT FORM

(Please read out to the participant)

Assalamualaikum/Namasker, I am Md. Safayet Hossen, conducting a study for partial fulfillment of Bachelor of Science in Physiotherapy degree from Bangladesh Health Professions Institute (BHPI) under medicine faculty of University of Dhaka. The titled of research project is "Sleep Disorders among Elderly people at old home". I would like to know your some personal and other related information about your problem. This will take approximately 10-15 minutes.

The aim of the study is to determine Sleep Disorders among Elderly people at old home. The study will provide us important information on how many people are suffering from sleep disorders per one hundred people, subsequently possible causes of sleep disorders with also be emerged.

I would like to inform you that this is a purely academic study and obtain information will not be used for any other purpose. I assure you that all your information will be kept confidential.

Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview. If you have any further questions as a participant in this study, you can contact Md.Safayet Hossen (01772324094) or my supervisor,Md.Obaidul Haque (01730059640),Vice principal,BHPI.

Do you have any questions before I start?

So may I have your consent to proceed with the interview?

YES	
NO	

Signature of the participant ……. Date……
Signature of the researcher ……

Appendix-II(B)

মৌখিক অনুমতি পত্র
(অংশগ্রহনকারীকে পড়ে শোনাতে হবে)

আসসালামু আলাইকুম/ নমস্কার, আমার নাম মোঃ সাফায়ত হোসেন, আমি এই গবেষনাটি বাংলাদেশ হেলথ্ প্রফেশনস ইনস্টিটিউট (বি এইচ পি আই), ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধিনে করছি যা আমার ফিজিওথেরাপী স্নাতক কোর্সের আংশিক অধিভূক্ত। যার শিরোনাম হল- " বৃদ্ধাশ্রমে বয়স্ক ব্যক্তিদের মধ্যে ঘুমের রোগ "। আমি এক্ষেত্রে কিছু ব্যক্তিগত এবং আপনার সমস্যা সম্পর্কে আনুষঙ্গিক কিছু তথ্য জানতে চাচ্ছি যা আনুমানিক ১০- ১৫ মিনিট সময় নিবে।

এই গবেষণার লক্ষ বৃদ্ধাশ্রমে বয়স্ক ব্যক্তিদের মধ্যে ঘুমের রোগে্র ব্যাপকতা সম্পর্কে জানা। এই গবেষণা থেকে আমরা কিছু গুরুত্বপূর্ণ তথ্য জানতে পারব যেমন প্রতি একশ জনের মাঝে কত জনের ঘুমের রোগ আছে সাথে ঘুমের রোগে্র কিছু কারণ ও জানতে পারব।

আমি আপনাকে অবগত করছি যে, এটা আমার অধ্যয়নের সাথে সম্পর্কযুক্ত এবং এই তথ্যগুলো অন্যকোন উদ্দেশ্যে ব্যবহৃত হবেনা। আমি আপনাকে আশ্বাস দিচ্ছি যে আপনার সমস্ত তথ্য গোপন রাখা হবে।

এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছাপ্রণোদিত এবং আপনি যে কোন সময় এই অধ্যয়ন থেকে কোন নেতিবাচক ফলাফল ছাড়াই নিজেকে প্রত্যাহার করতে পারবেন। এছাড়াও আপনি যদি চান তবে এই সাক্ষাৎকারের যে কোন প্রশ্নের উত্তর নাও দিতে পারেন যেটা আপনার পছন্দ না।

এই গবেষণায় অংশগ্রহণকারী হিসেবে আপনার যদি আরও কোনো প্রশ্ন থাকে, তাহলে আপনি মোঃ সাফায়েত হোসেন (01772324094) অথবা আমার সুপারভাইজার, মোঃ ওবায়দুল হক (01730059640), ভাইস প্রিন্সিপাল, BHPI-এর সাথে যোগাযোগ করতে পারেন।

এই সাক্ষাৎকার শুরু করার আগে আপনার কি কোন প্রশ্ন আছে?

আমি আপনার অনুমতি নিয়ে এই সাক্ষাৎকার শুরু করতে যাচ্ছি?

হ্যাঁ না

সাক্ষাৎকার প্রদানকারীর স্বাক্ষর..... তারিখ:.....

সাক্ষাৎকার গ্রহনকারীর স্বাক্ষর.....

Appendix-III(A)

Research questionnaire for the cross-sectional study

Title: Sleep Disorders among the Elderly people at old home

Questionnaire Form

Part- I: Socio-demographic Information

1. Name	
2. Age	
3. Gender	I) Male II) Female
4.Adress:	
5. Mobile No	
7. Living area	I) Urban II) Semi urban III)Rural
8. Educational Level:	I)Illiterate II) Primary III) Secondary IV) Higher Secondary V) Graduate VI) Masters
9.Previous occupation	I) Farmer

	II) Day labor III) Teacher IV) House Wife V) Business man VI) Govt Employee VII)Others
10. Offspring	
11. When you came in this Old home:	

Sleep Disorders Questionnaire

Part -II

Grade your answer by circling one number for each of the following questions:

		Grading Scale				
		Never	Rarely	Occasionally	Most Nights/Days	Always
1	Do you have trouble falling asleep?	01	02	03	04	05
2	Do you have trouble staying asleep?	01	02	03	04	05
3	Do you take anything to help you sleep?	01	02	03	04	05
4	Do you use alcohol to help you sleep?	01	02	03	04	05
5	Do you have any medical conditions that disrupt your sleep?	01	02	03	04	05

6	Have you lost interest in hobbies or activities?	01	02	03	04	05
7	Do you feel sad, irritable, or hopeless?	01	02	03	04	05
8	Do you feel nervous or worried?	01	02	03	04	05
9	Do you think something is wrong with your body?	01	02	03	04	05
10	Are you a shift worker or is your sleep schedule irregular?	01	02	03	04	05
11	Are your legs restless and/or uncomfortable before bed?	01	02	03	04	05
12	Have you been told that you are restless or that you kick your legs in your sleep?	01	02	03	04	05
13	Do you have any unusual behaviours or movements during sleep?	01	02	03	04	05
14	Do you snore?	01	02	03	04	05
15	Has anyone said that you	01	02	03	04	05

	stop breathing, gasp, snort, or choke in your sleep?					
16	Do you have difficulty staying awake during the day?	01	02	03	04	05

Appendix-III(B)

পর্ব- ১ : **আর্থ-সামাজিক তথ্য**

১.১	নাম:	
১.২	বয়স	
১.৩	লিঙ্গ	I)পুরুষ II)মহিলা
১.৪	ঠিকানা	
১.৫	মোবাইল নাম্বার	
১.৬	বসবাসের এলাকা	I)শহুরে II) উপশহর III)গ্রামীণ
১.৭	শিক্ষাগত স্তর	I)নিরক্ষর II)প্রাথমিক III) মাধ্যমিক IV) উচ্চ মাধ্যমিক V) স্নাতক VI) মাষ্টার্স
১.৮	পূর্ববর্তী পেশা	I) দিনমজুর II) কৃষক III) শিক্ষক IV) গৃহিণী

		VI) ব্যবসায়ী পুরুষ VII) সরকারি কর্মচারী VIII) অন্যান্য
১.৯	সন্তানসন্ততি	
১.১০	আপনি যখন এই বৃদ্ধাশ্রমে এসেছিলেন:	

পর্ব- ২: **রোগ সম্পর্কিত তথ্য**

নিচের প্রতিটি প্রশ্নের জন্য একটি নম্বর প্রদক্ষিণ করে আপনার উত্তরকে গ্রেড করুন :-

	গ্রেডিং স্কেল				
	কখনই না	কদাচিৎ	মাঝে মাঝে	অধিকাংশ রাত/দিন	সর্বদা
২.১/ আপনার কি ঘুমাতে সমস্যা হয়?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.২/ আপনার ঘুমিয়ে থাকতে সমস্যা হয় ?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.৩/ আপনার ঘুমের জন্য আপনি কি কোন ঔষধ ব্যবহার করেন ?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.৪/ আপনার ঘুমের জন্য আপনি কি অ্যালকোহল ব্যবহার করেন ?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.৫/ আপনার এমন কোন রোগ আছে যার জন্য ঘুমাতে সমস্যা হয় ?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.৬/ আপনি আপনার কাজ কর্মের প্রতি আগ্রহ হারিয়ে ফেলেছেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.৭/ আপনি কি মন খারাপ, খিটখিটে, আশাহীন বোধ করেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫

২.৮/ আপনি কি দুশ্চিন্তায় ভোগেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.৯/ আপনি কি মনে করেন আপনার শরীরে কোন সমস্যা হচ্ছে?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১০/ আপনি কি রুটিন মাফিক ঘুমনে?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১১/ ঘুমানোর আগে আপনার পায়ে কোন সমস্যা অনূভব করেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১২/ আপনাকে কি কেউ বলেছে যে, আপনি ঘুমের মধ্যে পা ছোড়াছোড়ি করেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১৩/ ঘুমের সময় আপনার কি কোন অস্বাভাবিক আচরণ বা নড়াচড়া হয়?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১৪/ আপনি কি নাক ডাকেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১৫/ কেউ কি বলেছে যে, আপনি ঘুমের মধ্যে আপনার শ্বাস বন্ধ হয়ে আসে কিংবা নাক ডাকেন?	০ ১	০ ২	০ ৩	০ ৪	০ ৫
২.১৬/ আপনার কি দিনের বেলা জেগে থাকতে অসুবিধা হয়?	০ ১	০ ২	০ ৩	০ ৪	০ ৫

Appendix-IV(A)

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই)
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)
(The Academic Institute of CRP)
CRP-Chapain, Savar, Dhaka, Tel: 02224445464 , 02224441404, Website: www.bhpi.edu.bd

Date: 28.03.2022

To
The Manager,
Bangladesh Association for the Aged & Institute of Geriatric Medicine
Agargaon, Sher-E-Bangla Nagar, Dhaka.

Subject: *Regarding Data collection for dissertation.*

Greetings from Bangladesh Health Professions Institute (BHPI). I would like to inform you that, BHPI, the Academic Institute of CRP is running B. Sc in Physiotherapy Course, under Faculty of Medicine, University of Dhaka.

According to the content of 4th year of University course curriculum, the students have to do Research and Course work in different topics to develop their skills. Considering the situation, your institute will be the most appropriate place to collect data.

4th year students of BHPI Md. Safayet Hossen would like to collect data in your organization in your convenient time.

We shall remain grateful to you if you could kindly allow us in conducting the placement.

With regards

Md. Shofiqul Islam
Associate Prof. & Head
Dept. of Physiotherapy
BHPI

ডা.মহসীন কবির
ম্যানেজার, প্রবীণ নিবাস
বাংলাদেশ প্রবীণ হিতৈষী সংঘ

Appendix-IV(B)

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই)
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)
(The Academic Institute of CRP)
CRP-Chapain, Savar, Dhaka, Tel: 02224445464 , 02224441404, Website: www.bhpi.edu.bd

Date: 28.03.2022

To
Chief Executive Officer,
Institute for Autistic children & Blind Old home and TN mother Child Hospital,
Chandulia, Boliarpur, Savar, Dhaka.

Subject: *Regarding Data collection for dissertation.*

Greetings from Bangladesh Health Professions Institute (BHPI). I would like to inform you that, BHPI, the Academic Institute of CRP is running B. Sc in Physiotherapy Course, under Faculty of Medicine, University of Dhaka.

According to the content of 4th year of University course curriculum, the students have to do Research and Course work in different topics to develop their skills. Considering the situation, your institute will be the most appropriate place to collect data.

4th year students of BHPI Md. Safayet Hossen would like to collect data in your organization in your convenient time.

We shall remain grateful to you if you could kindly allow us in conducting the placement.

With regards

Shofiq

Md. Shofiqul Islam
Associate Prof. & Head
Dept. of Physiotherapy
BHPI

Approved
6/5/22