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Sleep and Adolescent Nursing Students

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Abstract: ***Sleep plays a vital role in maintaining the equilibrium of human psychosocial behaviour. The truth about sleep and its need is forgotten most of the time, especially in the adolescent age group. Most undergraduate nursing students belong to the adolescent age group. Amidst their busy schedule loaded with academic and clinical requirements, sleep has lost its importance as basic and primary need. Hence, they face the risk of being affected by various sleep disorders. The most common disorder is sleep deprivation and fatigue associated with sleeplessness. Sleep deprivation in students, presents itself in different ways such as, day time sleepiness, decreased memory, poor academic performance, loss of interest in performing activities and need for frequent naps. Identifying such students and intervening at the right time will enhance their personal and academic performances. This article highlights on the importance of sleep and the problems associated with it in nursing students and how they can be managed effectively through a case scenario.***

Keywords: adolescent, nursing students, sleep, sleep deprivation, sleepiness, coping

1. Introduction

"A good laugh and a long sleep are the best cures in the doctor's book."- author unknown.

Isn't it a truly inspirational quote? Yes, our lives revolve around sleep and 1/3rd of our life is spent on sleeping. All of us look forward to this when we are exhausted working throughout the day. We look forward for the day to end so we can rest our heads and get some sleep. Sleep is a basic need, a universal biological process that is essential to cope with stress, to conserve energy, to prevent fatigue, enhance day time functioning and improve a person's quality of life. Sleep maintains the equilibrium of human psychosocial behaviour. Sleep disorders and deprivation are an unmet public health problem, as reported by Centre for Disease Control and Prevention (CDC) 2014. The need for sleep varies with different age groups. Invariably all age groups love to sleep. Do all of us get the adequate amount of sleep? If we do, is it quality sleep?

The most active and productive age group is the adolescent age group. They are the most vibrant of all age groups and want to make the best use of time. Adolescents are also extremely good in multi - tasking. Most of the time this age group gets away with relatively very less sleep, as they are constantly engaged in one activity after another. This lack of sleep is reflected as change in mood, behaviour pattern, loss of interest, decreased motivation to perform even their daily routines. Studies done on this age group reflect that inadequate sleep in this age group leads to emotional changes and decreased attention span. (Dahl, R. E., 1999). The various reasons for inadequate sleep in adolescence are the intensity of academic life, increased social activities, and age - related traits. These factors could result in sleeping/waking up late and also increased daytime sleepiness. Lack of sleep can lead to psychosocial stress, psychiatric disorders, decreased work effectiveness, and learning disability.

Undergraduate Nursing students mostly belong to this age group and all that is mentioned above are identified in them as well. Nursing is a demanding profession with occupational stress which involves academics, shift duties, and sleep deprivation. Nursing students suffer from sleep abnormalities. The prevalence of poor sleep quality among students is very high and, in nursing students it has been associated with reduced performance, behavioural changes, dietary changes, and even aggressive behaviour due to changes in sleep patterns (Romero - Blanco et al., 2020).

Working as busy as bees, nurses and nursing students often forget that they haven't slept enough for the day. Nursing education unlike other professional educations, requires the students to care for patients as they grow to become a professional nurse. In this process, nursing students perform the role of any regular college student as well as role of a caring nurse. They also have personal needs similar to other adolescents. Undergraduate nursing education continues to be residential programme in many places. This is another important factor that has an effect on the sleep and stress levels of adolescent nursing students. As evidenced by many research studies, nursing students sleep is affected to a greater extent due to the academic, patient care, self - care responsibilities and social life. Sleep is an important factor that affects normal growth, development, health, social relationships and intellectual ability. Hence, the author believed that the concept of 'Sleep and adolescent Nursing students' is the need of the hour. This article discusses about sleep, its importance and promoting proper sleep hygiene among adolescent nursing students. The article also highlights the role of teachers in helping nursing students to manage sleeplessness and be successful.

2. Case Scenario

Ms. Silva is a18 year old nursing student. She belongs to an upper middle - class family. Both her parents are graduates and are working. She has a younger sister. Ms. Silva is a very gentle and composed person. She was found to be hardworking and responsible over the first two months of college life.

After 2 months she was noticed to fail in class tests. She reasoned sickness for the low scores. As this continued, I called her one day to my room and enquired of her change in

performance. She remained quiet for a while and then said "I feel sick every morning and I am not able to concentrate in the class". As I was thinking of the possibilities for her sickness, I recollected that she even sleeps during class hours. I sent her for a medical consult and everything was perfectly alright with her.

Then I enquired with her hostel room - mate Ms. J, as to what was happening to Ms. Silva. Ms. J said that Silva was fine when she joined the hostel. A month back she was gifted a new android phone by her parents. After that Ms. Silva is found to spend long hours with the phone especially late in the night, even upto 1am. She is also found spending time, sitting and chatting with other hostel in - mates late hours in the night, after which she tried studying and doing her assignments.

When I confronted Ms. Silva, she said that she was using the phone even for her studies. She didn't listen to the importance of sleeping on time and getting enough rest. As she was not concentrating on studies, she became quite depressed about herself but could not let go of the time spent on phone or spending more time with friends in the hostel. She also was deprived of sleep as she tried studying early in the mornings without having slept in the night.

After a session of counselling, she had decided to spend time studying in the library and slowly started picking up in her studies. But shestill continued to feel sick in the mornings due to lack of continuous sleep in the night. She had taken many days of leave due to sickness and could not complete her clinical requirements on time. She could not understand classes as she was sleepy. All this stressed her up. She developed severe gastritis and underwent treatment. This problem recurred frequently.

She was repeatedly assessed and followed up with counselling sessions and was also taught to manage her time effectively. Her friends were also counselled and advised to help Ms. Silva by allowing her to have adequate time for her works. I was keeping track of her progress. Finally, she had decided to sleep on time. It was difficult for a few days. She learnt to keep her mind calm half an hour before sleep and also managed her time effectively. Her normal routines set back within a month. Now Ms. Silva is again known as a brilliant and hardworking student.

Sleep:
Earlier in history, sleep was considered as a state of unconsciousness. In the recent past, sleep is considered as an altered state of consciousness in which individual's perception and reaction to the environment is decreased. During sleep an individual experiences decreased physical activity, changes in body's physiological process, variable level of consciousness and decreased response to external stimuli. Sleep is cyclic in nature and it is a complex biological rhythm.

Anatomy of sleep:
Brain is the organ involved with sleep. Significant bodily functions and brain activities take place during sleep. The various parts of the brain function at their own levels to promote and maintain the sleep - wake cycle. The *hypothalamus*, act as a control centre affecting sleep and arousal. The *brain stem*, at the base of the brain, communicates with the hypothalamus to control the transitions between wake and sleep. The *thalamus* acts as a relay for information from the senses to the *cerebral cortex.* During most stages of sleep, the thalamus becomes quiet, but during REM sleep, the thalamus is active, sending the cortex images, sounds, and other sensations that fill our dreams. Release of adenosine from cells in the *basal forebrain* supports the sleep drive.

The biological mechanism of sleep:
1) **Circadian rhythms** - Body's biological clock, which is based on a roughly 24 - hour day, controls most circadian rhythms. Circadian rhythms synchronize with environmental cues such as light and temperature. It also directs fluctuations in wakefulness, body temperature, metabolism, and the release of hormones.
2) **Sleep - wake homeostasis** indicates the need for sleep. The homeostatic sleep drive reminds the body to sleep after a certain time and regulates sleep intensity.

Types of sleep and its significance:
Sleep is classified into rapid eye movement (REM) and non - REM sleep. REM is very similar to an awake state and sleepers are can be easily aroused and most dreaming occurs in this state. Non - REM sleep has four stages. Stages 1 and 2 are considered as light sleep and stages 3 and 4 as the deepest stages of sleep. Stages 3 and 4 are also termed as Slow Wave Sleep (SWS). This stage of sleep is associated with restoration, increases in secretion of growth hormone and immune function changes (Dahl & Lewin 2002).

The sequential hypothesis (SH) states that memories acquired when awake are processed during sleep in two steps occurring during slow wave sleep (SWS) or deep sleep and rapid eye movement (REM) sleep. The memories to be retained are distinguished from unwanted ones which are eliminated. Memories that are processed are stored again during REM sleep integrating them with pre - existing memories. Greater time spent in slow - wave sleep is considered to be more restorative than other sleep stages. Therefore, a staged sleep is essential, especially in adolescents for processing information they acquire throughout the day.

Functions of sleep - adolescence:
Sleep has effects on both the nervous systems and other body structures. Sleep restores normal levels of activity and balance among various body parts. Sleep is essential for protein synthesis and cell division which enables the body to perform its reparative and renewal process. This reparative process that the body performs is vital for the body to function effectively.

There are various hormones that are released during sleep. Growth hormone released during sleep predominantly has an anabolic function, this is responsible for the repair and renewal of epithelial cells and special cells like the neurons. Growth spurts are seen in the adolescent age group. Hence adequate sleep is essential for proper physical and mental growth.

Sleep is necessary to conserve energy since the energy expenditure noted during sleep is less. This allows the biological processes that occur during sleep to be completed at the expenditure of relatively less energy. The adolescent age group is always full of energy. They utilise most of their energy during the day. If in the night the amount of sleep they get is inadequate, they are fatigued when they wake up. Sleep is needed for learning and memory. A good refreshing sleep is also needed for motor skill learning. Adolescent period is a period of transition where students move on from schools to colleges. Most professional colleges demand motor skills, in other words technical skills from their students. A lack of quality sleep may be projected as decreased memory or forgetfulness.

Factors influencing sleep in adolescence:

Sleep in adolescence undergoes changes that are brought about by both biological and psychosocial factors, including changes to hormonal secretion, brain maturation and the homeostatic process. These factors conspire to allow adolescents to stay awake later

- *Biological factors* - include pubertal status of adolescents. Studies have analysed that there is an association between pubertal status and sleep patterns. A study by Knutson (2005) found that there is a gender difference in sleep with increasing pubertal development. It was also found that females had an increased risk of insomnia and felt less rested and tiredness on waking in comparison to males.
- *Stress* – anxiety and stress increase norepinephrine blood levels which in turn causes less deep and REM sleep and frequent awakenings. In adolescent nursing students, the stress related to balancing between professional and personal lives, maintaining grades in academics, exams or tests the following day and completion of time bound assignments may keep them awake for long hours during the night.
- *Stimulants*– Caffeine stimulates the CNS keeping it awake. Researches have proven that adolescents use caffeine for energy, improving their mood and counteract the effects of decreased sleep. Some studies have found that adolescents report using energy drinks to make them feel more energetic and for energy boost.
- *Media*– Media has become an inseparable part of our lives. Adolescents are not an exception to this. They usually enjoy staying up late at night using electronic media to interact with friends. Calamaro et al in their study found that in their study sample 34% of adolescents were text messaging, 44% were talking on the phone, 55% were online, and 24% were playing computer games after 9 am.
- *Night shift work and sleep*– adolescent nursing students who have night shifts in their curriculumhave trouble falling asleep when they go to bed and also have trouble staying awake at work because their natural circadian rhythm and sleep - wake cycle is disrupted. In the case of jet lag, circadian rhythms become out of sync creating a mismatch between their internal clock and the actual clock. Adolescents experience sleep lag, according to Dahl & Lewin (2002) because of the shift between weekend and weekday sleep schedules.
- *Sleep environment* – Involves noise, light, temperature and place where a person sleeps. This can hinder or promote sleep.
- *Diet* – L - tryptophan found in cheese and milk induces sleep. Drinking a glass of milk before bedtime as part of sleep hygiene can be taught to induce sleep.

Smart technology sleep monitoring and sleep studies:

Smart technology informally analyses and records sounds and movements during sleep. It records and analyzes the hours slept, heart beat and respiration. The monitoring is done using smartphone apps, bedside monitors, and wearable items such as bracelets, smart watches, and headbands. Some apps and devices produce light that stimulates melatonin production and use gentle vibrations to help us sleep and wake - up.

Polysomnogram (a combination of electroencephalogram (EEG), electromyogram (EMG) and electrooculogram (EOG)) is performed in sleep study to monitor the sleep to diagnose sleep disorder. It records breathing, oxygen levels, eye and limb movements, heart rate, and brain waves throughout the night. Sleep is video and audio recorded. Results help in treatment plan or to determine the need for further tests.

Sleep disorders:

According to the American Psychiatric Association (2000) a sleep disorder is diagnosed when sleep is disturbed over a period of time which is usually more than one monthandthis disturbance causes significant disruption to daytime activity. According to the American Academy of Sleep Medicine (AASM, 2001) sleep disorders are classified into four groups: parasomnias, dyssomnias, sleep disorders associated with mental, neurological or other medical disorders and proposed sleep disorders.

Most adolescents experience a few of these disorders. Having a knowledge about these and identifying them the common disorders are essential for early interventions especially with regard to nursing students.

A common sleep disorder among adolescent age group is daytime sleepiness. Ohayon et al. (2000) in a study on adolescents from four European countries reported that 20% of them experience day time sleepiness.

Another sleep disorder that adolescents experience is insomnia. Difficulty falling asleep creates anxiety for adolescents when going to bed. This in turn heightens arousal, resulting in decreased ability to fall asleep (Owens 2006). As a result, adolescents experience irregular sleeping patterns making them staying up late each night and sleeping in on weekends to compensate. This is termed as sleep lag. According to Curcio et al. (2006), sleep lag contributes to the development of Delayed Sleep Phase Syndrome (DSPS), as well as waking difficulties.

DSPS is a circadian rhythm disorder that affects 5–10% of adolescents and prevents them from falling asleep at a time that would allow them the hours needed for restoration (Givan 2004, Meltzer & Mindell 2004, 2006).

As explained by Meltzer & Mindell (2006) narcolepsy in adolescence often presents as daytime sleepiness that will evolve to include cataplexy, hypnagogic hallucinations, sleep paralysis and broken sleep, as the adolescent ages into adulthood.

Thomas, C. M., McIntosh, C. E., Lamar, R. A., & Allen, R. L. (2017) in their study on sleep deprivation in nursing students evaluated 179 students and identified that all of them experienced sleep deprivation.

Hershner and Chevin (2014) in their study reported that 50% of college students suffer from daytime sleepiness, and 70% do not get the required amount of sleep. Researchers also found that the sleep abnormalities identified were associated with medical issues like headaches, tiredness, back pain, gastroesophageal reflux, insomnia, and depression as well as lower grades in those with significant lack of sleep.

Causes for inadequate sleep among nursing students:

The term "night owls" fits the adolescent and young adult age group. The reason being the physiological changes in their circadian rhythm due to puberty. They have a preference for later bedtimes and have a lower homeostatic sleep drive. This may result in decreased sleep at night. Hershner & Chervin (2014).

Poor sleep behaviours can be the main cause of inadequate sleep. This includes going to bed late and waking up late, having an improper sleep - wake schedule, use of stimulants like caffeine before bed time and a non - conducive environment to sleep. Stimulants like caffeine are used by students to stay awake to study and increase their concentration. (ArriaAM., 2011)

Use of smart phones and laptops with advanced technology before sleep has become a habit for adolescents that prolongs sleep latency and decreases sleep duration. (Yang et al., 2020)

Dworak et al., (2007) in their study on young adults identified that 57% leave their phone on during sleep, only 33% turn it to silent or vibrate modes.

Playing video game heightens cognitive alertness as proven by magnetic resonance imaging (MRI). (Mathiak K, Weber R., 2006). This means adolescents playing video games before bedtime, stay awake most of the night or the onset of sleep is delayed in them.

Zhang et al. (2021) revealed adolescents who engaged in screen time at bedtime were more likely to have a greater severity of sleep - related impairment.

Johansson (2016) showed, increased technology use and the frequency of being awoken in the night by a cell phone were significantly associated with waking too early, waking unrefreshed, and daytime sleepiness among adolescents.

One of the effects of technology may be to suppress melatonin, resulting in a delay in sleep onset. Hershner & Chervin (2014).

Other factors which cause inadequate sleep among nursing students are class and duty schedules, night shifts, late night chats and phone conversations.

The stress resulting from the need to balance academics and clinical competence, social lives and study time creates an environment which makes students compromise on their sleep time.

The nursing literature highlights that, nurses have more knowledge of sleep, in relation to the patients they care for because of their position as primary caregivers (Cohen et al.1992). But most of the time it is neglected or not taken as an area less important than other health issues.

Effects of inadequate sleep and specific management:

Inadequate or decreased amount of sleep can have both long term and short - term effects. Its manifestations are different with different age groups. In this article we are bringing into focus the nursing students who belong to the adolescent age group. Most common manifestations among this group are extreme fatigue during day time, difficulty waking up in the morning, day time sleepiness in classrooms during class, increased use of caffeinated beverages to stimulate them to stay awake in the class, irritability, anxiousness and anger, sleeping extra - long hours during weekends, poor performance in tests and exams due to short term memory problems, feeling low and depressed, emotional instability, increase in health care problems and poor decision making.

A study done by Kim & Yoon (2013) stated that Sleep deprivation results in psychosocial stress, psychiatric disorders, decreased work effectiveness, and learning disability. Of the 713 students who participated in the study 45% reported headache, 39% tiredness, 27% back pain, 10% symptoms of acid peptic disease, 9%insomnia, 7% depression. They also identified that daytime sleepiness is 11.7% among the nursing students and only 5.8% among the general college students. The result of the study was students with poor sleep quality gave only few hours to study and eventually ended up with poor marks and were more depressed in comparison to their peers.

A study done by Madalena Silva et al.2016 revealed that age, sex, extroversion and positive affect have an inverse relationship with the sleep quality, which is directly correlated with BMI, depression, anxiety, stress, neuroticism, daytime sleepiness and negative affect. The students with poorer sleep quality were found to be female students, aged under 20, living in rural areas without paid work, living alone, receiving study grants, attending the 1st or 2nd year, travelling to school on foot, pre - obese and have daytime sleepiness. The investigators suggested in this study, the implementation of programs that provide cognitive and behavioural interventions for self - regulation of sleep to nursing students which in turn will improve their sleep quality, a determining factor in academic performance and to minimize stress and anxiety states.

Cynthia Thomas et al.2019 stated that cognitive abilities, reaction time, and decision - making are all negatively impacted by lack of sleep and 12 - hour shifts in Nursing students. Nursing students with lack of sleep lack the knowledge that chronic sleep deprivation may result in

personal and patient safety issues when in a clinical or work setting.

Students deprived of sleep were identified to sleep during class hours and also were identified to be below average performers in class. The many reasons that were voiced when asked about the poor performance were, staying up late nights for studying, completing assignments and also using gadgets late night. Therefore, as nurse educators identifying these students and assessing the cause of sleep deprivation will help in early interventions and better performance.

Most often, some effects of decreased sleep go unnoticed. Especially when handling nursing students, most of them present with vague symptoms. Most common is fatigue. In lay terms "tiredness".

When an individual does not get adequate sleep, they may not present as someone deprived of sleep but may complain of extreme fatigue and sleepiness during the day time. Fatigue is not sleepiness. But lack of sleep is one of the reasons for fatigue in Nursing students. Fatigue is said to be persistent exhaustion or weariness that makes it difficult to perform tasks. Mild fatigue is common for everyone. But persistent fatigue can lead to serious problems for nurses causing threat to patients' safety, errors of omission, medication errors, slow reaction time, loss of concentration and attention, inability to convey empathy, poor teamwork and poor - quality of patient care. They may also report of obtaining more sleep during weekends or off days. This is an indication of insufficient sleep during the week days. The effects of obtaining less amount of sleep during the night time in most of the cases is considered benign but in due course of time can have significant delirious effects.

The key points to prevent sleep fatigue that can be adopted by the individual are;

- Prioritizing sleep; going to bed on time and making every effort to get enough sleep.
- Participating in physical activities such as jogging, walking or swimming.
- Keeping a regular eating schedule and eating healthy foods such as whole grains, fruits, nuts, and lean proteins.
- Staying hydrated and avoiding overconsumption of caffeine.
- Maintaining an active social and family life.
- Avoiding medications that can cause drowsiness.
- Taking breaks and lunch in a quiet area, if possible.
- Monitoring personal health for signs of fatigue.
- If fatigued, making an effort to take time off to get refreshed.

The Nurse Educators and Mangers must design the theory and clinical practice schedules in such a way that it reduces the risk of fatigue for the students;

- Limiting changes in the schedule
- Limiting number of days and hours of work in a week
- Adequate tutors/clinical instructors to supervise and monitor the nursing students in the clinical practices
- Scheduling general meetings for the students to express their difficulties that help to investigate the possible role of fatigue.

Encouraging and educating students on sleep hygiene, the need for adequate sleep and the effects of improper sleep may produce positive outcomes in students. Most effective of all has been time management where students learn to manage their time and also make sure they provide adequate time for sleep.

Hershner & Chervin (2014) in their article also encourage sleep courses, scheduling classes at a later time, adequate evaluation and screening for sleep disorders, encouraging naps and making nap rooms available for students.

Tobin (2017) in his study recommends instituting screening procedures for sleep–wake issues and follow - up assessments, particularly overnight pulse oximetry and polysomnograms.

Buxton et al. (2015) explains that sleep is modifiable behaviour for many adolescents. A well - timed, adequate, and restorative sleep is important for optimal maturation.

Enhancing sleep - practicing sleep hygiene:

Practicing proper sleep hygiene and having a fixed sleep schedule as part of a healthy life style can contribute to manage sleep deprivation and enhance sleep. In addition to that proper time management and scheduling to complete all the activities during the day time is effective to acquire adequate rest periods at night. Sleep hygiene includes the following:

- Setting a schedule – going to bed and wakingup at the same time each day.
- Exercising 20 to 30 minutes a day but not before going to bed.
- Avoiding caffeine and nicotine late in the day and alcoholic drinks before bed.
- Relax before bed – try a warm bath, reading, or another relaxing routine.
- Creating a room for sleep – avoid bright lights and loud sounds, keep the room at a comfortable temperature, and don't watch TV or have a computer in the bedroom.
- Not lying awake in the bed, but engaging in some quiet activities, like reading or listening to music, until one feels tired.
- Consulting a doctor ifthe individual has a problem sleeping or feels unusually tired during the day.

Nursing is a career dominated by women. Nursing students go through an intense and exhausting nursing education program that provides theoretical and practical classes together. Hence, it is very hard to avoid stress in academic life with so much to learn and do. The way students perceive stress and the intensity of the stress is unique. Various personal and environmental factors affect sleeping habits. Among such factors, anxiety and stress are common. Nursing students may experience stress with regards to submission of assignments, care notes, case studies, presentations, exams and being away from home. In clinical practice, lack of confidence and fear of making a mistake during clinical practices, approaches of instructors and

clinical nurses and attitudes of patients cause students to experience stress.

To improve the quality of sleep, the students need to be prevented from experiencing stress. The following measures can be adopted, facilitated by the teachers to the Nursing students to help them manage the stress and improve their sleep quality.

- *Developing Professional Competency* – knowing what you do and how to do is a way to develop competence in the profession. Reflecting on what is learned can deepen the knowledge one has. Participating in activities like training courses, workshops, seminars provide means for updating knowledge and thereby build up the confidence in individuals. Competence is what improves self - esteem.
- *Reflection on Stressful Situations* – an effective means to cope with stress is to reflect on the situation. This gives an incite to the cause of the stress, identifying the stressor and adapting coping mechanisms to deal with the stress.
- *Use of Communication Skills in Controlling Stressful Interactions*–effective communication skills are required to handle stress that is caused by interactions in professional or personal life. Strained communication between loved ones can be stressful affecting sleep and other areas of life. Knowing how to communicate, when to communicate and who to approach in each situation can prove effective to control stress arising in various walks of lives.
- *Diversion from the stress and engaging in favourite activities*–involving oneself in hobbies such as painting, gardening or sports to divert from stress has physiologically proven effective. Activities that one likes helps in release of endorphins in the body which improves mood and lowers stress. Research proves that people engaged in hobbies appear less stressed and are able to handle stress better.
- *Practicing Realism*– short term or long - term goals that are set by individuals have to be realistic and achievable. Unrealistic goals can become stressful for students. Taking a day at a time and accomplishing the tasks for that day can boost one's self confidence and prepare them to face the future.
- *Positive Thinking* –the mind is powerful and it has the ability to transform a person into what it thinks it can. Thoughts are the ones that constantly control what the body wants to do. Feeding the mind with positive thoughts like "I can do this", "I know I can make it" etc motivates one to perform to their fullest potential.
- *Deep breathing or resting to reduce the physiological symptoms of stress* – Most people lose themselves when faced with stressful periods. Deep breathing during such times physiologically calms down the body stimulating the parasympathetic nervous system. This promotes a sense of calmness and relieves stress. Resting is essential to undo the physiological effects caused due to stress.
- Releasing Emotions; expressing the stress to others– Finding means to let out the stress can lighten the amount of stress an individual undergoes. Emotionally Focussed Therapy (EFT) concentrates on emotional expression to manage stress. Checking in on the feelings of oneself, admitting what one feels, looking into the positives, being true to the emotions and making introspection a habit can help individuals handle stress.
- *Praying impacts students' perception about the stress* – Praying is a component of spirituality. According to studies spirituality and coping with stress are related. People with strong spiritual values and beliefs are found to cope with stress better in comparison to those with no spiritual values.
- *Training the student for active and positive coping strategies and helping them to eliminate maladaptive coping strategies* – Maladaptive coping to stress is common among individuals who are ignorant about various coping strategies. Teaching and training students to positively and actively cope is the responsibility of every teacher or educator. Positive coping strategies should be taught to the students and they should be encouraged to choose from them.
- *Enhancing a positive approach by instructors and authorities to create a learning environment for students* – Learning environment can be a stressful one for novice learners due to its unfamiliarity. Instructors should be aware of this and create a learning and comfortable environment where students will love to learn.
- *Meeting students often to learn from them their daily routines* – Following up the students who find it difficult to cope, by spending time with them, encouraging them to share their stress filled experiences and jus listening to them can help them cope betterwith their day to day stress.

3. Conclusion

Adoption of some of the strategies mentioned above helped Ms. Silva to cope better and get back to her full potential. Nurses are vital in health care delivery system and Nursing students are an important part of the healthcare team. In addition to the didactic aspect of nursing student education, students also need to complete required clinical experiences in the healthcare organizations. Keeping the quality of sleep intact among nursing students is necessary for maintaining the standard of nursing education and clinical practices. Various factors impact the quality of their sleep. Lack of sleep causes physical, psychological and cognitive impairment in the Nursing students. Nurse Educators and Managers play an important role in identifying the causes for students' sleep deprivation and poor academic performances. Incorporating the strategies mentioned in this article will help the Nursing students overcome the problem and excel in their profession.

References

[1] Arria, A. M., Garnier - Dykstra, L. M., Caldeira, K. M., Vincent, K. B., O'Grady, K. E., & Wish, E. D. (2011). Persistent nonmedical use of prescription stimulants among college students: Possible association with ADHD symptoms. *Journal of attention disorders*, *15* (5), 347 - 356.

[2] Assefa, S. Z., Diaz - Abad, M., Wickwire, E. M., & Scharf, S. M. (2015). The functions of sleep. *AIMS Neuroscience*, *2* (3), 155 - 171.

[3] Berman, A., Snyder, S. J., Kozier, B., Erb, G. L., Levett - Jones, T., Dwyer, T.,. . . & Stanley, D. (2014). *Kozier &Erb's fundamentals of Nursing Australian edition* (Vol.3). Pearson Higher Education AU.

[4] Calamaro, C. J., Mason, T. B., & Ratcliffe, S. J. (2009). Adolescents living the 24/7 lifestyle: effects of caffeine and technology on sleep duration and daytime functioning. *Pediatrics*, *123* (6), e1005 - e1010.

[5] Changes in sleep pattern, sense of time and digital media use during COVID - 19 lockdown in Italy. *Cellini N, Canale N, Mioni G, Costa S J Sleep Res.2020 Aug; 29 (4): e13074.*

[6] Cohen - Mansfield, J., Marx, M. S., & Werner, P. (1992). Agitation in elderly persons: an integrative report of findings in a nursing

[7] home. *International Psychogeriatrics*, *4* (4), 221 - 240.

[8] Dahl, R. E. (1999). The consequences of insufficient sleep for adolescents. *Phi Delta Kappan*, *80* (5), 354 - 359.

[9] Dahl, R. E., & Lewin, D. S. (2002). Pathways to adolescent health sleep regulation and behavior. *Journal of adolescent health*, *31* (6), 175 - 184.

[10] Dworak, M., Schierl, T., Bruns, T., &Strüder, H. K. (2007). Impact of singular excessive computer game and television exposure on sleep patterns and memory performance of school - aged children. *Pediatrics*, *120* (5), 978 - 985.

[11] Giuditta, A. (2014). Sleep memory processing: the sequential hypothesis. *Frontiers in systems neuroscience*, *8*, 219.

[12] https: //www.bsu. edu/news/press - center/archives/2019/5/nursing - students - sleep - deprived - impairing - patient - care

[13] https: //www.ninds. nih. gov/Disorders/Patient - Caregiver - Education/Understanding - Sleep#1

[14] https: //www.waldenu. edu/online - masters - programs/master - of - science - in - nursing/msn - nursing - education/resource/ways - to - prevent - nurse - fatigue - smart - tips - for - anyone - with - a - nursing - degree

[15] https: //www.medindia. net/patients/lifestyleandwellness/hobbies - that - help - you - deal - with - stress. htm

[16] https: //www.healthline. com/health/repressed - emotions#releasing - them

[17] Johansson, A. E., Petrisko, M. A., &Chasens, E. R. (2016). Adolescent Sleep and the Impact of Technology Use Before Sleep on Daytime Function. *Journal of pediatric nursing*, *31* (5), 498–504. https: //doi. org/10.1016/j. pedn.2016.04.004

[18] Knutson, K. L. (2005). Sex differences in the association between sleep and body mass index in adolescents. *The Journal of pediatrics*, *147* (6), 830 - 834.

[19] Madalena Silva et al. / Procedia - Social and Behavioral Sciences 217 (2016) 999 – 1007

[20] McVicar A. Workplacexiuhhgfdsohfi stress in nursing: a literature review. J Adv Nurs.2003 Dec; 44 (6): 633 - 42. doi: 10.1046/j.0309 - 2402.2003.02853. x. PMID: 14651686.

[21] Menon, B., Karishma, H. P., & Mamatha, I. V. (2015). Sleep quality and health complaints among nursing students. *Annals of Indian Academy of Neurology*, *18* (3), 363–364. https: //doi. org/10.4103/0972 - 2327.157252

[22] Owens, J., Adolescent Sleep Working Group, Committee on Adolescence, Au, R., Carskadon, M., Millman, R.,. . . & O'Brien, R. F. (2014). Insufficient sleep in adolescents and young adults: an update on causes and consequences. *Pediatrics*, *134* (3), e921 - e932.

[23] Rafati, F., Nouhi, E., Sabzevari, S., & Dehghan - Nayeri, N. (2017). Coping strategies of nursing students for dealing with stress in clinical setting: A qualitative study. *Electronic physician*, *9* (12), 6120–6128. https: //doi. org/10.19082/6120

[24] resonance imaging study. *Media psychology*, *8* (1), 39 - 60.

[25] Romero - Blanco, C., Rodríguez - Almagro, J., Onieva - Zafra, M. D., Parra - Fernández, M. L., Prado - Laguna, M., & Hernández - Martínez, A. (2020). Sleep Pattern Changes in Nursing Students during the COVID - 19 Lockdown. *International journal of environmental research and public health*, *17* (14), 5222. https: //doi. org/10.3390/ijerph17145222

[26] Sleep behaviours in traditional - age college students: A state of the science review with implications for practice. *Owens H, Christian B, Polivka B J Am Assoc Nurse Pract.2017 Nov; 29 (11): 695 - 703.*

[27] Survey of stress reactions among health care workers involved with the SARS outbreak. *Bai Y, Lin CC, Lin CY, Chen JY, Chue CM, Chou P Psychiatr Serv.2004 Sep; 55 (9): 1055 - 7. .*

[28] Thomas, C. M., Bantz, D. L., & McIntosh, C. E. (2019). Nurse faculty burnout and strategies to avoid it. *Teaching and Learning in Nursing*, *14* (2), 111 - 116.

[29] Thomas, C. M., McIntosh, C. E., Lamar, R. A., & Allen, R. L. (2017). Sleep deprivation in nursing students: The negative impact for quality and safety. *Journal of Nursing Education and Practice*, *7* (5), 87.

[30] Thomas, C. M., McIntosh, C. E., Lamar, R. A., & Allen, R. L. (2017). Sleep deprivation in nursing students: The negative impact for quality and safety. *Journal of Nursing Education and Practice*, *7* (5), 87.

[31] Tokur Kesgin M, Çağlar S. Evaluation of sleep quality and perceived stress of nursing students who are engaged in clinical practice based on their sleeping habits. Eur Res J 2020; 6 (5): 429 - 437. DOI: 10.18621/eurj.508165

[32] Vallido, T., Peters, K., O'Brien, L., & Jackson, D. (2009). Sleep in adolescence: A review of issues for nursing practice. *Journal of Clinical Nursing*, *18* (13), 1819 - 1826.

[33] Weber, R., Ritterfeld, U., & Mathiak, K. (2006). Does playing violent video games induce aggression? Empirical evidence of a functional magnetic

[34] Yang, J., Fu, X., Liao, X., & Li, Y. (2020). Association of problematic smartphone use with poor sleep quality, depression, and anxiety: A systematic review and meta - analysis. *Psychiatry Research*, *284*, 112686.

[35] Yoon, S. J., Long, N. P., Jung, K. H., Kim, H. M., Hong, Y. J., Fang, Z.,. . . & Kwon, S. W. (2019). Systemic and local metabolic alterations in sleep - deprivation - induced stress: a multiplatform mass - spectrometry - based lipidomics and metabolomics

approach. *Journal of proteome research*, *18* (9), 3295 - 3304.

[36] Zhang et al. (2021). Sleep, Anxiety, and Academic Performance: A Study of Adolescents from Public High Schools in China. Front. Psychol., 01 July 2021. https: //doi. org/10.3389/fpsyg.2021.678839