EFFICACY OF BEHAVIOUR INTERVENTION FOR SLEEP RELATED ISSUES IN YOUNG ADULTS

Thesis submitted for partial fulfillment of the degree of

MASTER OF ARTS IN PSYCHOLOGY

Submitted by: Sakshi (862102016)

UNDER THE GUIDANCE OF

Dr. Sarika Alreja

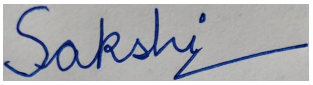
Assistant Professor

School of Liberal arts & Sciences

THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

CERTIFICATE

This is to certify that the dissertation entitled "Efficacy of behaviour intervention for sleep related issues in young adults" being submitted in partial fulfilment of requirements for the award of the degree of Master of Arts in Psychology, to Thapar Institute of Engineering and Technology, Patiala is a record of student work work carried out by her under my guidance and supervision. The report has not been submitted for the award of any other degree or certificate in this or any other university or institute.



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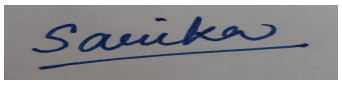

(DR . SARIKA ALREJA)
Assistant Professor,
School of Liberal arts and Sciences
Thapar Institute of Engineering and Technology, Patiala

CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, "Efficacy of behaviour intervention for the sleep related issues in young adults ." in partial fulfilment of the requirement for the award of Degree of Master of Arts in Psychology, submitted in the School of Liberal arts and Sciences, Thapar Institute of Engineering and Technology, Patiala, is an authentic record of my own work carried out under the supervision and guidance of Dr. Sarika Alreja , School of liberal Arts and Sciences, Thapar Institute of Engineering and Technology, Patiala and refers other researchers work which is duly listed in the reference section. The content in the dissertation has not been submitted to any other university or institute for award of any other degree.

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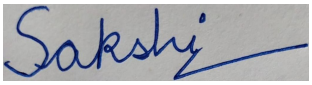

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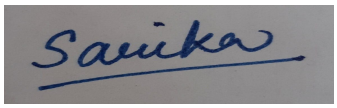

(DR . SARIKA ALREJA)
Assistant Professor,
School of Liberal Arts and Sciences
Thapar Institute of Engineering and Technology, Patiala

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CONTENTS

ABSTRACT

The current investigation aim to study the efficacy of behavioral intervention for sleep related issues in young adults who belongs to the age range of 18- 25 . Total 20 participants were taken in this study . For this purpose Pitsburgh sleep quality index , perceived stress scale and well being scale by world health organization is used. 20 female participants were taken in this study. Each female participant is divided into 2 group i.e intervention group & control group. Each group has 10 female participants. After that the intervention group participants were given total 10 sessions , these session contains psychoeducation , sleep hygiene , stimulus control therapy , sleep restriction , and some relaxation techniques are also included in the sessions such as JPMR , sleep relaxation , visualization , mindfulness and whole body relaxation. After completing the sessions of intervention group , then the both control and intervention group were reassessed. The results came out to be significant in which $p<.01$ in sleep , perceived stress and well being , which means that there is a significant effect of behavior intervention on the sleep quality of an individuals , on the perceived stress and well being of an individuals. So all the three hypotheses has been proved which states that there will be significant effect of behaviour intervention on the sleep quality of the individuals ,there will be significant effect of behavior intervention on the perceived stress of the individuals and there will be significant effect of behavior intervention on the well-being of the individuals.

KEY WORDS: Sleep quality , Perceived stress , well-being , Stimulus control therapy, JPMR , Mindfulness , sleep relaxation , visualization.

CHAPTER 1 : INTRODUCTION

1.1 SLEEP

In a condition of diminished physical and mental activity known as sleep, awareness is changed and some degree of sensory inhibition occurs. Muscle activity decreases and connections to the environment greatly diminish while we sleep. Sleep contains active brain processes even if it differs from alertness because of the capacity to respond to stimuli, making it more responsive than a state of coma or illnesses of consciousness.

Additionally, getting enough sleep—or not—affects both your physical and emotional health. Your body rejuvenates and recovers during sleep. A good night's sleep can help in problem-solving and stress management, and it also helps to protect from several health-related issues. Less sleep leads to a negative impact on our mental and physical health. In each of the sleep cycles the body and brain behave differently. Chemicals in the brain have a lot of impact on our sleep cycle. The neurotransmitters aid in nerve communication.

Norepinephrine and serotonin are made by a large number of neurons in our brain. Therefore, it assists us in activating our brains while we are awake. The sleep process is carried out by neurons at the bottom.

1.2 STAGES OF SLEEP

1.3 Stage 1

- This stage consists of five to ten minutes of light sleep.
- Your eye and muscle movements are among the first things to slow down.
- You do not open your eyes. If you are interrupted during stage 1 sleep, you might feel as though you haven't slept at all. Some images may only be vaguely remembered.
- You could at times feel like you're going to fall and afterward out of nowhere feel a muscle contract.

1.4 Stage 2 :

The American Sleep Foundation says that NREM stage 2 takes up about half of a person's total sleep time and lasts about 20 minutes per cycle.

Sleeping through stage 2:

Your body temperature decreases, your eye movements cease, and your breathing and heart rate increase as you lose awareness of your surroundings.

1.5 Stage 3:

Slow mind waves are known as delta waves which are elevated during NREM stage 3. This is a time period of profound rest in which any movement in the climate will not wake up the individual. The person will feel more relaxed and have more energy if get enough sleep in this.

Stage 3 sleep is also called NREM

In this the muscles are completely relaxed, there is a drop in blood pressure and your breathing slows as you enter the deepest sleep. During this stage, your body begins to repair itself physically.

1.6 Stage 4: REM Sleep

The fourth stage of sleep is also called REM sleep in which the voluntary muscles come immobile and the brain gets stimulated with internal conditioning.

Then the brain's exertion is most nearly analogous during the day during REM sleep. About 90 twinkles after falling asleep, REM sleep begins

Sleep is not as deep when you enter REM sleep because brain activity picks back up. The activity levels are like when you’re awake. Because of this, REM sleep is when vivid dreams occur.

At the same time, key muscles that you regularly control (such as arms and legs) can’t move. In effect, they become momentarily paralyzed.

Usually, REM sleep arrives approximately an hour and a half after you go to sleep. The initial REM phase lasts roughly 10 minutes. Each REM stage that follows becomes longer and longer.

As you get older, you experience less REM sleep. The proportion of REM sleep:

It is greatest throughout babyhood and early childhood.During youth and early adulthood, declines as you age even more.

In addition to heightened brain activity and relaxed muscles, REM sleep causes a number of physical changes in your body. These alterations include Faster breathing.

- Elevated heart rate and blood pressure.
- Penile contractions.
- Rapid eye movement.

1.7 SLEEP ISSUES

1.8 INSOMNIA DISORDER

One or more of the following symptoms are related in which there is a complaint of dissatisfaction with the quantity and quality of sleep: 1. difficulty falling asleep 2. Trouble staying asleep means very much awakening or if a person wakes during the night for some reason then there is difficulty falling back asleep. 3. waking up early and being unable to go back to sleep. At least three nights per week, difficulty in sleeping is present. D. It should be present for at least three months. It should affect important social, occupational, educational, academic, behavioral, or other areas of functioning in a clinically significant way.

1.9 HYPERSOMNOLENCE DISORDER

Hypersomnolence is self-reported excessive sleepiness with at least one of the following symptoms, despite a main sleep period of at least 7 hours: 1. sleep lapses or recurrent sleep periods within the same day 2. A delayed primary rest episode of over 9 hours out of every day that is nonrestorative (i.e., unrefreshing). 3. difficulty fully awakening following an abrupt awakening. B. The hypersomnolence happens something like three times each week, for no less than 90 days. C. Significant distress or impairment in important cognitive, social, occupational, or other areas of functioning accompany the hypersomnolence.

1.10 NARCOLEPSY

The same day-to-day occurrence of uncontrollable sleepiness or napping. It should be there in past three months, and these should have occurred three times per week.

B. The presence of something like one of the accompanying:

1. Cataplexy episodes which are defined as and should occur at least a few times per month:

a. In people who have had a chronic illness, there is a brief from seconds or minutes also, an episode of sudden bilateral muscle tone loss occurs and the person remains conscious and it is triggered by laughing or any kind of joke.

b. In People with less than six months, there will be sudden jaw-opening episodes, tongue thrusting, or global hypotonia.

2. Hypocretin deficiency should be there

1.11 BREATHING-RELATED SLEEP DISORDERS

1.12 OBSTRUCTIVE SLEEP APNEA-HYPOPNEA

The following symptoms are there in obstructive sleep apnea-hypopnea :

Troubles breathing at night:

- Breathing pauses while sleeping, snorting or gasping, or snoring.
- Daytime drowsiness, fatigue, or unrefreshing sleep despite sufficient sleep opportunities that is not better explained by another mental disorder (including a sleep disorder) or medical condition

1.13 CIRCADIAN RHYTHM SLEEP-WAKE DISORDERS

An industrious or intermittent example of rest disturbance is basically because of a change of the circadian framework or a misalignment between the endogenous circadianence.

- The sleep disturbance prompts extreme tiredness or a sleeping disorder, or both.

- Sleep disturbance has a clinically significant impact on social, occupational, and other crucial aspects of daily life.

1.14ADVANCED SLEEP PHASE TYPE

There are various advanced sleep phase types, with the person sleeping earlier than the general population or between 6 and 8 a.m. and waking up in the middle of the night around 2 a.m., whereas the general population sleeps from 11 a.m. to 12 a.m.

1.15 DELAYED SLEEP PHASE TYPE

In this, the person sleeps late as compared to the general population, there is a delay of 2 hours as compared to the general population.

1.16 NIGHTMARE DISORDER

- Repeated events of broadened, very dysphoric, and dreams are usually remembered.
- On arousing from the dysphoric dreams, the individual quickly becomes arranged and alert.
- Sleep disturbance significantly impacts social, occupational, or other important areas of functioning or causes distress or impairment.
- The horrible side effects are not owing to the physiological impacts of a substance (e.g., a medication of misuse, a drug).

1.17 RAPID EYE MOVEMENT SLEEP BEHAVIOR DISORDER

- Recurring arousals during sleep that are accompanied by vocalization and/or complex motor behaviors.
- These ways of behaving emerge during fast eye development (REM) rest and consequently ordinarily. it happens over an hour and a half after rest begins and are more continuous during the later portions of the rest time frame, and phenomenal during daytime rests.

  The individual is completely awake, alert, and not confused or disoriented when they wake up from these episodes.

1.18 SLEEPING ISSUES AFFECT ON OUR LIFE

Cardiovascular and metabolic diseases, diminished mental capacity, and poor motor coordination have all been linked to sleep deprivation. Experts have demonstrated that "healthy sleep" may be the most effective method for warding off Alzheimer's disease and that sleep and immune system health are strongly linked.

The conditions necessary for good sleep, also known as "sleep hygiene," are sometimes overlooked despite the fact that sleep disorders and the effects of sleep on general health have been extensively studied.

Sleep has an effect on obesity. Indeed, even both are interlinked. A hormone imbalance that encourages overeating and weight gain is caused by poor sleep.

- Leptin and ghrelin are hormones that control appetite. When you don't get enough sleep, these hormones are made differently, which makes you feel hungry more often.
- Lack of sleep is related to the development of chemical inadequacy and raised cortisol levels. Inadequate sleep can also slow down your digestion of food.
- Your body produces two hormones that control your appetite. Leptin lets your body know when you're full. Then again, Ghrelin helps let your cerebrum know you're hungry. The circadian cycle, also known as your sleep-wake cycle, is linked to how you get certain hormones.
- When you don’t get enough sleep, the levels of leptin go down. So your brain sends signals that you’re hungry and during this, the levels of ghrelin go up, so you feel hungry.

Other problems that sleep deprivation causes :

- Diabetes
- high blood pressure or heart disease
- obesity
- stroke
- Be accident prone
- Depression and other mental health problems

- There will be problems in recalling the events, the person with sleep deprivation is not able to learn properly and recall the events.
- Frustration, anxiety, irritability, and headache will also occur

1.19 ROLE OF BEHAVIOURAL INTERVENTION IN SLEEPING ISSUES

Behavioral interventions help to improve the sleep quality of individuals. There are various types of interventions that play an important role in improving sleep quality such as Sleep hygiene, Stimulus control therapy, Sleep restriction, sleep schedule, and different type of relaxation training exercises such as visualization, breathing exercises, sleep relaxation exercises like sleep counting, sleep napping and mindfulness Results from one study concludes that behavioral interventions are very much effective, and good treatments for insomnia which leads to reliable, long-term benefits in adults from all ages. (Andrade and P. Sharma , 2012). Another study's results indicate that stimulus control therapy is the best single treatment for chronic insomnia (Morgenthaler T, Kramer M, Alessi C, Friedman L, and et.al, 2006). And one more other study tells about the use of stimulus control instructions as a behavioral treatment for insomnia. (Bootzin , 1972).

Some of the behavioral interventions are：

1.20 SLEEP HYGIENE：

- To sleep for 8 hours daily.
- Have a consistent sleep pattern.
- Avoid caffeinated drinks at least 6 hours before bedtime.
- Avoid alcohol intake before 6 hours of sleep.
- Avoid taking naps after 3 pm and till 3 pm take a nap for 45 minutes.
- Take a hot bath before bedtime, eating right is necessary like eating healthy and balanced food before dinner is necessary.
- Having warm milk before bedtime is also very useful.
- Lights should be off and eye masks are also recommended during sleep.
- Have less fluid intake before sleep.

1.21 STIMULUS CONTROL THERAPY

The process of conditioning is involved in this therapy. It increases the association between bed and sleep, decreases the association between bed and wakefulness, and strengthens the cues that distinguish sleep from wakefulness. It takes these steps:

- Go to bed if you feel tired.
- Do not use the bed for anything other than sleeping.
- Before going back to bed if you are unable to sleep, move to a different room and focus on your internal sleep signals like eyes closing and other symptoms.
- The SCT's goal is to cause individuals to recognize quickly nodding off in the bed and room.
- Reading and staying in bed is permissible if you can't sleep for less than half an hour.

1.22 SLEEP RESTRICTION

Record the Sleep Patterns in a sleep diary for at least two weeks.

- Calculate the average Hours of Sleep per Night using the sleep schedule, and find the average number of hours of nightly sleep.
- Then set the Bedtime by going to bed in time to achieve the average number of hours that you calculated.
- Maintain consistency in waking up time for at least 2 weeks
- Then you can Increase the Time which is Spent in Bed and this will help you to find an ideal bedtime.

And there are many more relaxation therapy also which are included in behavioral interventions such as JPMR and brief mindfulness. JPMR starts with deep breathing and goes from hands to fists by tightening the fist to relaxing it it goes from hands, then too should then the face area, and then the stomach, and this way it goes to toes whereas mindfulness means focusing on the present moment and drift your mind to present moment if it distracts without any judgment.

CHAPTER 2 : REVIEW OF LITERATURE

One study is about a low-threshold sleep intervention for enhancing sleep quality and wellbeing. In this study one of the three groups received a random assignment out of 100 University of Salzburg employees for this study. A one-week follow-up personal consultation was held with members of both experimental groups 1 and 2 (EG1 and EG2). The EG1 also got a 45-min sleep education intervention with guidelines for good sleep hygiene and suggestions for controlling stimuli, whereas the EG2 just received feedback on their sleep data from week 1. A waiting-list control group (CG) didn't hear anything until the conclusion.

The study's findings therefore suggest beneficial impacts on sleep and wellbeing after sleep monitoring over the course of two weeks and little intervention with only one in-person consultation that included feedback on the sleep data. Actigraphy-measured sleep efficiency (SE; EG1), mood, energy, and sleep quality all show improvements, as do wellbeing and sleep onset latency (SOL) in EG2. No parameter improved in the inactive Control group. (Eigl, Urban-Ferreira , Schabus, 2023).

The effectiveness of nonpharmacological therapy for primary persistent insomnia is reviewed in one research study. The results show that nonpharmacological treatments improve a number of sleep characteristics in chronic insomniacs in a consistent and lasting way. According to the findings, between 70 and 80 percent of patients who get nonpharmacological therapies benefit from their care. Treatment is expected to decrease the key target symptoms of sleep onset latency and waking time after sleep onset below or around the 30-min threshold first used to characterize insomnia severity for the average patient with persistent primary insomnia. Additionally, sleep length is extended by a modest 30 minutes, and both the patient's happiness with their sleep patterns and their quality of sleep are greatly improved. These behavioral therapies result in improvements in sleep that last for at least six months beyond the end of therapy. (Morin, Horie, Hauri; 1999).

In another study on SCT (stimulus control therapy) people with insomnia, the stimulus control approach to therapy was quite effective. (Bootzin, 1972) .

Another research looked at ways to manage persistent insomnia by limiting bedtime. 35 patients, with a mean age of 46 and a 15.4-year history of insomnia, were originally treated by severely limiting the amount of time they could spend sleeping. According to the study's findings, patients reported more total sleep time at the conclusion of the 8-week treatment program, as well as improvements in their sleep latency, total waking time, sleep efficiency, and subjective evaluation of their insomnia. In 23 participants who took part in a follow-up evaluation, improvement persisted for all sleep metrics at a mean of 36 weeks following therapy. Three of the 19 participants had high sleep quality, compared to 16 who had poor sleep quality. (Spielman, Saskin, &Thorpy , 1987).

At Budi Agung Social Institution, different research was conducted to examine the impact of Jacobson's Progressive Muscular Relaxation on senior participants' sleep quality. However, whereas the 3 patients continued to have poor sleep quality following the JPMR exercise, the 16 subjects showed better sleep quality. Therefore, Jacobson's Progressive Muscular Relaxation (JPMR) has a substantial impact on the quality of sleep. (Kareri, Manafe & Payong,2020)

Another study on behavioral treatment for sleep issues in children. The intervention basically consisted of five sessions spread out over two months, during which the parents were instructed on how to develop sleeping schedules and routines and how to apply extinction and positive reinforcement strategies. Parent-report measures were used to examine sleeping habits and behavioral issues. The study's findings indicate that children who got the intervention improved more than the control group did in terms of sleep latency, night waking, behaviour including refusing to go to bed and wanting to sleep with their parents, and daily behaviour from baseline to post-treatment. At the subsequent visit, these gains were still there. (Ferreira, Pires and Silvares;et.al , 2019)

CHAPTER 3 : Research gap

Many reserach studies on sleeping issues are with the people who have some comorbid disorder but in this study all the female participants are healthy without any comorbid disorder. It was observed that this study on sleeping issues in many other research papers are more on the older people and less research studies on the youngsters. So the young people are developing this social media addiction due to which sleeping issues arises. Most reserach studies are on sleep hygiene , stimulus control , sleep restriction and jpmr effect on sleep, but here we also explored sleep relaxation exercise, whole body scan relaxation , visulization and its impact on sleep.

3.1 STIMULUS CONTROL MODEL

The behavioural notion that one stimulus may elicit a range of responses depending on the training history underlies stimulus control, as it was first defined by Bootzin. There is a significant likelihood that a stimulus will elicit only one response in a simple conditioning history when a stimulus is consistently linked with a single behaviour. There is a minimal likelihood that a stimulus would elicit only one response in a complicated conditioning history when a stimulus is coupled with a range of behaviours.The typical cues for sleep (such as bed, bedroom, bedtime, etc.) are frequently connected with activities other than sleeping in those who have insomnia. In an effort to manage their insomnia, a patient could, for example, spend a lot of time awake in their bed and bedroom doing things other than sleeping. The patient feels that their coping strategy is both logical (staying in bed at least allows them to sleep) and moderately effective (doing other things in the bedroom occasionally seems to stop the sleeplessness). The likelihood that sleep-related stimuli would cause the intended reaction of drowsiness and sleep, however, is decreased as a result of these practises, which pave the way for sensory dyscontrol.
Illustration of the stimulus control and dyscontrol.

GOOD STIMLUS CONTROL	STIMULUS DYSCONTROL
ODD 1	ODDS 1 IN 7
BEDROOM SLEEP ROUTINE	BEDROOM EAT IN BED READ IN BED WATCH TV IN BED SLEEP WORK IN BED WORRY IN BED ROUTINE CLEAN BEDRROOM

3.2 3P BEHAVIORAL MODEL

The first completely articulated model of insomnia to acquire general recognition is the 3P behavioural model , sometimes referred to as the Spielman model, the three-factor model, or the behavioural model. The model outlines how acute insomnia develops into chronic and self-perpetuating insomnia. The interplay of three components is the model's foundation. The first two factors—the predisposing and precipitating factors—represent a notion of the stress-diathesis of how insomnia manifests. The sustaining factor, which is the third element, shows how behavioural factors affect chronicity.

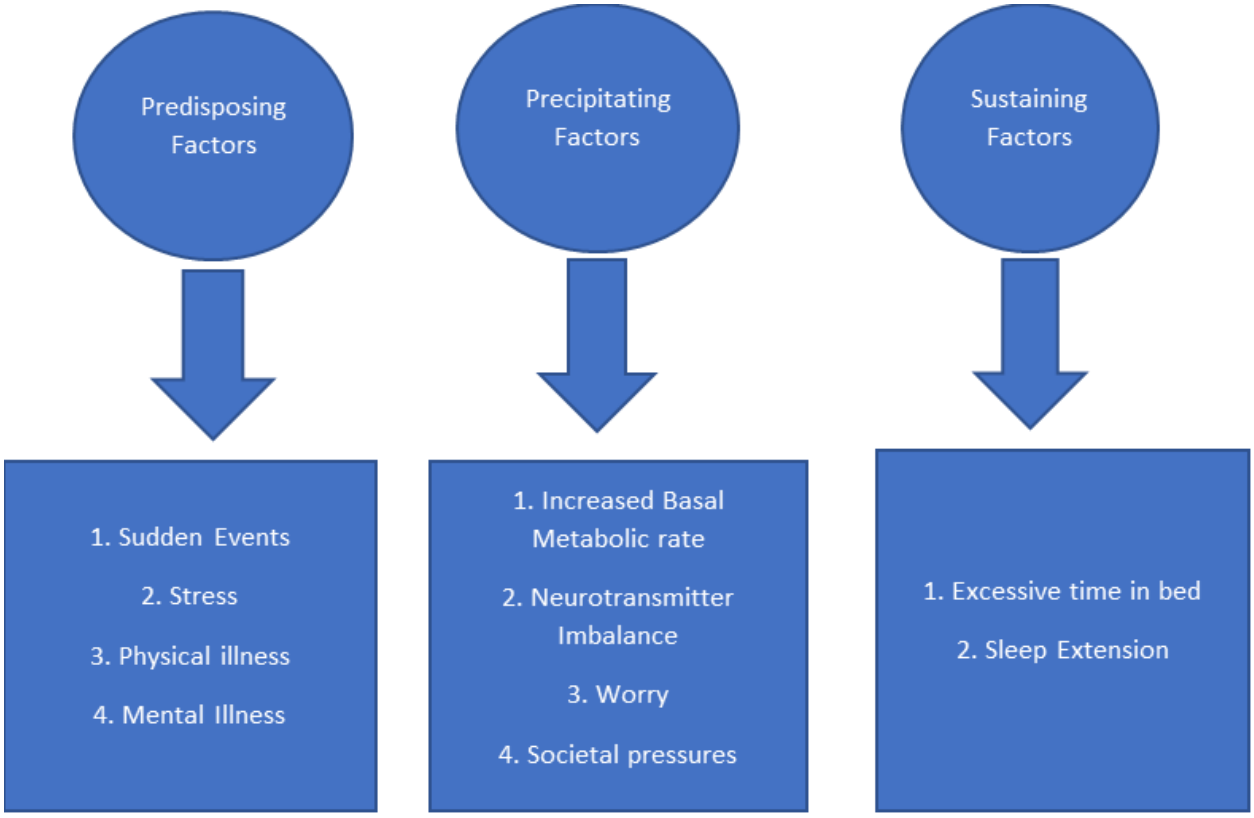
All aspects of the biopsychosocial spectrum might be considered as predisposing factors. Increased basal metabolic rate, hyperreactivity, and/or basic changes to the neurotransmitter systems linked to wakefulness and sleep are possible biological reasons. Worry or the propensity to ruminate excessively are examples of psychological issues. societal influences can include things like the bed partner maintaining an incompatible sleep pattern or societal pressures to sleep according to a nonpreferred sleep schedule (such as child rearing), however they are rarely a focus at the theoretical level.

As the name suggests, precipitating factors are sudden events that cause sleep disruption. The main causes are believed to be stress-related life experiences, such as physical and mental illnesses. The measures an insomniac does to make up for or deal with their lack of sleep are referred to as perpetuating factors. Three types of sustaining variables have received the most

attention in research and therapy: the practise of non-sleep activities in the bedroom, the propensity to remain awake in bed, and the propensity to spend an excessive amount of time in bed.

Stimulus control addresses the first two of these factors (which were previously discussed). The final of these factors receives the most attention in the traditional 3P model. Excessive time in bed, often known as sleep extension, describes the propensity of insomniacs to take naps or get out of bed later than usual. These adjustments (compensatory activities) are likely highly self-reinforcing (in the short term) because they enable lost sleep to be "recovered" and the daily consequences of missed sleep to be lessened. The patient makes these adjustments to enhance the possibility to receive more sleep. In the long run, the propensity for sleep prolongation is detrimental. A mismatch between sleep opportunity and sleep length results from sleep extension ability.The bigger the mismatch, the more probable it is that the person would stay awake for extended periods of time throughout the allotted sleep period. This will happen independently of what caused the person's insomnia and what predisposed them to it.

A schematic representation of this model is presented.



3.3 MOTIVATION OF THE STUDY

The current study intends to investigate the effects of behaviour intervention on people's well-being, perceived stress, and sleep quality. We all know how vital sleep is to our lives. The primary goal was to determine how behavioural treatments may assist to solve the sleeping issues problems. Mostly studies on the sleeping issues are older adults , but this study is an effort to explore the sleeping issues in the young people who belongs to the age range of 18-25. The sleeping issues are increasing very much in youngsters because of lots of factors like stress , or another kind of problems so thats why this study focus on the youngsters , and to see whether the behavioural intervention alone can have an impact on improving the sleeping issues of young adults , as stressis increasing in young adults so this variable were also added in the study so see the effectiveness of intervention strategies and relaxation technquies on reducing stress and increasing the overall well-being.

3.4 OBJECTIVES OF THE STUDY:

To find out the efficacy of behavior intervention for sleep-related issues in young adults.

3.5 HYPOTHESES

H1: There will be significant effect of behaviour intervention on the sleep quality of the individuals.

H2: There will be significant effect of behavior intervention on the perceived stress of the individuals.

H3: There will be significant effect of behavior intervention on the well-being of the individuals.

CHAPTER 4 : METHODOLOGY

4.1 Sample

A total of 20 female participants (10 each for intervention and control groups) were used in this study belonging to the age range of 18-25. They are selected using purposive sampling. Individuals will be assigned to study groups randomly.

4.2 Design

This study uses pre-and-post treatment with a control group design.

4.3 Participants Inclusion and exclusion criteria

Inclusion criteria

- Female Subjects with sleeping issues with moderate to severe score in pittsburgh sleep quality index were taken.
- Age range within 18-25
- All Subject were educated upto graduate
- Subject who gave informed consent to participate in the study
- Residing in patiala

Exclusion Criteria

- Subject with co-morbid psychiatric conditions

4.4 Tools used

4.5 PITTSBURGH SLEEP QUALITY INDEX

A 19-item self-report tool called the Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989) measures seven different aspects of sleep, like sleep quality, sleep onset latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and overall sleep quality. malfunctioning all day—the month before To calculate the PSQI score overall, the scores on each domain were added. PSQI's scores range from 0 to 21, with higher numbers suggesting worse sleep. According to the PSQI, a score of 5 or more indicates poor sleep quality, whereas a score of 5 or less indicates excellent sleep. It demonstrated high test-retest reliability in a sample of 80 insomniacs (r =.87; Backhaus et al., 2002). Additionally, the Insomnia Severity Index and

the PSQI showed intermediate convergent validity (r =.63; Bastien, 2001) and high divergent validity (r =.18; Deitch et al., 2016) respectively. Cronbach's alpha for the PSQI was.83 (Buysse et al., 1989).

4.6 PERCEIVED STRESS

It contains 14 items (PSS-14; Cohen et al., 1983), Higher scores on this means severe stress. The items were assessed on a five-point scale from 0 (never) to 4 (very often). Test-retest reliability (r =.85), acceptable reliability (r =.84), and divergent validity with respect to measures of depressed symptoms were all present in the PSS-14 (Myers et al., 2012). The PSS-14's Cronbach's alpha value was .85.

4.7 WELL-BEING

The WHO-5 Well-Being Index (WHO-5) is a succinct self-reported indicator of current mental health. For the WHO-5, Cronbach's alpha was 0.91. It is fairly valid. It has five questions and is scored using a Likert scale with a range of 0 to 5.

4.8 THE INTERVENTION PACKAGE

Behavioral intervention related to the following domains would be provided for a total of 10 sessions.

1st session

Psychoeducation: In this session a brief introduction to 4 sleeping stages, and various sleeping disorders were given. The participants were explained about the sleep disorders related to the quantity and quality i.e. insomnia, hypersomnia, then they were explained about the REM related sleep disorders, Circadian related sleep disorders, sleep terrors, narcolepsy, etc. They were also explained how sleep is responsible for obesity and what are the other long-term problems if a person is not getting sufficient sleep. Some of the disorders which were explained to them are as follows :

Insomnia Disorder

One or more of the following symptoms are related in which there is a complaint of dissatisfaction with the quantity and quality of sleep: 1. difficulty falling asleep 2. Trouble staying asleep means very much awakening or if a person wakes during the night for some reason then there is difficulty falling back asleep. 3. waking up early and being unable to go back to sleep. At least three nights per week, difficulty in sleeping is present. D. It should be present for at least three months. It should affect important social, occupational, educational, academic, behavioral, or other areas of functioning in a clinically significant way.

Hypersomnolence Disorder

Hypersomnolence is self-reported excessive sleepiness with at least one of the following symptoms, despite a main sleep period of at least 7 hours: 1. sleep lapses or recurrent sleep periods within the same day 2. A delayed primary rest episode of over 9 hours out of every day that is nonrestorative (i.e., unrefreshing). 3. difficulty fully awakening following an abrupt awakening. B. The hypersomnolence happens something like three times each week, for no less than 90 days. C. Significant distress or impairment in important cognitive, social, occupational, or other areas of functioning accompanies the hypersomnolence.

Narcolepsy

The same day-to-day occurrence of uncontrollable sleepiness or napping. It should be there in the past three months, and these should have occurred three times per week.

And many breathing-related disorders such as sleep apnea, and circadian rhythm-related disorders such as delayed sleep phase type, advanced sleep phase type, and irregular sleep phase were also explained to them

2nd session

Sleep hygiene: In this session the questionnaire regarding sleep quality were discussed with them. And basic tips regarding sleep hygiene were given to the participant:

- To sleep for 8 hours daily.
- Have a consistent sleep pattern.
- Avoid caffeinated drinks at least 6 hours before bedtime.

- Avoid alcohol intake before 6 hours of sleep.
- Avoid taking naps after 3 pm and till 3 pm take a nap for 45 minutes.
- Take a hot bath before bedtime, eating right is necessary like eating healthy and balanced food before dinner is necessary.
- Having warm milk before bedtime is also very useful.
- Lights should be off and eye masks are also recommended during sleep.
- Have less fluid intake before sleep.

3rd Session

Stimulus Control Therapy

The process of conditioning was involved in this therapy. It increases the association between bed and sleep, decreases the association between bed and wakefulness, and strengthens the cues that distinguish sleep from wakefulness. It takes these steps:

- Go to bed if you feel tired.
- Do not use the bed for anything other than sleeping.
- Before going back to bed if person not able to sleep, move to a different room and focus on the internal sleep signals like eyes closing and other symptoms.
- The SCT's goal was to cause individuals to recognize quickly nodding off in the bed and room.
- Reading and staying in bed was permissible if a person can't sleep for less than half an hour.

4th session

Sleep restriction

In the sleep restriction following points would be explained to the participant:

- For at least fourteen days, write down the examples in a rest journal.
- Determine the typical number of hours spent sleeping each night by utilizing the sleep schedule.
- Then, set the Rest time by stirring things up around town in order to achieve the normal number of hours not set in stone.

- After no less than about fourteen days of being steady with your waking time, you can build how much time you spend in bed, which will help you in deciding your optimal sleep time.

5th session

JPMR

DEEP BREATHING**:**

- Close your eyes. Inhale deeply, push the air to your stomach, keep it there for 2 seconds, and then let it out slowly, allowing the same warm air to exit your nostrils for the final 10 seconds. There are approximately three deep breaths.
- Pay close attention to your hands now. Make a tight fist with each hand, feel the tension in your hands, hold it for 10 seconds, then let the tension out of your hands and let your hands relax for 10 seconds.
- Next, we'll move to the forearm, fold it towards your biceps, and feel the tension rise there. We'll hold it for 10 seconds, then let it go and relax for another 10 seconds.

SHOULDERS**:**

- Stretch the arm into the matrice/mat, feel the tension that is built up in your arms, and shrug it toward your ears, hold it for 10 seconds, and then release the tension from your arms and relax for 10 seconds.

FACIAL MUSCLES:

- Concentrate on your facial muscles: Cause a stir, fondle the strain work in your eyebrows, hold it for 10 seconds, and afterward discharge the pressure from it and loosen up it for 10 seconds.

EYE MUSCLES

- Then close your eye muscles however much you can, grope the strain work in them, hold it for 10 seconds, and afterward discharge the pressure from it and unwind for 10 seconds

TONGUE

- Press the tongue hard and level against the top of the mouth, grope the strain work in it, hold it for 10 seconds, and afterward discharge the strain from it and unwind for 10 seconds

JAW LINE

- Tense the jaw by gnawing teeth together, grope the strain work in jaw muscles, hold it for 10 seconds, and afterward discharge the pressure from it and unwind for 10 seconds

CHIN

- Push the head back to the extent that it would go, grope the strain work in your mind, hold it for 10 seconds, and afterward discharge the pressure from it and unwind for 10 seconds.
- After that cut the head down and press the jawline down onto the chest, grope the strain work in the neck muscles, hold it for 10 seconds, and afterward discharge the strain from it and loosen up it for 10 seconds.

CHEST

- Take a breath from your chest, hold it there for two seconds, and then exhale for ten seconds, feeling the same warm air coming out of your nose.

STOMACH:

- Grasp the stomach muscles as firmly as can, grope the pressure work in the stomach muscles, hold it for 2 seconds, and afterward discharge the strain from it and unwind for 10 seconds.

BUTTOCKS AND THIGHS:

- Squeeze the muscles of both the buttocks and thighs together to stretch them. Hold the stretch for ten seconds, then let go of the tension and relax for ten seconds.

TOES:

- Stretch your toes in front of you and feel the tension build up in both toes. Hold this position for ten seconds before letting go of the tension and relaxing for ten seconds.
- Now, extend your toes away from your body and feel the tension build up in both toes. Hold this position for ten seconds before relaxing for ten seconds.
- To begin, move your toes in a clockwise direction, hold them for ten seconds, feel the tension build up in your toes, and then relax for ten seconds.
- Hold your toes in an anticlockwise direction for ten seconds before releasing and relaxing for the same amount of time.

AGAIN FULL BREATH:

- Now, take a deep breath, hold it for two seconds, and then exhale through your nose to feel the air going through your stomach, the warm air coming out of your nose, and the tension leaving your body.
- Presently rub the hand together, put them all over and gradually open your eyes and advance toward one side and get

6th session

Guided Imagery (Visualization)

During this session, guided imagery of white clouds and the beach was performed.

Adhering to guidelines was given to them on an ocean-side representation:

- Before exhaling, take a breath through your abdomen for a while. Perceive how the stomach rises and the air finishes off your lungs when you unwind. Do take a full breath in and breathe out. The pressure in your body is delivered as you breathe out. Envision yourself on an ocean side at this point. Your face gets warm from the sun's warmth. You take a brief break to basically take in the sparkle. You can feel the sand's surface as you move through the sand. White waves were crashing toward the ocean side in the dark blue sea. As they return to the ocean, the waves were rising on the sand. After that, you

relax in a chair. Loosening up in your ocean-side seat. When you are prepared to embark on your excursion, allow yourself as much time as you need. Gently return your attention to the room.

- Following instructions were given to them on a white clouds visualization . Imagine yourself now floating on a white cloud that is fluffy and lovely. You are being held in the air by the cloud as it raises you from your current position. As you delve into the softness of the cloud, you start to feel lighter. After lying there for a while, you become aware of how at ease you are. Your anxiety dissipates as your body sinks into the cloud. You experience the warmth of the sun and the chill of the air as you glide into the bright blue sky, creating the ideal temperature. Take note of the soft spots on the cloud where your body touches it; it will seem as though you are floating there. The cloud was softly swaying in the air, much like a boat on the calm sea. You feel comfortable, at ease, and serene as you floated through the air. You started to relax as the cloud's gentle comfort envelopes you. You inhale the pure, fresh air as you soar higher and higher. Allow your cloud to start its peaceful, steady descent down to Earth when you were ready. You start to smell the lovely perfume of budding flowers as you come closer to the earth. You remain at ease and comfortable.Then you were placed gently on the lovely grass below the cloud. Still feeling at ease, you started to slowly and softly turn your focus back to the surrounding.

7th session

Breif mindfulness meditation and stream mindfulness

- While performing this exercise, just pay attention to how your belly and chest breathe rise and fall. You would see that your mind has a tendency to wander. It's very natural for brains to catch on to the fact that you had done this; just gently bring yourself back to the present. Imagine that you were sitting next to a stream that were slowly running and that there were leaves floating by on the water's surface. It was up to you to imagine it the way you like. For the next several minutes, write any idea that comes to mind on a leaf, then let it drift away. Do this whether the ideas were painful or enjoyable, pleasant or bad. Give the streaming space to move at its own pace. Put your ideas on a leaf if your

mind tells you something is dumb or that you would not accomplish it.

8th session

Sleep Relaxation

- The person was told to lie on their back with their hands either by their sides or propped up against their thighs. Take notice of your body's feelings. The session's goal was to relax your body and mind so that you may let go of tension. Prior to going to sleep, focus on whatever you need or want to think about. The following two minutes are yours to worry about or reflect on anything you like. Before heading to bed, be sure to unwind. It draws attention to the region that was tensing. Only one little cause of stress should be the focus of your attention to allow any pressure. We will count from 1 to 10 and with every count the the person would relaxed. Sleep relaxation for nap As you concentrate on relaxing your body, allow your thoughts to become still. From your head to your feet, let your muscles relaxed . When you exhale, it seems as though all of your stress leaving your body, and when you inhale, you relax even more. being so profoundly at ease...As you get more at ease—drifting in relaxation—notice it. You should use this time to unwind, recover, and sleep. Even simply unwinding might leave you feeling renewed...and can bring back your mind and your body.

9th session

- Body scan sleep relaxation and the overall summary of all the sessions. **:** The person was instructed to breathe properly. They were first instructed to concentrate on and objectively study their feet while breathing in and out of every portion of their bodies. Next, pay attention to your calves, ankles, thighs, and knees. This is how the entire body scan was carried out, including the scalp and the legs. simply observe the sensations that were happening Watch it. As you breathe in or out via your mouth or nose, pay attention to how the air was moving. There was a relaxation of the tension that a person retains as they exhale. Then, broadened your focus to include your complete body. Finally, after looking over the entire body. Direct your focus onto the top of your head and then down to the bottom of your toes.And lastly, the participant was given the summarization of all

the sessions.

10th session Post assessment

- In this session, the participants were re-assessed on the Pittsburgh sleep quality index, perceived stress, and well-being questionnaires, and feedback from the participant was also taken.

4.9 PROCEDURE: The participants with sleeping issues were taken in the study. Total 20 particpants were taken and these participants were divided into control and intervention group. Each group contain of 10 participants. After that in intervention group total 10 sessions were given. These sessions contains psychoeducation , sleep hygiene , stimulus control therapy , sleep restriction , and some relaxation techniques are also included in the sessions such as JPMR , sleep relaxation , visulization , mindfulness and whole body relaxation. After completing the sessions of intervention group , then the both control and intervention group were reassessed.

4.10 STATISTICAL ANALYSIS

The statistical analysis was done with the help of Statistical Package for social sciences (SPSS-22) .

- To analyze the difference between control and intervention group on the socio-demographic variables , for that Mann Whitney Test is used.
- To analyze the group difference (intervention and control group) between pre and post intervention, Mann Whitney test is used for overall functioning for the two groups.

CHAPTER 5 : RESULTS

Table No. 1 Showing sociodemographic characteristics of experimental and control group.

S.No.	Variables		Experimental Group	Control Group
1.	Gender	Female	10	10
2.	Education	Graduate	10	10
3.	Marital Status	Single	10	10
4.	Occupation	Student	9	9
		Job	1	1

This table no.1 shows sociodemographic characteristics of experimental and control group 20 females were included in the sample. Mean Age of the participants for experimental group and control group was 22.6 and 22.9 respectively . No significant difference was found between experimental and control group regarding age. In both the groups all are students which are studying. Regarding marital status all are unmarried. In terms of educational qualification all the participants were graduate. So, no significant difference was found between both groups between any of socio-demograhic characteristics i.e education , marital status , gender and age .

Table no. 2 Shows baseline status of experimental and control group between sleep , well-being and perceived stress.

	Experimental Group	Control Group	Mann Whitney U test	
	Mean± SD	Mean ± SD	U value	Z - score
Area of assessment				
Sleep	10.9 ± 2.46	9.7± 1.6	38.00	-.929 (NS)
Well being	9.9 ± 4.88	10.4 ± 5.1	47.50	-.189 (NS)
Perceived stress	26.3 ± 7.91	33.4 ± 5.2	25.50	- 1.858 (NS)

(NS) - Not significant

Table no.2 This table shows the baseline status for sleep, perceived stress and well being. In the experimental group the mean and standard deviation for sleep, well-being and perceived stress is 10.9±2.46 , 9.9±4.88 and 26.3±7.91 respectively. Then the mean and standard deviation for control group for sleep, well-being and perceived stress is 9.7±1.6 , 10.4±5.1 and 33.4±5.2 respectively. The U value for sleep , well being and perceived stress is 38.000 , 47.500 and 25.500 respectively and the z score value for sleep , well being and perceived stress is -.929 , -.189 - 1.858 respectively and they all are found to be non - significant. The groups do not differ significantly on baseline scores for clinical symptoms. It furthur shows that there is no significant differences in sleep , well being and perceived stress between control and experimental groups. The difference between these experimental and control group was not found to be significant statistically which indicates no significant difference. Hence the experimental group and control group matched to each other.

Table no. 3 Showing status of clinical symptoms in experimental and control group after intervention.

Area of assessment	Experimental Group Mean ± SD			Control Group Mean ± SD			Mann Whitney U Test	
	Pre	Post	Difference (Pre-Post)	Pre	Post	Difference (Pre-Post)	U value	Z score
Sleep	10.90 ± 2.46	6.6 ± 3.68	4.3 ± 2.1	9.70 ± 1.63	8.4 ± 1.83	1.3 ± 1.70	13.50	-2.78**
Well being	9.90 ± 4.88	18.4 ± 3.23	-8.5± 3.89	10.40 ± 5.16	12.50 ± 4.85	-2.1 ± 2.42	7.00	-3.27**
Perceived stress	26.30 ± 7.91	24.2 ± 9.31	-8.5 ± 3.89	33.40 ± 5. 29	33.0 ± 5.81	-2.1 ± 2.42	7.00	-3.27**

**** Significant at .01 level**

Table no.3 Shows status of clinical symptoms in experimental and control group after intervention. In experimental group the mean and standard deviation in pre for sleep , well being and perceived stress was found to be 10.90±2.46 , 9.90±4.88 and 26.30 ± 7.91 whereas for post the mean and standard deviations is 6.6± 3.68 , 18.4±3.23 and 24.2± 9.31 respectively. So the pre-post difference value for sleep , well being and perceived stress in experimental group was found to be 4.3±2.1 , -8.5±3.89 & -8.5 ±3.89. In case of control group the mean and standard deviation in pre for sleep , well being and perceived stress is 9.70±1.63 , 10.40±5.16 , 33.40 ±5.29 and for post is 8.4±1.83, 12.50 ±4.85 and 33.0±5.81 respectively. So the pre-post difference value for control group was found to be 1.3±1.70 , -2.1±2.42 & -2.1±2.42 respectively. The U value for sleep, well being and perceived stress was found to be 13.50 , 7.00 and 7.00 respectively and the Z score for sleep , well being and perceived stress was found to be -2.78 , -3.27 & -3.27 respectively and they all are significant at .01 level. So it shows that the therapeutic gain obtained after intervention. An analysis of mean scores at both assessments suggests that there also been further improvement in experimental group functioning in most of the areas after intervention as compared to control group. Hence a significant difference found between control and intervention group.

CHAPTER 6 : DISCUSSION

The aim of this is to study the effect of behavior intervention for sleep-related issues in young adults. In this study total 20 participants were taken. And all the 20 female participants with sleeping issues were divided into two groups such as control group and intervention group. Total 10 sessions were conducted on the intervention group . There are total 3 hypotheses in our study which states that there will be significant effect of behaviour intervention on the sleep quality of the individuals , another hypotheses states that there will be significant effect of behaviour intervention on the perceived stress of the individuals and last hypothesis states that there will be significant effect of behaviour intervention on the wellbeing of the individuals. So according to the study results all the three hypothesis has been proved as results were found out to be significant at .01 level for all the three variables which means that the intervention have a lot of impact on the sleeping patterns , perceived stress and well being of the individuals.

First hypothesis in our study which has been proved which means that there was a significant effect of behaviour intervention on the sleep quality. There are many research studies in the literature which is in accordance with this hypothesis . Some of the reserach studies are : One study is about that study on the effectiveness of sleep hygiene interventions in reducing insomnia and obesity in undergraduate medical students 29 women out of the 100 participants, in both the control and intervention groups, were female. Subthreshold insomnia 289 was more common (48%) than usual. In a 4-month comparison, the intervention group reduced weight and insomnia severity more significantly than the control group. Therefore, a straightforward non-pharmacological intervention appears to offer larger advantages for enhancing sleep hygiene and lowering obesity. (Suganya, Arvinth, and Vedapriya ,2022). Then another study is that the systematic review and meta-analysis was to examine the impact of behavioural sleep interventions (BSIs) on mother depression, the frequency of child night awakenings, and maternal sleep quality. According to the study's findings, behavioural sleep therapies dramatically decreased children's sleep issues and enhanced the quality of mothers' sleep in the intervention group. Two of the 10 studies were divided into two subgroups by participants and intervention type; thus, 12 subgroups were included in the meta-analysis. BSIs significantly

reduced child sleep problems and improved maternal sleep quality in the intervention group. There were no significant differences in the number of child night awakenings and maternal depression between the two groups. (Park J, SY Kim, and K Lee, 2022). Another study which is in accordance with our first hypothesis is that a study on Stimulus Control Therapy for Delayed Sleep-Wake Phase Disorder (DSWPD) in which Stimulus control therapy was used for the treatment of Prolonged Sleep-Wake Phase Disorder (DSWPD). Researchers investigated the efficacy of stimulus control therapy, a behavioural intervention that focuses on environmental factors that affect sleep, in patients with delayed sleep-wake phase disorder (DSWPD). The intervention included regulating wake-up times, exposure to light, and regular sleep practises.The outcomes showed increases in sleep duration and quality as well as a significant reduction in daytime sleepiness. (Grissar, Dohnt, H., Gardner, & Paine (2011).Same Another study on sleep which was conducted on to see the effect of educational intervention for improving students' sleep hygiene. A research was done to see how well a sleep hygiene teaching programme for college students worked. Education on good sleep habits, such as keeping a regular sleeping pattern, limiting stimulant before bed, and establishing a sleep-friendly atmosphere, was part of the intervention. In comparison to a control group, the results demonstrated a substantial increase in sleep duration, quality, and reduced sleep disruptions.(Lund, Reider,Whiting ,& Prichard, (2010). This study sought to determine the impact of the sleep education website Sleep to Keep Awake on college students' sleep patterns.A public institution in the Midwest randomly assigned college students (at least 18 years old) to the control or intervention groups. Each individual took a baseline survey that asked about their demographics, the Sleep Quality Index of Pittsburgh, their health, their knowledge of sleep, as well as assessments of their circadian rhythm and drowsiness. The online intervention was then conducted by the intervention group. At one week and eight weeks, surveys were conducted again.After then, the findings revealed that, after 8 weeks, the data revealed that more intervention respondents had reported better sleep habits. The chance of inadequate sleep the night before exams decreased among intervention individuals as did their propensity to cease using electronics sooner, maintain more consistent sleep patterns, awaken earlier on weekdays, and preserve a more regular sleeping schedule. The mean sleep quality and depression levels improved in the intervention group. The other measurements revealed no changes that were

statistically significant. Hence A quick and individualized electronic sleep education intervention reduced depression ratings and sleep behaviours. (Hershner & O brien , 2018).

In the another study which see the effects of Sleep Restriction and Extension on School-Age Children: The neurobehavioral functioning (NBF) of children was examined in this study in relation to the effects of mild sleep restriction and extension. Using activity monitors, the sleep patterns of 77 kids were observed over the course of five nights. The 39 boys and 38 girls in this group of kids were all enrolled in the usual 4th and 6th grade classrooms. On the second night of their regular sleeping pattern, their NBF was measured utilising computerised procedures.

The kids were instructed to either increase or decrease their sleep time by an hour the next three evenings starting on the third evening. On the sixth day after the experimental sleep modification, their NBF was reevaluated. Limiting sleep enhanced the quality of sleep and decreased subjective alertness. On NBF measurements, the sleep modification had notable differential effects. These results have significant developmental and clinical implications. (Sadeh A , Gruber R , & Raviv A , 2003).

The second hypothesis which says that there will be significant effect of behaviour intervention on the perceived stress of an individual , this hypothesis has also been proved so the research studies related to this hypothesis are as follows : One study which aims to evaluate the impact of progressive muscle relaxation on older persons' stress levels and sleep quality. This study employed a pre-experimental one-group pre-test and post-test design, and 60 seniors were chosen using a non-probability convenient selection approach. Seniors' levels of stress were measured using the modified perceived stress scale, and their sleep quality was evaluated using the athens insomnia scale. The results of the investigation showed that there was a statistically significant change between the pre and post scores of the samples, proving the effectiveness of jpmr. Sudha, Deepa, and Samithya, 2022).Another study discuss the impact of the JPMR approach on the stress of senior residents of certain old age homes in Kolkata . For the non-probability purposive sampling method, 60 senior people (30 in the experimental group and 30 in the control group) were chosen. The study findings indicated that both the experimental and control groups senior participants generally suffer moderate levels of stress. The results also demonstrate that the JPMR approach was more successful than the control group at reducing stress in the experimental group. (Maheswari, Shipra, and Debarchana, 2019). This study set out

to look at how pharmacy students' perceptions of stress, mental health, and mindfulness after practising mindfulness meditation with the HeadspaceTM app.

Pharmacy students in their first, second, and third professional years (P1, P2, and P3, respectively) were invited to participate. For a period of four weeks, students were required to use the HeadspaceTM app to meditate for at least ten minutes each day. The HPLP, or health promoting lifestyle profile, was completed by students at baseline. The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), Cohen Perceived Stress Scale (PSS), and Five Facet Mindfulness Questionnaire (FFMQ) were used to collect data from the pre- and post-surveys.In the research, 92 pharmacy students participated. 70% of the participants finished the research. Due to protocol violation, just one participant was eliminated from the post-data analysis. According to the results, the intervention was linked to improved mental health, increased mindfulness, and lower felt stress across all measures. Further research revealed that adjusting for different health-promoting lifestyle choices maintains the beneficial effects of mindfulness meditation. (Zollars, Poirier, and Pailden, 2019). Another study looked at how health care workers responded to a brief stress management programme called mindfulness-based stress reduction (MBSR). An 8-week the MBSR treatment may be beneficial for lowering stress and elevating quality of life and compassion for oneself in healthcare workers, according to the findings of this prospective randomised controlled pilot trial. (Shapiro, Astin, Bishop, S. R., & Cordova, M. (2005). Another study which is in accordance with the second hypothesis is that this research tried to find out how JPMR and deep breathing exercises affected people in lowering anxiety, mental discomfort, and enhancing sleep quality among elderly patients in hospitals. 60 inpatients, 30 in the experimental group and 30 in the control group were selected using a study approach that was a quasi-experiment. Checking for contamination.The control group was added in the final three months, while the experimental group was added in the first three. Pittsburgh Sleep Quality Index, K-10, and the Geriatric Anxiety Inventory were given out. Four-step breathing and an audio recorded Hindi JPMR were employed. Significant improvements in anxiety reduction, psychological distress reduction, and sleep quality were observed in the experimental group. The considerable reduction in anxiety, psychological distress, and sleep quality demonstrated JPMR's and deep breathing exercises' effectiveness in managing older adults. (Kalra, Khakha, Satapathy and A. B). One last research study related to

this hypothesis was to assess Koru's performance as a mindfulness training programme for young people and college students. Total 90 students took part. Randomised controlled trial is the method. It was predicted that Koru would improve mindfulness, self-compassion, and thankfulness compared to a wait-list control group while decreasing reported stress and sleep issues. Results came out to be group interactions improved perceived stress, sleep issues, mindfulness, and self-compassion significantly. The wait-list group duplicated all significant effects. Changes in perceived stress, sleep issues, mindfulness, and self-compassion all showed significant connections. So According to research, the Koru programme for the adults in a university context is beneficial. (Greeson, Juberg, Maytan, and James, 2014).

Last hypothesis states that there will be a significant effect of behaviour intervention on the well-being of the individuals,and it has been proven in the study. The reserach studies related to this are as follows , So there is a one reserach study on the goal of the Sleep Smart Programme was to improve sleep health behaviours first, and then academic performance and behavioural well-being secondarily. It was a 8-session Sleep Smart Programme (SS = 70) or a comparison group (comparison = 73) were randomly assigned, according to school, to a varied sample of seventh graders from two urban middle schools. Results came out to be that Compared to the comparison group, sleep smart programmars had considerably better physiological and emotional sleep hygiene, spent more time in bed, and went to bed earlier. Participants in the comparison group also reported a statistically significant decline in internalising behavioural issues and maintained academic achievement. Whereas Sleep smart programme participants continued to report better sleep health efficacy even if it was not sustained at time , but the comparison group participants' sleep health effectiveness decreased.

So , The Sleep Smart preventative intervention was successful in raising academic achievement, sleep health efficacy, sleep hygiene, bedtimes, and time in bed. It was also successful in lowering internalising behavioural issues. (Wolfson, Harkins , Johnson and Marco , 2015).

CHAPTER 7 : CONCLUSION, IMPLICATIONS AND LIMITATIONS AND FUTURE STUDY

7.1 CONCLUSION

Our research's objective is to examine the impact of behaviour intervention on young people' sleep-related problems.Our study premise is that changing a person's conduct will have a major impact on how well they sleep. Another theory is that behaviour intervention will have a substantial impact on how much stress people perceive themselves to be under. The last supposition is that behaviour intervention will have a major impact on people's wellbeing. The participants in the intervention group underwent a total of 10 sessions, which included psychoeducation, sleep hygiene, stimulus control therapy, sleep restriction, and some relaxation techniques like JPMR, sleep relaxation, visulization, mindfulness, and whole body relaxation. . The control group and the intervention group were both examined once the intervention group's sessions were over. As a consequence, all three hypotheses have been proven by the study's findings, which showed that all three variables' results were significant at the.01 level. Consequently, the total findings supported the premise. Despite certain limitations, the research highlights the potential benefits of behavioural therapy in improving overall wellbeing, improving perceived stress levels, and improving sleep quality.By researching and developing these techniques, we may further enhance the wellness and quality of life of persons who struggle with sleep problems, high levels of stress, and diminished wellbeing.

7.2 IMPLICATIONS

These behavioural therapies have the potential to improve sleep quality, stress levels, and general well-being. These findings can help academics and healthcare practitioners make better clinical decisions and learn more about the efficacy of these therapies. The exact tactics, strategies, and protocols that are successful in managing sleep problems, perceived stress, and wellbeing are revealed through behavioural interventions in useful ways. They support therapy suggestions and

aid in determining the most promising intervention strategies. Knowing the underlying processes through which behavioural treatments affect stress, sleep, and overall health. They provide information on the behavioural, physiological, and psychological mechanisms that moderate the impact of various therapies. By focusing on particular mechanisms and identifying possible moderators and mediators of treatment outcomes, this information aids in the refinement and optimisation of therapies.

7.3 LIMITATIONS

Perhaps the most significant limitation of the present study involves the self-reported nature of the findings. A second limitation is it was conducted on students with age range 18-25. Although it is assumed that people who do job also experience similar sleeping issues and the extent to which the findings from this study extrapolate to the larger population of people who do job , and who belongs to age range of more than 25 remains unknown. Another restriction was For people with persistent sleep problems who need specialised therapy, behavioural treatments might not be enough. Narcolepsy, circadian rhythm disorders, and parasomnias are examples of conditions that frequently demand for a comprehensive strategy that combines behavioural techniques with medical interventions like medicine or light therapy. Some sleep issues may be brought on by underlying health issues including sleep apnea, restless legs syndrome, or insomnia. Even though behavioural therapies can address certain contributing variables and assist to improve sleep hygiene, they might not be enough to alleviate the sleep problems caused by these disorders. Medical intervention or a mix of methods may be required in such circumstances. The study's sample size is rather modest. Because of this, it may be difficult to draw clear conclusions regarding the efficacy of the therapies and the findings' capacity to be generalised. For more reliable evidence, more research are required. The absence of long-term follow-up in this study is another drawback. It is challenging to assess the therapies' long-term effectiveness and durability due to their short duration. The self-reported metrics used in this study are: In order to evaluate the results of sleep studies, self-reported measures like sleep diaries or questionnaires are frequently used. Although these measurements offer insightful information, they are prone to recollection bias and social desirability. Although regarded more precise, objective

measurements like polysomnography (PSG) or actigraphy are not always viable in extensive research.

7.4 FUTURE RESERARCH

Longer follow-up periods in studies can be used to assess the sustainability and long-term benefits of behavioural treatments. Understanding the long-term effects of these treatments on sleep, stress, and wellbeing requires research on the persistence of intervention results beyond the immediate post-intervention periods. Clarifying the fundamental processes through which behavioural treatments work will require more research. Understanding the precise psychological, physical, and neurological mechanisms at play will help us better understand how these treatments affect outcomes related to sleep, stress, and wellbeing.

Research could examine the ways in which certain therapies might be customised to various populations, such as various age groups, people with various medical issues, or people with various degrees of stress or wellbeing. Comparative studies that directly contrast various behavioural therapies can also be employed.

Research in the future can look at the variables that mediate or temper the impact of behavioural treatments. It may be possible to improve treatments and create individualised treatment plans by identifying the personal traits, environmental circumstances, or treatment-related factors that affect treatment results. Treatment outcomes can help refine interventions and develop personalized treatment approaches.

By addressing these areas, future research can contribute to a deeper understanding of the effectiveness, mechanisms, and implementation of behavioral interventions for sleeping issues, perceived stress, and well-being. This knowledge can guide the development of more targeted

and evidence-based interventions to improve the sleep, stress management, and overall well-being of individuals. design individualised treatment plans and strategies. Future study can help to better understand the effectiveness, processes, and application of behavioural therapies for sleep problems, perceived stress, and wellbeing by targeting these topics. This information can direct the creation of more specialised, evidence-based therapies to enhance peoples' sleep, stress management, and general well-being.

Examining the efficacy of technology-based therapies, such as smartphone applications, wearable technologies, or online platforms, might be useful given the growing use of technology in healthcare. Investigating how effectively these therapies work for promoting well-being, lowering stress, and improving sleep might provide creative and practical solutions for a wider spectrum of people.

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).

Bootzin RR (1972) . A stimulus control treatment for insomnia. *Proceedings of the American Psychological Association ,* 7 , 395–6.

Bostock, S., Crosswell, A. D., Prather, A. A., & Steptoe, A. (2019). Mindfulness on-the-go: Effects of a mindfulness meditation app on work stress and well-being. *Journal of Occupational Health Psychology, 24*(1), 127–138.

Charles M. Morin, Ph.D., Peter J. Hauri, Ph.D., Colin A. Espie, Ph.D., Arthur J. Spielman, Ph.D., Daniel J. Buysse, MD, Richard R. Bootzin, Ph.D., (1999). Nonpharmacologic Treatment of Chronic Insomnia, *Sleep*, 22(8) , 1134–1156.

Cooper, C. B., Neufeld, E., Dolezal, B. A., & Martin, J. H. (2018). Sleep deprivation and obesity in adults: a brief narrative review. *BMJ Open Sport and Exercise Medicine*, *4*(1).

Dyah G. R. Kareri, Derri R. Tallo Manafe, & Maria Kurniati Ester Payon. (2020). The Effect of Jacobson's Progressive Muscular Relaxation on Sleep Quality in Elderly at Budi Agung Social Institution. *Indonesian Journal of Physical Medicine and Rehabilitation*, *9*(01), 12–18.

Effrey M. Greeson, Michael K. Juberg, Margaret Maytan, Kiera James & Holly Rogers (2014) A Randomized Controlled Trial of Koru: A Mindfulness Program for College Students and Other Emerging Adults, Journal of American College Health, 62:4, 222-233.

Eigl ES, Urban-Ferreira LK, Schabus M. A . Low-threshold sleep intervention for improving sleep quality and well-being (2023). *Front Psychiatry.* 23(14).

El Rafihi-Ferreira, R., Pires, M.L.N. & de Mattos Silvares, E.F (2019). Behavioral intervention for sleep problems in childhood: a Brazilian randomized controlled trial. *Psicol. Refl. Crít.* 32, (5) .

Gradisar, M., Dohnt, H., Gardner, G., & Paine, S. (2011). Behavioral interventions for sleep problems in children and adults with autism spectrum disorder: A review of the literature. *Journal of Autism and Developmental Disorders*, 41(5), 575-584.

Greeson, J. M., Juberg, M. K., Maytan, M., James, K., & Rogers, H. (2014). A randomized controlled trial of Koru: A mindfulness program for college students and other emerging adults. *Journal of American College Health*, *62*(4), 222-233.

Hershner S, O'Brien LM. The impact of a randomized sleep education intervention for college students. *J Clin Sleep Med.* 2018;14(3) , 337–347.

Hiscock, H., & Wake, M. (2002). Randomized controlled trial of behavioral infant sleep intervention to improve infant sleep and maternal mood. BMJ, 324(7345), 1062-1065.

Kredlow, M. A., Capozzoli, M. C., Hearon, B. A., Calkins, A. W., & Otto, M. W. (2015). The effects of physical activity on sleep: *A meta-analytic review. Journal of Behavioral Medicine*, 38(3), 427-449.

Lund, H. G., Reider, B. D., Whiting, A. B., & Prichard, J. R. (2010). Sleep patterns and predictors of disturbed sleep in a large population of college students. *Journal of Adolescent Health,* 46(2), 124-132.

Manber, R., Bernert, R. A., Suh, S., Nowakowski, S., & Siebern, A. T. (2011). CBT for insomnia in patients with high and low depressive symptom severity: Adherence and clinical outcomes. *Journal of Clinical Sleep Medicine,* 7(6), 645-652.

Morgenthaler T, Kramer M, Alessi C, Friedman L, Boehlecke B, Brown T, et al (2006) . Practice Parameters for the Psychological and Behavioral Treatment of Insomnia: An Update.An American Academy of Sleep Medicine Report. *Sleep.(* 29), 1415–9.

Ong, J. C., Shapiro, S. L., & Manber, R. (2008). Mindfulness meditation and cognitive behavioral therapy for insomnia: A naturalistic 12-month follow-up. Explore: *The Journal of Science and Healing*, 4(3), 178-181.

Park J, Kim SY, Lee K (2022) . Effectiveness of behavioral sleep interventions on children's and mothers' sleep quality and maternal depression: a systematic review and meta-analysis. *Sci Rep.* , 12(1) , 4172.

Pilcher, J. J., & Walters, A. S. (2016). How sleep deprivation affects psychological variables related to college students' cognitive performance. *Journal of American College Health,* 50(3), 131-136.

Shapiro, S. L., Astin, J. A., Bishop, S. R., & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial. *International Journal of Stress Management,* 12(2), 164-176.

Sharma, Mahendra P., Andrade, Chittaranjan. (2012) . Behavioral interventions for insomnia: Theory and practice. *Indian Journal of Psychiatry ,* 54(4) , 359-366.

Sparleanu, C. (2021). What makes a good night’s sleep? Diet and Health. Spielman J, Saskin Paul , and Thorpy (1999). Treatment of Chronic Insomnia by Restriction of Time in Bed. *Sleep*. 10(1) , 45-56.

Suganya, E., Arvinth, A., & Vedapriya, D. (2022). Sleep Hygiene Intervention and its Effectiveness in Reduction of Insomnia and Obesity among Undergraduate Medical Students. *Journal of clinical and diagnostic research.*

Wolfson, A. R., Harkins, E., Johnson, M., & Marco, C. (2015). Effects of the Young Adolescent Sleep Smart Program on sleep hygiene practices, sleep health efficacy, and behavioral well-being. *Sleep health*, *1*(3), 197-204.

APPENDICES APPENDIX A: CONSENT FORM

I student of M.A. Psychology is going to conduct a research study on sleep. As a part of this I need to collect and record some personal information from you. All personal information gathered during the study will remain confidential.

CONSENT FORM

I —---------- hereby give my permission to conduct this research test on me. I am aware about its further use and have read and understood the above information.

Age:

Gender:

(Signature)

Pitsburgh Sleep Quality Index

0 Not during the past month

1 Less than once a week

2 once or twice a week

3 Three or times a week

: The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions

. 1. During the past month, what time have you usually gone to bed at night? _____

2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night? _____

3. During the past month, what time have you usually gotten up in the morning? _____

4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.) _____

5. During the past month, how often have you had trouble sleeping because you

a. Cannot get to sleep within 30 minutes

b. Wake up in the middle of the night or early morning

c. Have to get up to use the bathroom

d. Cannot breathe comfortably

e. Cough or snore loudly

f. Feel too cold

g. Feel too hot

h. Have bad dreams

i. Have pain

j. Other reason(s), please describe:

6. During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?

7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

8. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?

9. During the past month, how would you rate your sleep quality overal

10. Do you have a bed partner or room mate?

If you have a room mate or bed partner, ask him/her how often in the past month you have had:

a. Loud snoring

b. Long pauses between breaths while asleep

c. Legs twitching or jerking while you sleep

d. Episodes of disorientation or confusion during sleep e. Other restlessness while you sleep, please describe:

Well Being Questionaaire

{score=5} All of the time
- {score=4} Most of the time
- {score=3} More than half the time
- {score=2} Less than half the time
- {score=1} Some of the time
- {score=0} At no time

Over the past two weeks ..
- ... I have felt cheerful in good spirits.
- ... I have felt calm and relaxed.
- ... I have felt active and vigorous.
- ... I woke up feeling fresh and rested.
- ... My daily life has been filled with things that interest me.

Perceived stress Questionnaire

- {score=0} never
- {score=1} almost never
- {score=2} sometimes
- {score=3} fairly often
- {score=4} very often

The questions in this scale ask you about your feelings and thoughts during the last month.
In each case, you will be asked how often you felt or thought a certain way.
Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is answer each question fairly quickly.
That is, don't try to count up the number of times you felt a particular way but rather indicate the alternative that seems like a reasonable estimate.

- In the last month, how often have you been upset because of something that happened unexpectedly?
- In the last month, how often have you felt that you were unable to control the important things in your life?
- In the last month, how often have you felt nervous and "stressed"?
- {reverse} In the last month, how often have you dealt successfully with irritating life hassles?
- {reverse} In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
- {reverse} In the last month, how often have you felt confident about your ability to handle your personal problems?
- {reverse} In the last month, how often have you felt that things were going your way?
- In the last month, how often have you found that you could not cope with all the things that you had to do?
- {reverse} In the last month, how often have you been able to control irritations in your life?
- {reverse} In the last month, how often have you felt that you were on top of things?
- In the last month, how often have you been angered because of things that happened that were outside of your control?

- In the last month, how often have you found yourself thinking about things that you have to accomplish?
- {reverse} In the last month, how often have you been able to control the way you spend your time?
- In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?