

## **Chapter I**

### **INTRODUCTION**

Sleep plays a vital role in brain function and systemic physiology across many body systems. Problems with sleep are widely prevalent and include deficits in quantity and quality of sleep; sleep problems that impact the continuity of sleep are collectively referred to as sleep disruptions. Numerous factors contribute to sleep disruption, ranging from lifestyle and environmental factors to sleep disorders and other medical conditions. Sleep disruptions have substantial adverse short- and long-term health consequences. Sleep is a biologic process that is essential for life and optimal health. Sleep plays a critical role in brain function and systemic physiology, including metabolism, appetite regulation, and the functioning of immune, hormonal, and cardiovascular systems (Watson et al., 2015a). Normal healthy sleep is characterized by sufficient duration, good quality, appropriate timing and regularity, and the absence of sleep disturbances and disorders (Watson et al., 2015).

Sleep is an essential physiologic process concerned with maintaining many bodily functions and systems. Lack of sleep can produce a number of serious side effects affecting every area of human health. These include errors of judgment, which may kill or maim many people. Other consequences include increased morbidity and mortality, poor performance, increased risk of accidents and injuries, reduced level of functioning, and poorer quality of life. Family life suffers, and many more healthcare visits become necessary.

Poor sleep and sleep deprivation have been associated with cardiovascular and metabolic diseases, impaired mental capacity, and poor motor coordination. Specialists have shown that “healthy sleep” might be the best way to prevent Alzheimer’s disease and that there is a strong relationship between sleep and proper functioning of the immune system. While sleep disorders and the impact of sleep on general health have been extensively studied, the conditions necessary for good sleep, often called “sleep hygiene,” is sometimes overlooked.

### **1.1: Consequences of Insufficient Sleep**

Most people don’t get enough sleep. Going without adequate sleep carries with it both short- and long-term consequences. In the short term, a lack of adequate sleep can affect judgment, mood, ability to learn and retain information, and may increase the risk of serious accidents and injury. In the long term, chronic sleep deprivation may lead to a host of health problems including obesity, diabetes, cardiovascular disease, and even early mortality.

The price of insufficient sleep may be poor health. Study after study has revealed that people who sleep poorly are at greater risk for a number of diseases and health problems. And now the search is on to discover why this might be. Lack of sleep exacts a toll on perception and judgment. In the workplace, its effects can be seen in reduced efficiency and productivity, errors, and accidents. Sometimes the effects can even be deadly, as in the case of drowsy driving fatalities.

Impairment of long- and short-term memory, poor concentration and difficulty in assimilating new things, poor judgment and decreased creativity, and labile emotions, are some serious effects brought about by sleep deprivation. Motor function is reduced, as is the attention span, while the reaction time actually goes up in proportion to the sleep deprivation, leading to poor hand-eye coordination similar to that of a person with a blood alcohol concentration of 0.1%. In persons with bipolar disorder, mania is often precipitated by sleeplessness. Studies of people who were allowed only a little sleep every night found that their levels of stress, anger, sadness, and mental fatigue went up significantly. Hallucinations, depression, impulsive behavior, and suicidal thoughts may be prompted by lack of sleep. Microsleeps, lasting for a few seconds in most cases, which occur without the person knowing it, have been incriminated in many driving and other machinery-related accidents.

Lack of sleep can cause the immune system to produce less antibodies and T-lymphocytes, and thus the body becomes more prone to infection and has reduced capability to fight illness. Insomniacs are at higher risk of colds and influenza. One study on mice has also found that sleep disruption on a regular basis leads to faster tumor growth than when normal sleep is allowed. Rodents who were absolutely deprived of sleep died of fatal infections in a remarkably short time.

## **1.2: Effect of Mobile Phone Usage on Sleep Quality**

Sleep is a basic necessity that constitutes almost one- third of the hours in a human's lifetime. It is a state of reversible unconsciousness, where the body and mind are renewed, repaired, and developed (Karadağ, 2017). Sleep is a cornerstone of adolescent development. Although sleep duration varies, 8-10 hours per night is sufficient for adolescents (Hirshkowitz et al., 2015). Electronic media has a negative effect on the sleep of children and adolescents (Cain & Gradisar, 2010; Hale & Guan, 2015).

Though the media has begun to form an important part of the daily life of young people, the increasing frequency of use of media such as television (TV), computer games, Internet, mobile phone usage threatens healthy sleep. Using the media can change the sleeping time and shorten the sleeping period. Media content can cause extreme excitement or cause recurring voyages (Van den Bulck 2010). Research shows that there is a relationship between mobile phone usage and sleep quality (Bruni et al., 2015; Demirci et al., 2015; Eyvazlou et al., 2016; Mohammadbeigi et al., 2016; Sahin et al., 2013; Yogesh et al., 2014). In other studies on adolescents, it has been found that the use of telephone delayed (Bartel et al., 2015), the sleeping time, making sleeping difficult (Arora et al., 2014), which affects the sleeping negatively (shortening the duration of sleep) (Hale & Guan, 2015). In another research conducted on the subject, it has been determined that despite the frequent use of television and computer, it is not related to sleep variables, whereas mobile phone use is associated with all sleep variables (Mak et

al., 2014). Mobile phones are widely used among young people, and the effect of this habit on their sleep quality is not well-known.

It has been shown in the literature that using smartphones have some potential health effects. A clinical trial by Alsanosi *et al.*, (2013) concluded that making a call for 60 minutes with a mobile phone had an immediate effect on hearing threshold levels examined by pure-tone audiogram in young adults. Participants also reported headache, vertigo, tinnitus, fullness, and deafness. In another study by Alosaimi *et al.*, (2016) 43% of Saudi university students who are using smartphones for long hours had decreased sleeping hours with low energy the next day. A study by Al-Khlaiwi and Meo (2004) showed that there's an association between mobile phone usage and symptoms like headache, dizziness and sleep disturbance. Yogesh *et al.*, (2014) have reported that a mobile phone use of more than 2 hours is related to poor sleep and decreased sleep time in medical students in India. Depression was one of the findings in a study by Thomee, Harenstam and Hagberg (2011) among young adults whose mobile phone usage was high.

Few researchers have explored the associations between bedtime usage of smartphone and sleep quality in adults. Al-Khlaiwi and Meo (2004) showed that there was an association between mobile phone usage and symptoms like headache, dizziness, and sleep disturbance but did not study the bedtime usage. No studies have explored this issue. Few studies have examined the bedtime usage of smartphones mostly in adolescent age group. One Belgium study on Flanders

adults found that those who were frequently using their mobile phones at bedtime had significant poor sleep quality with insomnia symptoms, fatigue and later rise times (Exelmans and Van den Bulck (2016)). A nationwide Japanese study on 95,680 adolescents by Munezawa *et al.*, (2011) showed that mobile phone use for calling and for texting after lights out was associated with short sleep duration, poor sleep quality, excessive daytime sleepiness, and insomnia symptoms.

Minimal research has been conducted on the effect of bedtime usage of smartphones on sleep quality in adults. The international studies were focused more on adolescent age group, and there were no studies carried out locally nor regionally in this regard. Therefore, and due to the high usage of smartphone and its health effects previously discussed especially on sleep, we were interested in examining this issue. Moreover, if it was proven that it affects sleep quality, we would spread awareness about this habit, as it was found that instruction in good sleep hygiene can help workers achieve good quality sleep ( Kakinuma *et al.*, 2010).

### **1.3: Essentials of Screen Time Control**

People are becoming more and more addicted to mobile phones. Whether it is adults or children, whether at the time of dinner or at the parties, the problem of mobile addiction has become more and more serious. More people simply don't realize that they spend a lot of time every day on their apps and games. Using Screen Time, we can better understand the usage of our mobile phones. Whether

it's a game or an app, when we install Screen Time, we are the person with time management awareness. A successful person can manage his time better.

The concept is under significant research with related concepts in digital media use and mental health. Studies show that screen time directly impacts child development, and mental and physical health (Stiglic & Viner, 2019). The positive or negative health effects of screen time are influenced by levels and content of exposure (Sanders et al., 2019). To prevent harmful exposure to screen time, some governments have placed regulations on its usage.

More screen-time has been linked with shorter sleep duration, decreased sleep efficiency, and longer sleep onset delay (Christensen et al., 2016). Increased use of screens in children has also been shown to have a negative impact on the sleep of children (Reichel, 2019). A 2010 review concluded that "the use of electronic media by children and adolescents does have a negative impact on their sleep, although the precise effects and mechanisms remain unclear", with the most consistent results associating excessive media use with shorter sleep duration and delayed bed times (Cain & Gradisar, 2010). A 2016 meta-analysis found that "Bedtime access and use of media devices was significantly associated with inadequate sleep quantity; poor sleep quality; and excessive daytime sleepiness" (Carter et al., 2016). This relationship is because much of the time spent on screens for children is at night, which can cause them to go to sleep later in addition to the blue light from the screens making it more difficult to sleep (Reichel, 2019).

Being physically active during childhood is important for health, including the maintenance of healthy body weight, both in childhood and later life (Boreham & Riddoch, 2001). Evidence suggests physical activity and screen time behaviours are established in early childhood (Birch & Fisher, 1998)) and track over time (Janz, Dawson & Mahoney, 2000). Therefore, it is important that healthy activity patterns should be developed in early age, to set them on a trajectory towards good health and healthy weight throughout life.

#### **1.4: Interrelationship between Sleep and Exercise**

The relationship between exercise and sleep has been extensively investigated over the years (Kline, 2014). Previous studies have noted that proper exercise can alleviate sleep-related problems and help to get an adequate amount of rest. Recent research also suggests insufficient or poor-quality sleep can lead to lower levels of physical activity the following day. For these reasons, experts today believe sleep and exercise have a bidirectional relationship. In other words, optimizing exercise routine can potentially help to sleep better and getting an adequate amount of sleep may promote healthier physical activity levels during the day.

Exercising also improves sleep for many people. Specifically, moderate-to-vigorous exercise can increase sleep quality for adults by reducing sleep onset – or the time it takes to fall asleep – and decrease the amount of time they lie awake in bed during the night. Additionally, physical activity can help alleviate daytime sleepiness and, for some people, reduce the need for sleep medications. Exercise



can also improve sleep in indirect ways. For instance, moderate-to-vigorous physical activity can decrease the risk of excessive weight gain, which in turn makes that person less likely to experience symptoms of obstructive sleep apnea (OSA). Roughly 60% of moderate to severe OSA cases (Kline, 2014) have been attributed to obesity.

The role sleep plays in our physical activity levels has not been studied as thoroughly, and much of the research has focused on differences in physical activity between people with sleep disorders and healthy individuals. However, most of these studies have concluded that those who experience poor sleep are less active than those with healthy sleep cycles. In particular, people with certain sleep disorders are not as likely to exercise during the day. Adults with insomnia tend to be less active than those without insomnia. The same is true for people with OSA and other types of sleep-disordered breathing, though excess weight may also be a factor for this population.

A person's preference for morning or evening activity may also play a role. People who are early risers or "morning people" are more likely to engage in physical activity than those who sleep in or are more active in the evening. In fact, some studies have suggested that exercise can essentially alter one's diurnal preference over time, and may even shift their circadian rhythms. Although many studies to date have established a relationship between high-quality sleep and healthy physical activity levels, the research to date has not conclusively proven that better sleep leads to an increase in physical activity levels.

The development and maintenance of physical fitness can be achieved through a physical conditioning programme. It allows a child's normal growth to be facilitated while also preventing the reversal of performance factors such as strength, endurance, flexibility, speed, and skill. When you participate in a physical conditioning programme, you will notice a number of changes that will help you perform better and recover faster. Strength is built by repetitive muscular activity, and as a result, one is able to produce more power due to faster contraction, resulting in an increase in both power and speed. Regular exercise helps to condition the body so that it can respond more efficiently to emergencies.

### **1.5: Essentials of Fitness Training**

Any physiological action that improves or maintains physical fitness and general health or wellness is referred to as physical exercise. It is carried out for a variety of reasons. These include muscular and cardiovascular system strengthening, sports skill development, weight maintenance or loss, and enjoyment. Frequent and consistent physical activity strengthens the immune system and helps to prevent "affluent diseases" like cardiovascular disease, obesity, heart disease and Type 2 diabetes. It also helps to improve mental health, avoid depression, promote or maintain good self-esteem, and can even improve a person's sex appeal or body image, which is associated to greater levels of self-esteem. Juvenile obesity is a developing global concern, and physical activity may help industrialised countries reduce the effects of childhood obesity.

Previously, fitness was widely defined as the ability to complete the day's tasks without becoming exhausted. However, when automation increased leisure time and lifestyles changed as a result of the industrial revolution, this definition became inadequate. Physical fitness is now viewed as a measure of the body's ability to function efficiently and effectively in work and leisure activities, as well as its ability to stay healthy, resist hypokinetic diseases, and respond to emergency situations. Physical activity is vital for maintaining physical fitness and can help to build and maintain bone density, joint mobility, maintain a healthy weight and muscle strength, enhance your immune system lower surgery risks, and promote physiological well-being. Cortisol levels are also reduced by exercise. Cortisol is a stress hormone that causes weight gain in the abdomen area, making it difficult to lose weight. Cortisol is responsible for a wide range of physical and mental health issues.

### **1.6: Health Benefits of Fitness Training**

Exercise is essential for good health and fitness. It has a variety of health benefits for our bodies. Exercise raises parasympathetic activity while lowering sympathetic activity, lowering resting heart rate. There is more time for blood to fill the ventricles and for oxygen and nutrients to reach the body and cardiac muscles. Exercise lowers blood norepinephrine levels and sympathetic activity, which reduces arteriole vasoconstriction and lowers blood pressure. Due to enhanced mitochondrial activity, the body consumes fat more efficiently for the

same submaximal effort when people exercise. Exercise strengthens the immune system by raising levels of interleukin1 and interferon, reducing the risk of infection. Exercising people have higher bone density due to increased osteoblastic activity. Exercise reduces stress, anxiety, and depression by increasing brain oxygen flow and boosting dopamine, serotonin, norepinephrine, and acetylcholine levels. The metabolic system, particularly lipids, is the most important consequence of exercise on the human body. Coronary heart disease is linked to lipids and lipoproteins.

Physical activity is important for maintaining physical fitness and can help with digestive system regulation, weight management, promoting physiological well-being, joint mobility and muscle strength, building and maintaining healthy bone density, immune system strengthening and reducing surgical risks. According to several research, exercise can improve life expectancy and general quality of life (Gremeaux et al., 2012). When compared to people who are not physically active, people who engage in moderate to high levels of physical activity have a lower mortality risk. Moderate exercise has been linked to the prevention of ageing through lowering inflammatory potential (Woods, 2011).

An individual can improve his fitness by increasing their physical activity. (Dobbins et al., 2013). Increases in muscle size from resistance training is primarily determined by diet and testosterone (Hubal et al., 2005). This genetic variation in improvement from training is one of the key physiological differences between elite athletes and the larger population (Brutsaert & Parra, 2006; Geddes,

2007). Studies have shown that exercising in middle age leads to better physical ability later in life.

Early motor skills and development have also shown to be related to physical activity and performance later in life. Children who have more proficient motor skills early on are more inclined to being physically active, and thus tend to perform well in sports and have better fitness levels. Early motor proficiency has a positive correlation to childhood physical activity and fitness levels, while less proficiency in motor skills results in a tendency to partake in a more sedentary lifestyle (Wrotniak et al., 2006).

### **1.7: Yogic Practices**

Yoga is a method for achieving higher senses through a methodical practise. It is a science of life and an ideal style of life that gives the body rhythm, music to the intellect, harmony to the spirit, and so life symphony. In a nutshell, yoga is a method for attaining overall health, calm, pleasure, and wisdom. Yoga's physical, mental, and spiritual qualities all contribute to a life that is meaningful, beneficial, and noble. As a result, yoga is a form of art, science, and philosophy that has an impact on man's life at every level. Consequently, the effectiveness of yoga must be experience in each and every movement of our day to day lives.

It is a dynamic position, in which the practitioner is perfectly poised between activity and non-activity, being doing and “being done by” the posture. A corresponding mental balance exists between movement and stillness. Yoga teaches that each posture reflects a mental attitude, whether that attitude be one of

surrender, as in a forward bending asana, or the strengthening of the will, through backward bending posture, or the creation of a physical prayer or meditation with the body, as in the practice of padmasana (lotus posture). A posture or asana can be used for rejuvenating specific organs and glands as well as the spine.

The cultural postures are practiced with more intensity. While doing asanas the hatha yogi is aware there are three groups of muscles in the body. For each asana, some muscles are relaxing, some are stretching and some are contracting. The art consists in relaxing deeply the first two groups while contracting forcefully the last group. During the practice, the stretched muscles should be lengthened to the limit. The limit is the pain and one should stop the stretching just before feeling any pain. One should feel a good, intense stretch. During the practice the breath should always be kept under control.

Yoga is a precise and effective method of controlling and strengthening the brain and body in order to gain greater well-being, psyche adjustment, and self-awareness. Though yoga has the power to make us sound more enriched in our lives, still the vast majority do not have the information of orderly routine with regards to yoga. They engage in yogic activities for a short time and then stop when their well-being improves. As a result, the successful aftereffects of yogic practices cannot be completely resolved. Numerous researchers, specialists, analysts and so on, everywhere throughout the world are broadly examining the gainful parts of yoga which urges us to achieve positive wellbeing through yoga. Yoga is a practise that has been practised for thousands of years. It is regarded as

one of India's most important and precious cultural assets. Yoga is an art, philosophy and science that have an impact on man's life at every level.

Yoga is a practise that can help you achieve total health, happiness, and wisdom. Yoga's spiritual, physical and mental qualities all contribute to a life that is meaningful, beneficial, and noble. Today, the whole world is looking to yoga for the answer to various problems modern man is facing. Yoga is the art of living and yogasana is a scientific procedure. Yoga develops the personality of an individual, physically, mentally, morally and intellectually. Yoga is a unique Indian ritual for health and pleasure that dates back thousands of years. It gives the practitioner a healthy body as well as a healthy mind. Yoga is a Sanskrit word that means "to unite." It symbolises the word yoke, which meaning "to join" or "to unify." Yoga is designed to bring the mind and body together in harmony. Yoga is the art of physical and psychological well-being. It synchronizes the elements of the muscle and the brain. It is the main way that can prompt all encompassing wellbeing. Yoga wipes out anxiety which enhances physical and mental wellness. Physical wellness readies the body to perform strenuous action without getting weariness. Mental wellness readies the brain to confront extreme errand and difficulties. Yoga benefits individuals of any age. Yoga is described as the "quieting of the mind's exercises that stimulates complete acceptance of the inborn thought of the Supreme Being" and is enticing to individuals with a philosophical nature. Yogic activities and methods have critical, coordinate consequences for the physical, mental, hypothetical arrangement and on the recovery of the quality

procedure. Yogasanas can be utilized for warm-up, chill off, recovery, combination of psyche and body, actuation or deactivation of the body and as supplemental activities.

### **1.7.1: Health Benefits of Yogasanas**

Substantial research has been conducted to look at the health benefits of yoga from the yoga postures (asanas), yoga breathing (pranayama), and meditation. The information on yoga poses and benefits are grouped into three categories such as physiological, psychological, biochemical effects. Furthermore, scientists have laid these results against the benefits of regular exercise. Practicing yogasana, an individual can remain cool, calm quiet in terms of physical as well as mental (Jain, 2003).

Yoga can help to stretch out tension keep muscles strong and maintain proper alignment. There is no other cure that compares to yogasanas when it comes to exercising the body's internal organs. (Dev, 1999). Yogic activities are said to improve the operations of all of the human body's systems, particularly the central nervous system. Asanas can help you acquire new abilities and methods faster and easier than ever before, b) recover faster during practise and competition, c) relax more to keep focus on the work at hand, and d) eliminate distracting internal feelings and thoughts.

Yoga ensures that an adequate quantity of blood is delivered to all parts of the human body. It aids in the removal of impurities and provides much-needed nutrients to joints. As a result, this will help to slow down the ageing process



while also enhancing energy levels and overall well-being. Yoga can also help to tone a person's muscles, which can become flabby and weak if they are not practised regularly. Weight loss programmes based on yoga are also quite popular all over the world. Yoga is an excellent approach to relieve tension. Yoga can help you develop a tranquil attitude on life as well as a positive mindset.

Yoga increases the range of motion in joints. It may also increase lubrication in the joints. The outcome is a sense of ease and fluidity throughout our body. Yoga stretches not only our muscles but all of the soft tissues of our body. That includes ligaments, tendons, and the fascia sheath that surrounds our muscles. And no matter our level of yoga, we most likely will see benefits in a very short period of time. The greatest gains were in shoulder and trunk flexibility.

One of the most researched aspects of yoga's health benefits is its impact on heart disease. Yoga has long been recognized for its ability to decrease blood pressure and calm the heart rate. People with heart disease, high blood pressure or stroke may benefit from a slower heart rate. Yoga may have an anti-oxidant effect on a biochemical level, according to studies. Yoga has been linked to lower cholesterol and triglyceride levels, as well as improved immunological function.

Yoga is really beneficial to our hearts' health. Because the asanas (yoga poses, positions & postures) maintain blood circulating evenly throughout our bodies as we focus on our breathing, the softer types of yoga lower blood pressure. People with hypertension can greatly benefit from yoga; performing hatha yoga helps lower heart rate and blood pressure. Power yoga, according to many

practitioners, is an effective kind of cardio conditioning that improves core muscles while also keeping blood and oxygen flowing throughout the body.

### **1.8: Need of the Study**

Fitness refers to an individual's capacity to live a complete and balanced life. The individual who is completely fit has a positive and healthy attitude on life. Physical fitness is something that everyone has at some point in their lives. This degree can be viewed in terms of their physical activity and performance capacity. Fitness is the young man's absolute necessary. It breeds self-reliance and keeps man mentally alert. This is also essential at all times to make a success in any activity.

To be healthy, we need to be physically active. “A person who has regular physical activity will have better cardio-respiratory fitness, stronger bones and muscles, higher energy levels, an enhanced sense of emotional well-being, and better weight control. Their risk for a variety of diseases is much lower. Young people need quality sleep to recover, repair, and rest after a day of learning and being active. Getting adequate sleep helps them to wake up and participate fully in their regular activities. It gives them the energy they need to play sport, be creative, socialize, tackle their homework, and stay off the couch! Likewise, being active during the day helps them to sleep better.

Good sleep is a topic that is often neglected, but it is a very important aspect of our everyday life. Sleep has been extensively studied and affects our quality of life in many ways — be it our efficiency at work, our endurance when it

comes to daily tasks, or the prevention of diseases and maintenance of mental health, just to name a few. It strongly influences our capacity to recover both mentally and physically, allows us to store memories, influences our mood, and promotes "growing" in children. It basically impacts every aspect of our life by affecting the way we think, learn, behave, feel, and interact with others.

Regular exercise and physical activity are extremely important and beneficial for long-term health and well-being. General fitness training works towards broad goals of overall health and well-being, rather than narrow goals of sport competition, larger muscles or concerns over appearance. A regular moderate workout regimen can improve general appearance markers of good health, while preventing age or lifestyle-related reductions in health and the series of heart and organ failures that accompany inactivity.

Any physiological action that improves or maintains physical fitness and general health or wellness is referred to as physical exercise. It is carried out for a variety of reasons. These include sports skill development, weight loss or maintenance, enjoyment and muscular and cardiovascular system strengthening. It also helps to avoid depression, can even improve a person's sex appeal or body image, improve mental health and promote or maintain good self-esteem, which is associated to greater levels of self-esteem.

According to new studies, the mind plays a greater role in overall health. Yoga is a powerful tool for dealing with the mind, which aids in the treatment of psychosomatic illnesses. A research of yoga exercises suggests that they have a

positive impact on a person's physical health. Scholarly reviews of the advantages of yoga workouts in various health problems may be found in scientific literature. In every study, yoga interventions were found to be superior to workouts in terms of benefits. All research studies on yoga and exercise that have been located in the scientific literature.

Yoga has been shown to have a wide range of health advantages in previous studies. However, these studies haven't looked at those who don't get enough sleep. One of its most valuable aspects is that it builds up a reservoir of physical health by practicing a sequence of exercises known as asanas, which maintain the body clean and fit. Yogic exercises are necessary for the rapid removal of toxins, excellent blood circulation, and the smooth operation of all internal functions. Yoga is good to the mental abilities as well as the physical aspect of life. Various breathing exercises or techniques calm the mind and brain, allowing for inner peace and the ability to deal with upheavals and issues. As a result, yoga has a place in both everyday life and the more contemplative, idealistic scheme of things. It's essential requirements are to be experienced and savoured (Iyengar, 1999).

Despite the fact that yoga and fitness training improve most aspects of fitness, it is likely to have an impact on psychological variables in women who have poor sleep quality. Some recent texts appear to suggest that fitness training and yoga activities will strengthen all organs and alleviate all psychological issues. The development and regulation of fitness and psychological aspects in women with

poor sleep quality is an important subject that needs to be researched further. Based on the above literature, an attempt was taken to inspect the changes in chosen health-related physical fitness and psychological variables of women with poor quality of sleep due to fitness training, yogic exercises and screen time control.

### **1.9: STATEMENT OF THE PROBLEM**

Screen time is one of the biggest obstacles to physical activity. Time spent in front of a screen is mostly sedentary and often solitary. This can lead to problems with physical and emotional health. Screen time stops them from getting the physical activity they need. Excessive screen time is associated with poor sleep and leads to other health problems. The importance of sleep for health and well-being during adolescence is widely recognized as this is a period of significant growth and development. Despite the compelling evidence that physical activity positively impacts adults' sleep quantity and quality. Therefore, strategies aimed to reduce screen time in this population have started to emerge.

College students are special populations that are enduring a period of great challenges, risks and social developmental transition. Previous studies have shown high rates of mental disorders (typically depression and anxiety) among college students around the world. Besides, a high prevalence of poor sleep quality was found in this population. Insufficient sleep is associated with poor mental health, quality of life, and academic performance. Thus, promoting sleep quality and preventing mental disorders may have broad benefits in this population. Although there are abundant studies showing favorable effects of physical activity on mental

health and sleep quality, the collective evidence continues to emerge and remains inconclusive. Some studies have failed to find an association between physical activity and sleep quality. For that reason, an attempt was taken to inspect the effect of fitness training with yogic exercises, fitness training without yogic exercises and screen time control on chosen health related physical fitness and psychological variables among women with poor quality of sleep.

### **1.10: OBJECTIVE OF THE STUDY**

1. To explore the effectiveness of Fitness training with Yoga and Screen time control (FTYS) on selected physical fitness(health related) and psychological variables among women with poor quality of sleep.
2. To investigate the effect of Fitness training with Screen time control on selected health related physical fitness and psychological variables among women with poor quality of sleep.
3. To investigate the effect of Fitness training with yoga on selected health related physical fitness and psychological variables among women with poor quality of sleep.
4. To explore the effectiveness of Fitness training(FT) on chosen physical fitness(health related) and psychological variables among women with poor quality of sleep.
5. To investigate the differences in their effectiveness in improving the selected health related physical fitness and psychological variables among women with poor quality of sleep.

### **1.11: HYPOTHESES**

It has long been established scientifically that any systematic practice over a long length of time would result in changes in some qualities. Based on this concept, the following hypotheses are drawn:

1. Significant enhancement would be there on chosen health related physical fitness and psychological variables among women with poor quality of sleep due to Fitness Training with Yoga and Screen time control(FTYS).
2. Significant enhancement would be there on chosen health related physical fitness and psychological variables among women with poor quality of sleep due to the effect of Fitness training with Screen time control (FTS).
3. Significant enhancement would be there on chosen on selected health related physical fitness(health related) and psychological variables among women with poor quality of sleep due to the effect of Fitness training with yoga(FTY).
4. Significant enhancement would be there on chosen health related physical fitness and psychological variables among women with poor quality of sleep due to the effect of Fitness training(FT).
5. Significant differences would be there between the experimental groups (FTYS, FTS, FTY & FT) in improving the chosen health related physical fitness and psychological variables of women with poor quality of sleep.

### **1.12: DELIMITATIONS**

This study was restricted to the below mentioned features:

1. Sleep quality of 128 women from Chennai City was tested through Pittsburgh Sleep Quality Index.
2. After the assessment, 100 women with poor quality of sleep from Chennai city were randomly chosen as subjects.
3. The age ranged between 18 to 25 years only were chosen.
4. The following independent variables were selected for this study.  
Group-I – Fitness training with yoga.  
Group-II – Fitness training without yoga.  
Group-III – Fitness training with yoga +screen time control.  
Group-IV – Fitness training without yoga +screen time control.  
Group-V – Control group.
5. Duration of trainings was restricted to 12 weeks.
6. The below mentioned dependent variables were chosen.

#### **Physical Fitness(Health Related) Variables**

1. Cardio Respiratory Endurance(CRE)
2. Muscular Strength
3. Muscular Endurance
4. Flexibility
5. Body Composition-Percent Body Fat

#### **Psychological Variables**

1. Mood States



- a. Tension
  - b. Depression
  - c. Anger
  - d. Fatigue
  - e. Vigor
  - f. Confusion
2. Self Confidence
  3. Self Concept

### **1.13: LIMITATIONS**

The unmanageable factors connected with this study were taken as limitations.

1. The influence of prior experiences, training regimens, motivating variables, and varied physical activities of the participants was not considered.
2. Environmental and hereditary factors that influence mental and physical efficiency were not taken into account.
3. Dietary variations, weather conditions, play field conditions, and other environmental elements that could alter the study's outcome were not taken into account.
4. No attempts were made to determine whether the subjects are having the same degree of motivation during the various stages of training and testing periods.

5. The study's further limitations were regarded to be the individuals' exhaustion and carryover knowledge of the abilities, both of which could impair test performance.
6. As the test administration involves human being, even minor measurement and timing errors that could affect the results were considered as another limitations.
7. The effort put in the subject during the training cannot be controlled.
8. The regular physical activities of the subjects cannot be controlled.

#### **1.14: SIGNIFICANCE OF THE STUDY**

The significant contributions of this investigation are as follows.

1. This findings will help many people avoid taking medications to become in shape and instead rely on their own bodies to feel well.
2. The study's findings may aid persons in comparing and contrasting changes in chosen physical fitness(health-related) and psychological characteristics among women with poor sleep quality before and after training regimens.
3. People will be more mindful of their health, particularly sedentary women as a result of these findings.
4. This project will support research and development in the field of choreography in yoga and sports.
5. This investigation would provide sports scientists with the foundational knowledge they need to envision and perform more research into the effects of various training combinations.

6. This study offers exercise physiologists, coaches, physical educators and yogis the opportunity to objectively evaluate and weigh improvements in physical fitness(health-related) and psychological factors among women with poor sleep quality as a result of training.
7. The data will be used by statisticians and researchers to investigate new topics in the realm of yoga and sports.
8. The study's findings may add to the vast body of information in the fields of yoga and sports.

## **1.15: DEFINITION OF THE TECHNICAL TERMS**

### **1.15.1: Yoga**

The word 'yoga' comes from the Sanskrit word 'yug,' which means 'to unite' or 'to yoke,' with the related sense of 'to utilise.' One of yoga's most important "tools" is "asanas," which assists in the alignment of the body in various postures while including the mind and self completely in order to develop communication between our outward and internal selves (Iyengar, 2001).

### **1.15.2: Fitness Training**

Fitness training consists of five elements of health. These routine includes core exercises, aerobic fitness, balance training, stretching, flexibility and strength training

### **1.15.3: Sleep**

Sleep is a natural part of our life. Sleep is something our bodies need to do. sleep like nutrition and exercise is important for our minds and bodies to function normally (Roy, 2007).

### **1.15.4: Screen time**

Screen time is the amount of time spent using a device with a screen such as a smart phone, computer, television, or video game console.

### **1.15.5: Health Related Physical Fitness**

Health related physical fitness means that efficient functioning of organic systems, so are able to engage in vigorous tasks and leisure activities. Effective way to reduce several risks factors associated with cardiovascular diseases, back pain, diabetes, osteoporosis, and obesity (Swain & Leotholtz, 2007).

### **1.15.6: Cardio Respiratory Endurance**

Ability of the blood vessels, heart rate and lungs to deliver enough oxygen to the body cells to meet out the demands due to long term physical activity (Wener & Sharon, 2009).

### **1.15.7: Muscular Strength**

Strength is one of the importance components of physical fitness and is needed in varying in all types of work and play. Strength is derived from and is directly related to the cross sectional area of the muscles. Strength is considered as one of the aspects of physical fitness. Since strength is needed to perform normal

daily functions, the development and maintenance of a sound level of strength is essential for a healthy life (Yobu, 2010).

#### **1.15.8: Muscular Endurance**

Muscular endurance is the ability to a muscle group of exerts sub maximal force for extended periods (Heyward, 2010).

#### **1.15.9: Flexibility**

Flexibility is the ability of a limb to move freely around a joint through a full range of motion (Deuster, Sing & Pelletier, 2007).

#### **1.15.10: Body Composition**

Body composition describes the relative proportions of fat, bone, and muscle mass in the human body (Wolters, 2014).

#### **1.15.11: Psychology**

Psychology is a science of behavior of the organism .The word `psychology` has come from the Greek word `psyche meaning `soul` and the `logos ` meaning `study`. In ancient times psychology was not a separate discipline. It was a part of philosophy (Gangopadhyay, 2008).

#### **1.15.12: Mood States**

Mood is state of mind, which differs from emotion in that it is less specific, less intense, and less likely to be triggered by a particular stimulus or event . Moods either have a positive or negative valence. Although both mood and emotion are affective states, moods lack a clear referent, may come about

gradually, may last for an extend period of time, and are often of low intensity. Mood and physical health interact with each other.

Mood state refers to “a condition somewhat transient, specific and psychological reaction to an environmental stimulus”(Cox,2002).

#### **1.15.13: Tension**

Tension is an undirected, nonspecific psychological impulsion inferred to exist within the individual that provides the necessary if not sufficient condition for behavior or change in the personality system (Block, 2009).

#### **1.15.14: Depression**

Depression can be defined as a condition that primarily entails a disturbance of mood; this affective disturbance is often characterized by a mood that is sad, hopeless, discouraged or simply depressed (Step toe, 2006).

#### **1.15.15: Anger**

It is “an internal, mental, subjective feeling-state with associated cognitions and physiological arousal patterns” (DiGiuseppe, Titr ate, & Eckhart, 1994).

#### **1.15.16: Fatigue**

Fatigue can be defined as a psychological condition in which the individual`s mental and physical ability to work deteriorates (Sharma & Chandra, 2004).

#### **1.15.17: Vigor**

Vigor is the sense of possessing physical strength, emotional energy and cognitive liveliness (Lopez, 2009).

**1.15.18: Confusion**

The state in which a person experiences or is at risk of experiencing a disturbance in cognition, attention, memory and orientation, of an undetermined origin or onset (Carpenito-Moyet, 2008)

**1.15.19: Self Confidence**

“Self confidences as faith in one`s own abilities.” Thus a self confident of kind person is a man who strikes us, very sure of himself, he is relatively unworried, is not hypersensitive and is usually in good spirits. Self confident people trust their own abilities, have a general sense of control over their lives, and believe that, within reason, they will be able to do what they want to do (Good 1973).

**1.15.20: Self Concept**

Self- concept has been related to sports performance abilities and competencies to deal with the respective demand in training and competition. Positive verbal labels are expected to lead to successful performance that is reinforced by others, which, in turn Reinforces positive self –concept. Many researches showed that self-concept is, perhaps, the basis for all motivated sports behavior (Peart, Marsh & Richard, 1992).