4.1 AIM OF THE STUDY

The present study was aimed to study the effect of cyclic meditation on sleep architecture using polysomnography measures and measuring the indicators of polysomnography measures, subjective rating of sleep and heart rate variability.

4.2 OBJECTIVES OF THE STUDY

Following are the objectives of the study

i. Comparing Polysomnography measures viz., EEG, EMG and EOG following the practice of cyclic meditation (CM) with respect to supine rest (SR) using a Polysomnography equipment.

ii. Comparing the subjective rating of sleep following the practice of CM with SR using a self rated sleep scale.

iii. Comparing the frequency and time domain variables of heart rate variability in CM with SR through a polygraph.

4.3 RATIONALE OF THE STUDY

In several previous studies meditation practice has been shown to reduce physiological arousal (in terms of metabolism, sympathetic activity and levels of attention). However, the results varied across meditation practitioners and techniques. In spite of this inter and intra meditation variability, there remains a view that meditation is a state of hypo-arousal. Hypo-arousal may suggest that mental alertness is reduced Meditation also has been shown to reduce stress and increase feelings of peace and calm. An assumption may be made based on the facts that real-world stress influenced cardio-respiratory functions
during sleep, hence influencing the restorative function of sleep. The present study was planned to measure the sleep architecture (based on Polysomnography variables and self-rated sleep scale) and heart rate variability (both frequency domain and time domain measures) during sleep following the practice of cyclic meditation. This was considered important to get a comprehensive model of the meditation technique, in this case cyclic meditation.

Cyclic meditation has been found to be an effective technique in altering the autonomic status and establishes an equilibrium state in autonomic nervous system. Hence the practice of cyclic meditation might induce the slow wave sleep and establish the autonomic balance.

4.4 HYPOTHESIS

Cyclic meditation combines ‘stimulating’ and ‘calming’ practices, based on a statement in a yoga text, *Karika* (commentary) on *Mandukya Upanisad*, which suggests that this combination will be most helpful to reach mental equilibrium. The underlying idea is that for most persons the mental state is routinely somewhere between the extremes of being ‘inactive’ or of being ‘agitated’. Stimulations are necessary to activate the inactive and calming process leads an agitated mind to balance.

The hypothesis of this study was that the practice of cyclic meditation would induce positive impact in sleep architecture along with heart rate variability during sleep characterized by producing more calmness and serenity and reducing the amount of stress.
4.5 NULL HYPOTHESIS

Null hypothesis postulates that

1. CM has no beneficial effects on Rapid eye movement sleep (REM) and NREM (Non rapid eye movement) states of sleep.
2. CM does not bring about autonomic balance, and
3. Subjective rating of sleep shows no benefits of CM as an intervention.