

Effect of cyclic meditation on sleep architecture and subjective sleep rating

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ABSTRACT

BACKGROUND

Cyclic meditation (CM) is a technique in which yoga postures are interspersed with periods of supine rest in recurring cycles.

AIM AND OBJECTIVES

The present study was designed to

- To compile the ancient information on sleep from ancient Indian scriptures and allied literature.
- To study whether practicing cyclic meditation would influence the sleep structure in normal persons.
- To compare the effects of practicing cyclic meditation in the day time with the effects of supine rest practice, on the heart rate variability during sleep.

SUBJECTS AND DESIGN

Whole night polysomnography measures and the self-rating of sleep were studied on the night following a day in which the participants practised cyclic meditation twice (approximately 23 minutes each time). This was compared to another night when they had two, equal duration sessions of supine rest (SR) on the preceding day. Recordings were made on thirty volunteers (all males, group mean age \pm S.D., 26.3 \pm 4.6 years), from F4, C4 and O₂ electrode sites (EEG) referenced to linked earlobes, and bipolar

electroculography (EOG) and electromyography (EMG) sites. The sessions were one day apart and the order of sessions was randomized. HRV was recorded (i) while awake and (ii) during six hours of sleep (based on EEG, EMG and EOG recordings). This was similarly recorded for the night's sleep following the day time practice of SR.

RESULTS

On the night following CM practice the percentage of slow wave sleep (SWS) was significantly more than the night following relaxation in SR, the percentage of rapid eye movement (REM) sleep was less, and the number of awakenings per hour was also less. Following CM the self rating of sleep based on visual analog scales showed an increase in the feeling that sleep was refreshing, an increase in feeling 'good' in the morning, an impression of an overall increase in sleep duration, a decrease in the degree to which sleep was influenced by being in a laboratory, as well as any associated discomfort. During the night following day time CM practice there were the following changes; a decrease in heart rate, LF power (n.u.), LF/HF ratio, and an increase in the number of pairs of Normal to Normal RR intervals differing by more than 50 ms divided by total number of all NN intervals (pNN50) ($P < 0.05$, in all cases, comparing sleep following CM compared with sleep following SR). No change was seen on the night following SR.

CONCLUSION

Practicing cyclic meditation twice a day appeared to improve the objective and subjective quality of sleep on the following night and shift sympatho-vagal balance in favor of parasympathetic dominance during sleep on the following night.