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**Title of the PhD Thesis: Physiotherapy Intervention on Sleep Parameters in Human Subjects: A Therapeutic Approach**

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### Abstract

#### **Aims and objectives of the studies**

Evidence points out towards a preference for a pharmacological intervention for poor sleep quality hence the idea for the study to work on finding out the physiotherapeutic management for this problem in university population of poor sleepers.

The specific aims and objectives are:

1. To establish the psychometric properties of measures of sleep which have sleep quality as a component in university population of poor sleepers in India ( study 1)
2. To study the effect of physiotherapy treatment on quality of sleep and its related parameters in subjects with sleep problems and its possible mechanism of action (Study 2)

#### **Methodology, results and discussion of the studies**

The work was done as two studies and was carried out at Jamia MilliaIslamia( Central university), New Delhi, India. The studies were approved by the institutional ethics committee before they were started.

**Study 1:** The first study was regarding the psychometric properties of the scales that we were using namely ISI, PIRS ,PSQI and ESS. Subjects (n-100) from people associated with the university setup between the age group of 18-40 years were screened by convenient sampling to select poor sleepers. Twenty five poor sleepers were randomly recruited from this by sealed envelope method for the reliability study of all the scales and validity of ISI, PIRS and ESS. Both the genders were included in the study. Furthermore ten male subjects were recruited from the remaining sample for the validity study of PSQI by convenient sampling. All the tests were

repeated after 1 week to examine the test -retest reliability. For the Validity study of PSQI the subjects were administered PSQI on day 1 independently. Polysomnography was required for the validity of PSQI.

Intraclass correlation coefficients (ICC), standard error of measurement (SEM), Bland-Altman plots, estimation of 95% confidence limits and scatter plot were used to assess reliability. ICC values for the scales ranged from 0.97- 0.86 which indicates excellent reliability. Hence we can use these scales in our population of poor sleepers in the university population.

**Study 2:** For the second study subjects (n-208) were from people associated with the university setup between the age group of 18-40 years. They were screened by convenient sampling to select poor sleepers. All the poor sleepers were randomly recruited to various groups by sealed envelope randomization method. Group 1 was the control group, group 2 was the experimental group with Interferential therapy, self paced walk and hot pack and Group 3 was thermal agent group. Within group analysis revealed a statistically non-significant improvement in Group 1 and 3 in their pre post values whereas group 2 showed a statistically significant improvement in their pre post values. Similarly in between group analysis revealed a significant improvement in all the scales in group 1 as compared to group 1 and 3 whereas there was no statistically significant difference in between group 1 and 3.

## **Conclusions**

In light of the results achieved with our study, it seems safe to conclude firstly that PSQI, ESS, ISI, PIRS are reliable and valid scales to be used in the university population of poor sleepers in India. Secondly that various aspects of subjects sleep quality may be improved by the physiotherapy intervention. Hence, it can be used as a safe apharmacological management for patients with poor sleep quality