A PROSPECTIVE OBSERVATIONAL STUDY ON PREVALENCE AND IMPACT OF SLEEP – DEPRIVED RESTLESS LEG SYNDROME IN SOUTH KERALA

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ABSTRACT

Restless leg syndrome (RLS) also known as Willis- Ekbom's disease, is a condition that causes an uncontrollable urge to move legs, usually because of uncomfortable sensation. **Aim & Objectives**: To evaluate the prevalence and impact of RLS in adults of South Kerala and study the relation of RLS with sleeping pattern, stress, obesity indices. **Methodology**: All the relevant data was collected by using ESS (Epworth Sleepiness Scale) and IRLSSG (International Restless Leg Syndrome Study Group) questionnaire. Answering of all individuals and data collected was subjected to proper statistical analysis in Microsoft Excel Spreadsheet. **Result**: A survey was conducted among 250 individuals, 218 individuals voluntarily participated in the study. Out of which 31 candidates was found to have impaired sleeping-pattern when screened through Epworth Sleeping Scale. 31 candidates were selected for stage2 studies with IRLSSG Questionnaire. 0.46% (n=1) was found to have severe RLS with potential urge to move lower limbs due to cramp like sensation, 2.3% (n=5) candidates was having IRLSSG score between 21- 30 and 7.3% (n= 16) was found to have/susceptible to moderate RLS. Out of 218 candidates, those with impaired sleep and RLS was found to be IT professionals 19.3% (n=6). **Conclusion**: This study helped in identifying individuals susceptible to RLS (not a threat). The study also enabled to find significant association of RLS with

gender, sleep patterns, BMI/obesity, and medical profile. This will ultimately help to improve the sleep, health and quality of life of individuals.

KEYWORDS: RLS, IRLSSG, ESS.

INTRODUCTION

Restless leg syndrome (RLS) also known as Willis- Ekbom's disease, is a condition that causes an uncontrollable urge to move legs, usually because of uncomfortable sensation. Symptoms arises in late afternoon or evening hours, often severe at night. RLS can adversely impact sleep, cognition, quality of life. RLS is related to dysfunction in one section of brain, basal ganglia that is involved in secretion of dopamine. RLS is a neurological sensorimotor disorder[2] which is characterized by the following 4 diagnostic criteria (IRLSSG) : an urge to move that is usually associated with abnormal sensations in the legs, and symptoms that are worsened by rest, relieved by movement, and most severe at night.[1,3] Eventhough the condition was first described in the 17th century,[4] later clinical studies were carried out in the 1940s by Ekbom, who recognized the adverse effects of RLS on sleep and daytime functioning. More recently, research has shown that RLS negatively affects sleep, cognitive function and quality of life.[5] Impact of RLS can be described in terms of sleep disturbance, social deprivations, distressing symptoms, depressive or anxious mood, and side effects of treatments. The measurement of quality of life consequences of RLS by means of adequate approaches and tools may clarify the importance of the RLS impact and give better indications for treatment.[6]

OBJECTIVE

The objectives of the study is:

1. To evaluate the prevalence and Impact of RLS in adults in South Kerala.

2. To study the relation of RLS with sleeping pattern, stress, obesity indices.

METHODOLOGY

A Prospective Observational study (ECPS/ RC-09/2019) was carried out using the information gathered from random population in South Kerala. This study provides the prevalence of RLS assessed in a sample size of 218 individuals. Relevant details regarding the risk factors, their occupation, body weight, sleeping pattern, distressing symptoms of lower limbs was collected and analysed properly and response was recorded. The study was conducted during the month of November 2019.

The study was conducted in a total of 250 individuals selected randomly, out of which 218 individuals voluntarily participated in the study. Inclusion criteria are random population of people with age over 18 years, people who are willing to participate in the study and people with no medical history of neurological diseases. Exclusion criteria are the individuals below 18 years of age and above 65 years, Vulnerable populations - people with chronic painful health conditions like cancer, trauma, psychiatric morbidity, pregnant women, lactating women, pediatric patients.

The survey was carried out by multistage technique.

Stage 1
The stage 1 was done via utilising Epworth Sleeping Scale (ESS) by direct door to door survey. The ESS qualitatively and quantitatively measure sleep status and assess daytime sleepiness. The total score can range from 0 to 24 points, and a score greater than 13 generally indicates excessive daytime sleepiness.

Stage 2
The stage 2 was carried out after completion of stage 1, based on scores of stage 1. The stage 2 was carried out in 31 individuals with an ESS score between 13 – 24. The IRLSSG scale is composed of 10 questions, each of which is graded between 0 and 4 points. Based on the total score, the severity of RLS is considered mild (0–10), moderate (11–20), severe (21–30), or very severe (31–40).

The answering of all individuals and data collected was subjected to proper statistical analysis in Microsoft Excel Spreadsheet.

RESULTS
A total of 218 individuals voluntarily participated in the study. Out of which 31 candidates was found to have impaired sleeping pattern when screened through Epworth Sleeping Scale. 31 respondents was found to have a Epworth Sleeping Score between 13 – 24. Those with impaired sleeping pattern were selected for stage 2 studies with IRLSSG Criterion Questionnaire. From Respondents of stage 2, 0.4% (n=1) was found to have very severe RLS with potential urge to move lower limbs due to cramp like sensation with a IRLSSG score of 33, 2% (n=5) candidates was having IRLSSG score between 21 – 30 with less severe RLS and 6.4% (n= 16) was found to have or susceptible to have moderate RLS. Out of 218

candidates, those with impaired sleep and RLS was found to be IT professionals 19.35% (n=6). Out of 6 respondents with very severe to severe RLS, 4 of them was found to be obese with obesity score between 25 -29.9. It has been established that general and abdominal adiposity is relatively greater in individuals with RLS, and that this correlation is meaningful.[7] Patients with RLS generally have a higher BMI than those who do not. It has been observed that BMI may be a risk factor for clinical spectrum of RLS.
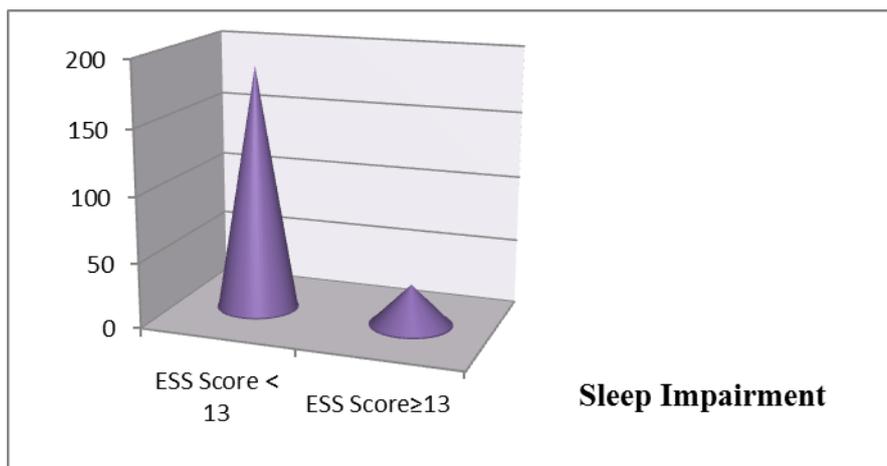
DISCUSSION

Figure 1: Out of 218 individuals, 31 respondents had impaired sleep evidenced by ESS Score greater than or equal to 13 indicating decreased sleep.

Table 1: Specific Symptoms Reported by Restless Legs Syndrome (RLS) Sufferers. Out of 31 respondents with impaired sleeping pattern, the presence of symptoms like unable to be comfortable, pain, urge to move is as described above.

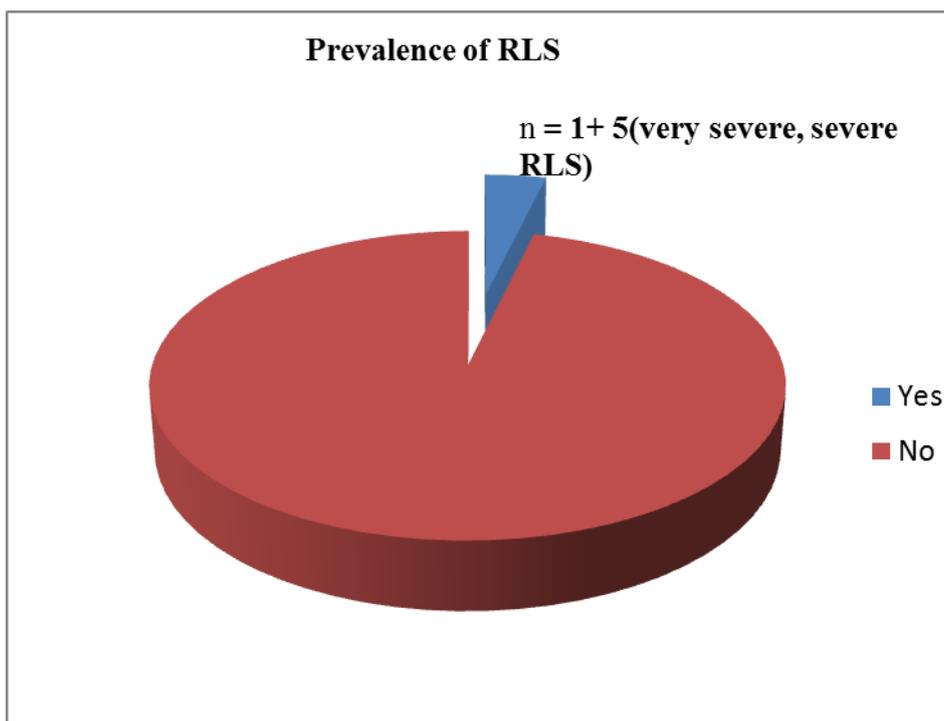| Sensory symptoms	Affected ones
Unable to be comfortable	n = 2 (9.09%)
Pain	n = 1 (4.54%)
Uncomfortable feelings	n = 6 (27.2%)
Inability to stay still/urge to move	n = 1 (4.54%)

Figure 2: From a total of 218 respondents, only one individual (0.4%, IRLSSG Score : 33) was found to have symptoms of very severe RLS and 5 respondents (2.30%) reported symptoms of severe RLS.

Impact of RLS on sleep

When RLS symptoms are severe, insomnia sometime becomes the primary reason for which the patient seeks medical attention. In this case, insomnia should be intended as a subjective experience which may not support objectives like polysomnographic findings. The prevalence of insomnia in RLS population is still unclear, but almost all patients who require a pharmacological treatment present some degree of sleep disturbance Chronic insomnia, secondary to RLS, may even persist after symptoms resolution. In this study 2 out of 6 (33.33%) respondents with very severe to severe RLS suffers from symptoms like difficulty to fall asleep, difficult to stay asleep for a few hours at night and frequent awakenings.

Impact of RLS on quality of life

In the present study, RLS sufferers reported performance-related effects, probably resulting from RLS-related sleep deprivation, such as daytime fatigue, weakness and difficulty in concentrating the day time activities. Sleep disruption has also been associated with negative effects on cognitive function in patients with RLS.[5] Thus RLS, if suspected, should be considered within the differential diagnosis when a patient complains of abnormalities in sleep and other sensorimotor symptoms[1], such as an inability to fall asleep and frequent

wakefulness during the night (IRLSSG Criterion). Thus Restless legs syndrome sufferers had a reduced quality of life.

CONCLUSION

This study helped in identifying individuals susceptible to RLS, although it is not a threat. The study also enabled to find out significant association of RLS with sleep patterns, BMI/obesity, and medical profile. This will ultimately help to redirect the RLS sufferers to clinicians/ specialist, to implement medication therapy if necessary so as to improve the sleep, health and ultimately the quality of life of individuals.

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