



A STUDY TO ASSESS THE PREVALENCE OF STRESS INDUCED RESTLESS LEG SYNDROME IN STUDENTS APPEARING FOR NEET PG EXAM.

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ABSTRACT Restless leg syndrome (RLS) is a frequent sensory dyskinesia disorder of the nervous system. This study aim to determine prevalence of stress induced Restless Legs Syndrome in students appearing for NEET PG exam. This cross-sectional study was undertaken on 150 NEET PG aspirants of DY Patil University, Navi Mumbai. The symptoms of RLS was assessed by self made questionnaire. Out of 150 participants 11% has shown symptoms of RLS. Females to Male ratio is 2:1 out of the participants showing symptoms ; female 56% and male 44%. Due to stress from NEET PG exam participants has sleep deprivation 41% out of 150 participants. In the absence of time and health management , RLS is potentially associated with stress depression, anxiety, sleep disruption, cognitive impairment, decreased quality of life, and menstrual problems which can effect on NEET PG preparation.

KEYWORDS : Restless leg syndrome, stress, anxiety, sleep disorders, examination .

INTRODUCTION

Restless Legs Syndrome (RLS), also known as Willis-Ekbom Disease. Restless Legs Syndrome is a sensorimotor disorder which triggers “an irresistible urge to move the legs, arms, or, less commonly, other body parts, usually accompanied by paresthesias” and sometimes with pain¹. The prevalence of Restless Legs Syndrome varies from two percent to five point nine percent in children of age group between five to seventeen years old². The prevalence is high in the western countries, ranging between five point five percent to fifteen percent , whereas in the Asian populations, the prevalence varies from zero point nine six percent in Japan and one point four percent in China to two point nine percent in India². Common characteristics and symptoms of RLS include; uncomfortable tingling and burning, or urge to move ,sensations that begin after rest and /or worsens at night. The cause of RLS is unknown. However, RLS often runs in families and specific gene variants have been associated with the condition, genes associated with RLS, including MEIS1, BTBD9, and PTPRD, low levels of iron in the brain, abnormalities in the brain's regulation of dopamine (neurotransmitter that plays a key role in controlling movement) also may be responsible for RLS, causing dysfunction of brain to cause uncontrolled movements³. The symptoms may increase with stress. Students tend to stress while preparing for competitive exam i.e NEET PG exam⁴. As stress is aggravating factor for Restless Leg Syndrome which heightens sensitivity of individual to physical discomfort with uncomfortable sensation becomes more intense, is indirectly leads to a cycle of sleep deprivation⁵. Rapid progression and aggravating factors may become more common when RLS starts later in life^{4,5}.

Stress: The body's response to physical, mental, or emotional pressure, it is a wide range of strong external stimuli, both physiological and psychological, which can cause a physiological response called the general adaptation syndrome.⁵ Stress causes chemical changes in the body that can raise blood pressure, heart rate, and blood sugar levels⁷. It may also lead to feelings of frustration, anxiety, anger, or depression^{5,6}. Catecholamine hormones, such as adrenaline or noradrenaline, facilitate immediate physical reactions associated with a preparation for violent muscular action.⁶ These include; acceleration of heart and lung functions , inhibition of stomach and upper-intestinal action, constriction of blood vessels , inhibition of the lacrimal gland (responsible for tear production) and salivation , dilation of pupil (mydriasis) , relaxation of bladder^{5,6}.

Relation of stress and RLS: A reduced level of inhibitory neurotransmitter GABA (Gamma Aminobutyric Acid), with increased level of excitatory neurotransmitter glutamate results in adverse effects of chronic stress. This change in neurotransmitter levels can lead to uncontrolled excitatory actions, such as restlessness, excitation, and nervousness with a reduced ability to inhibit these actions⁷. This change in neurotransmitter levels can lead to uncontrolled excitatory actions, such as restlessness, excitation, and nervousness's with a reduced ability to inhibit these actions^{7,8}.

Relation of Stress and NEET PG exam: The NEET PG (National

Eligibility cum Entrance Test for Postgraduate) exam is a highly competitive medical entrance examination in India⁹. Stress is commonly associated with NEET PG aspirants due to the intense competition, extensive syllabus, and pressure to perform well¹⁰. The relationship between stress and NEET PG students is significant, and it can manifest in several ways. The pressure to excel in the exam can lead to stress, anxiety, and a high workload, impacting mental and emotional well-being¹¹. Many students experience sleep disturbances due to stress, which can negatively affect their ability to study effectively and retain information¹¹. Sleep deprivation may interfere with the ability to acquire and retain knowledge effectively, making it harder for students to grasp and remember study material. The consolidation of memories, especially declarative memory (facts and events), occurs during sleep. Insufficient sleep can impair this process, leading to difficulties in recalling information, both in the short and long term. Sleep-deprived individuals often experience decreased alertness, attention, and reaction time. This can negatively impact performance on cognitive tasks, exams, and other activities requiring focus and precision. Sleep plays a crucial role in creative thinking and problem-solving skills. Lack of sleep may hinder the ability to approach complex problems and find innovative solutions. Sleep deprivation can contribute to increased irritability, mood swings, and heightened emotional reactivity. This can affect interactions with peers and overall emotional well-being^{11,12}.

Objectives of Study :

- 1) To find prevalence of stress induced Restless Leg Syndrome in NEET PG aspirants.
- 2) To find gender predisposition of Restless Legs Syndrome in NEET PG aspirants.
- 3) To find occurrence on sleep deprivation due to stress NEET PG aspirants while preparation.

Material & Methods -

- **Study Design :** Cross sectional survey
- **Research Approach:** The data was collected by direct method with the help of a questionnaire which was validated.
- **Study Setting:** MBBS interns & final year from Navi Mumbai appearing for NEET PG 2024.
- **Population of Study :** Males and females NEET PG aspirants of age group between 20-30years old
- **Sample Size :** 150 subjects
- **Duration of Study :** 6 months
- **Materials Used :** Validated Questionnaire

Inclusion Criteria

- Students appearing for NEET PG 2024
- Male & Female NEET PG aspirants
- Age group of NEET PG aspirants 20-30 years
- MBBS interns & MBBS final year

Exclusion Criteria

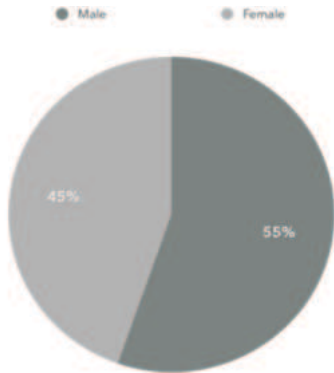
- Parkinson's disease: Parkinson's disease can cause movement problems, including restless legs, but it is usually associated with

other symptoms, such as tremors, stiffness, and bradykinesia.

- Sleep apnoea: Sleep apnoea can cause leg movements during sleep that may be mistaken for RLS, but these movements are not accompanied by the urge to move the legs and usually occur during other phases of sleep.
- Medications: Certain medications, such as antipsychotics, antidepressants, and antihistamines, can cause RLS-like symptoms or worsen existing RLS.
- Pregnancy: Pregnancy can cause temporary RLS symptoms, but these usually resolve after delivery.

Statistic Graph -

1) Gender Distribution:

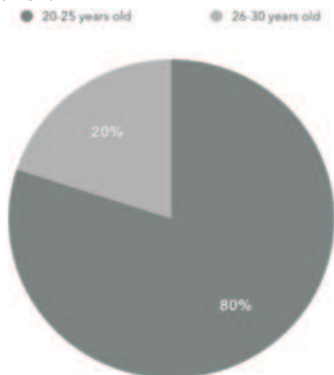


Gender Distribution:

Gender	Total
Male	83
Female	67

Interference: The above pie chart represents the distribution of gender male and female of entire sample of 150 NEET PG aspirants. In which Female is 45% and Male is 55%.

2) Age Distribution:

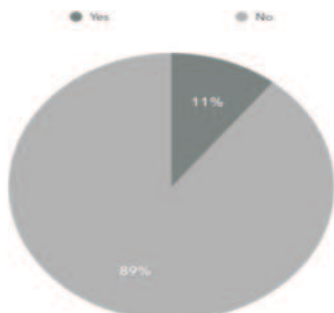


Age Distribution:

Response	Total
20-25 years old	114
26-30 years old	36

Interference: The above pie chart represents the distribution of age groups of entire sample of NEET PG aspirants. In which 76% for the age group of (20-25) and 36% for the age group (26-30).

3) Restless Leg Syndrome Symptoms Experienced by Participants Distribution:

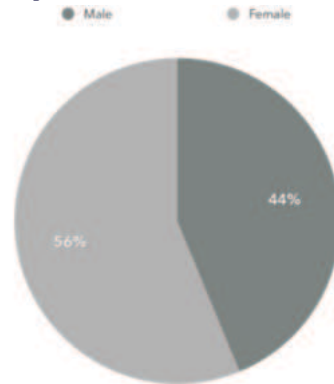


Restless Leg Syndrome Symptoms Experienced by Participants Distribution:

Response	Total
Yes	16
No	134

Interference: The above pie chart represents the distribution of symptoms experienced by entire sample while preparing for NEET PG. In which 89% of the 134 participants didn't experience any Restless Legs Syndrome symptoms while preparing for NEET PG and 11% that is 16 participants experience the symptoms.

4) Gender Predisposition Distribution:

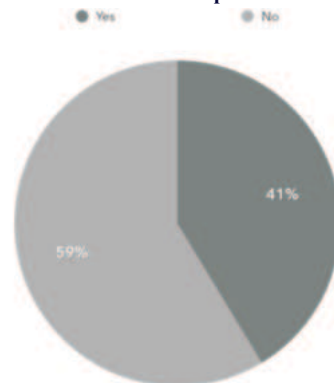


Gender Predisposition Distribution:

Response	Total
Male	7
Female	9

Interference: The above pie chart represents the distribution of Restless Leg Syndrome Symptoms present in male and female of entire sample. In which 44% is male and 56% are females have Restless legs Syndrome Symptoms.

5) Sleep Disturbances in NEET PG Aspirants:



Sleep Disturbances in NEET PG Aspirants:

Response	Total
Yes	62
No	88

Interference: The above pie chart represents distribution of participants encountered difficulty in maintaining sleep schedule due to stress from NEET PG preparation. In which 59% that is 88 participants didn't experience difficulty and 41% that is 62 participants experience difficulty in sleep schedule.

RESULTS

In the given study show prevalence on stress induced Restless Legs Syndrome in students appearing for NEET PG exam is 11%. In which 56% female and 44% male are seen with Restless Legs Syndrome. According to study female are more predominant to this syndrome than male. The present study also shows sleep deprivation in 41% participants.

DISCUSSION

The study on Prevalence of stress induced Restless Legs Syndrome in NEET PG aspirants were done on 150 samples of NEET PG aspirants. Where sample includes final year MBBS 34% and MBBS interns 66%.

In which 45% female and 55% male population present.

In the present study 11% NEET PG aspirants had symptoms present i.e aching, pulling, itching, creeping or crawling sensation in lower limb. The probable cause for sensation can be due to stress from NEET PG exam preparation. Stress can increase levels of cortisol (main stress hormone)¹³. Some cases of RLS may be linked to abnormalities in the dopamine system in the brain. Dopamine is a neurotransmitter that plays a role in controlling muscle movement¹³. Low levels of iron in the brain may contribute to RLS symptoms in some individuals. Iron is important for dopamine production¹⁴. Certain medications, such as antipsychotics or antidepressants, and substances like caffeine and alcohol, can exacerbate RLS symptoms in some people¹⁴.

In the present study 56% females and 44% males show symptoms of RLS. Women's are more prone to RLS as compare to men's. The probable cause can be due to, hormonal changes. Women comparatively to men have low iron level and high estrogen oscillating level which can influence dopamine and glutamate transmission¹⁵.

In the present study 41% believe that due to stress from preparation of NEET PG they have difficulty to maintain a sleep schedule i.e proper 7-8 hours sleep daily¹⁶. Sleep disturbances caused by RLS can create a vicious cycle. Sleep deprivation and fatigue can exacerbate RLS symptoms, making them more intense and frequent. Insomnia can occur due to late night shifts or preparation for NEET PG exam or due to discomfort from RLS symptoms. The sleep disturbances can result in daytime consequences such as excessive daytime sleepiness, mood disturbances, irritability, and reduced concentration and cognitive function¹⁷.

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