

PREVALENCE OF RESTLESS LEG SYNDROME AND ITS ASSOCIATED FACTORS IN UNIVERSITY STUDENTS

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ABSTRACT

BACKGROUND AND OBJECTIVES:

Restless legs syndrome (RLS) is a neurological disease characterized by throbbing, pulling, creeping, or other unpleasant sensations in the legs and an uncontrollable and sometimes increasing urge to move them. Most people who have RLS find difficulty falling asleep or staying asleep. The prevalence of RLS in Mirpur especially in students remain unexplored. To determine the prevalence of Restless Legs (RLS) Syndrome and associated factors in students

METHOD:

A cross-sectional study was conducted from 16 April 2025 to 10 August June 2025 involving 389 students (male, female). Age 18-25 year. Data was collected using a structured questionnaire based on the International Restless Leg Syndrome Study Group (IRLSSG) criteria. Participants were classified into mild, moderate, severe and very severe. Data was analyzed by using SPSS version 27 with statistical significance set at $p < 0.05$.

RESULTS:

Out 389 participants and based on IRLSSG scoring exhibited none 30.8% (n=120), mild 29.8% (n=116) few characteristics while 27.8% (n=120) in moderate category, 10.8% (n=42) had severe symptoms and 0.8% (n=3) had very severe symptoms. The findings showed association between RLS and associated factors among university students and severity of RLS was rated from mild to moderate. ($p < 0.001$).

CONCLUSION:

The study highlights a mild to moderate prevalence of RLS among university students, emphasizing the need for a targeted intervention to manage this condition in academic institutions or settings

Keywords:

Restless leg syndrome, periodic limb movement, sleep problem, International restless leg syndrome study group scale (IRLSSG).

INTRODUCTION

Restless leg syndrome (RLS) affects people's sleeping patterns. The National institute of

health guidelines for diagnosing RLS involve the doctor following a specific guideline in

which person has a strong desire to move their lower limb due to uncontrollable feelings and sensations, increased when moving legs at night and in the evening, they get relaxed by doing any specific movement exercise or stretching however, their urge increases when they are resting at night. (1) Research has found that improper sleep contributes to the occurrence of RLS. (2) The exact mech of RLS is unknown. Researchers believes that the absence of iron in the brain, it affects the Dopamine system is the main reason behind restless leg syndrome. (3) Restless leg syndrome is associated with factors including symptoms frequency, symptoms relief methods circadian rhythms and triggers context. The frequency of RLS varies among individuals ranging from when active or at rest, both and never. Individuals describe that they have increased urge by shaking their lower limbs, when they are at rest or there is immobility such as prolonged sitting. The symptoms can occur at day and night. These symptoms report that there ADLS are more affected due to anxiety and depression. Genetic, psychological and environmental also plays role in enhancing the frequency of RLS. (4) Another contributing factor of RLS is circadian rhythm which is also seen. When there is repeated movement of the legs it triggers multiple other conditions affecting the major system of the body such as it causes functional and cognitive problems. (5) The restless legs syndrome is (RLS) is a condition which causes a higher urge to move legs due to uncomfortable sensations. These symptoms such as an urge are a distinct experience that causes voluntary movements such as rubbing the legs, walking, stretching or other specific movement which provide the individual with relief. (6)

Another associated factor in RLS is trigger context, such as sleeping pattern, stress, inactivity, our research has used a structured questionnaire which is reliable called “International Restless Legs syndrome study group (IRLSSG)” This scale is used for diagnosis purpose. If the patient met all criteria as discussed above patients are diagnosed with RLS. (7)

Ravi Gupta et al., 2014 investigate the clinical presentation of “restless legs syndrome (RLS)” its relationship with gender. They took data

from 173 consecutive patients with unknown cause of RLS and assessing demographic data RLS, sleep problems and family history. “Restless leg syndrome (RLS)” was seen in 173 women which was caused by unknown factor or cause. The sleep issues and family history were common in both genders. Women had tingling sensation while men have more pain. Results showed higher numbers of women with RLS is not linked to conditions present. (8)

Noor Jahan et al., 2024 looked into “how common restless leg syndrome (RLS) and what impact it causes on medical student” and did a cross-sectional study on 200 medical students using standardized question. Which is based on reliable and authentic scale “International restless leg syndrome study group (IRLSSG)” diagnosis criteria. They found 57.5 % males 42.5% female have symptoms of RLS and male more affected. The found RLS is a major sleep disorder affecting males than females among medical student. (9)

Muhammad Faisal Qureshi et at., (2020) investigated the “prevalence of restless leg syndrome (RLS) among healthcare undergraduate students in Karachi” and is cross sectional study surveyed 337 students using “International Rest leg syndrome study group (IRLSSG)” questionnaire. They found 35.6% were diagnosed with RLS and 91.7% have higher prevalence among women. 96.7 of students with RLS did not have medical treatment need an awareness program to improve quality of life. (10)

This research will contribute to the awareness and understanding of RLS, and its associated factors promoting a supportive environment that fosters healthy lifestyles and academic success. Moreover, further studies can also do research, investigating the mechanism or prevention strategies for RLS. The university students are particularly at risk for RLS because of factors such as symptoms frequency, symptoms relief method, triggers context and circadian rhythms.

This research contributes to the awareness and understanding of RLS, and its associated factors. Future studies can investigate how RLS affects students' academic performance, mental health, and overall quality of life, ultimately helping to improve health outcomes for university students. Studying the prevalence of

RLS among students helps physical therapists identify and manage related symptoms early, improving students' overall well-being. The objective of our study is to investigate the “prevalence of Restless Legs (RLS) Syndrome” and its associated factors in students.

Methodology:

The study was designed as a descriptive cross-sectional study which is an observational study conducted over six months to find the prevalence and associated factor of restless leg syndrome among university students. Before starting the data collection formal consent was obtained from the relevant institutional committees. The study population was 389 students age between (18-25). Four institute were used Mohi-Ud- Din Institute of Rehabilitation Sciences, Mirpur University of Science and Technology, and Mohi-Ud-Din Institute of Nursing Sciences. Non probability convenience sampling technique was used. The sample size is calculated using slovens formula. Students were chosen on the bases of inclusion and exclusion criteria, exclusion criteria include

diabetes, pregnancy (10), multiple sclerosis (11, 12) and antidepressants. Data was collected using a reliable and valid tool (13) International Restless leg syndrome rating group (IRLSSG) (14). It assesses the frequency, mood impact, sleep impact, trigger context and relief method of RLS and severity. (15) Data was analyze using SPSS version 27. Descriptive statistics is used for prevalence and demographics while chi-square is used for association of RLS and contributing factors. A value of less than 0.05 is statistically significant.

Results:

Out 389 participants and based on IRLSSG scoring exhibited none 30.8% (n=120), mild 29.8% (n=116) few characteristics while 27.8% (n=120) in moderate category 10.8% (n=42) had severe symptoms and 0.8% (n=3) had very severe symptoms. The findings showed association between RLS and associated factors among university students and severity of RLS was rated from mild to moderate. (p<0.001).

Demographic statistics

TABLE NO:1 Distribution in Gender:

Gender:

Gender	Frequency	Percent
Female	306	78.7
Male	83	21.3
Total	389	100

Female participant who was represented in this sample had frequency (n=306) while male participant was (n=83).

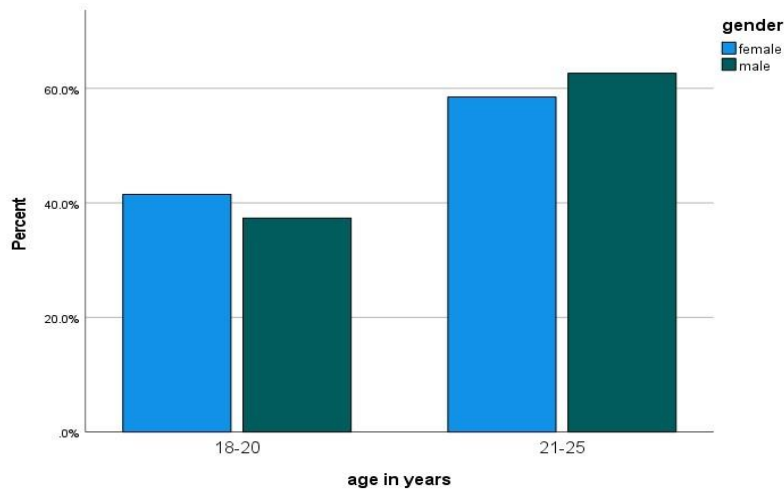


TABLE NO: 2
RLS Total scoring range

	Frequency	Percent
None	120	30.8
mild (1 to 10)	116	29.8
moderate (11 to 20)	108	27.8
severe (21 to 30)	42	10.8
very severe (31 to 40)	3	.8
Total	389	100

The results show that (n=120) of participants experienced no RLS symptoms while (n=116)

had mild symptoms with (n=108) had moderate, severe (n=42), and very severe (n=3) is frequency.

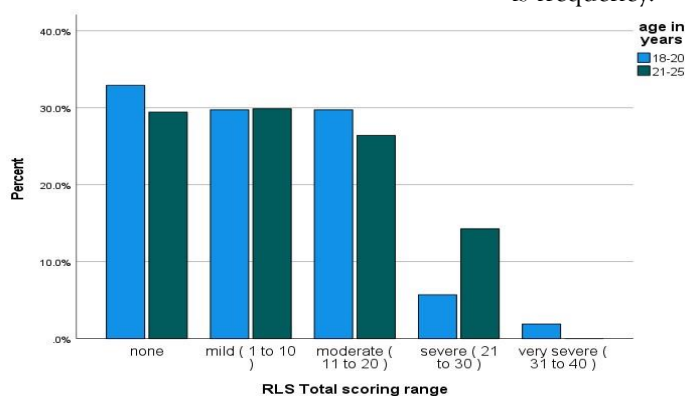


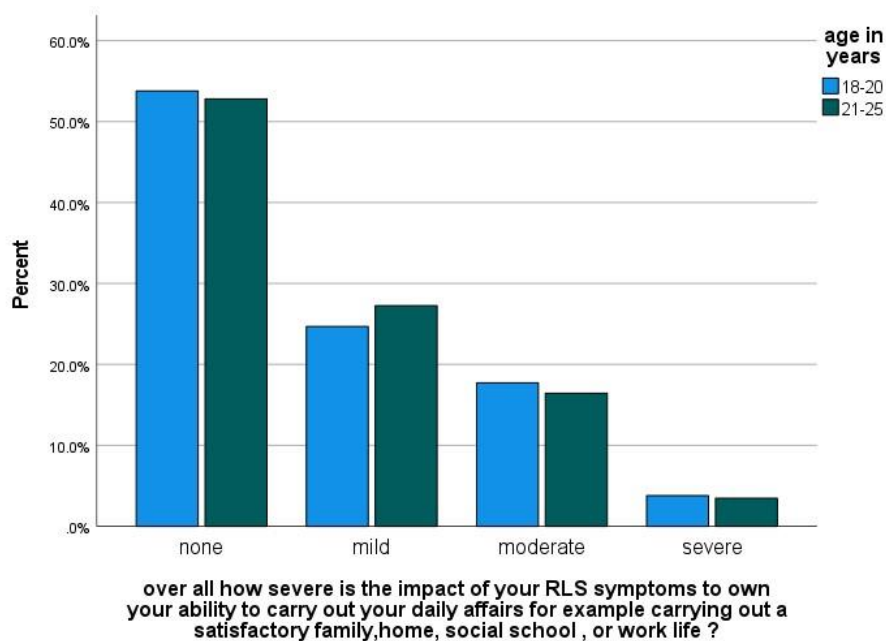
TABLE NO:3

“Over all how severe is the impact of your RLS symptoms to own your ability to carry out your daily affairs for example carrying out a satisfactory family, home, social school, or work life?”

	Frequency	Percent
None	207	53.2
Mild	102	26.2
Moderate	66	17.0
Severe	14	3.6
Total	389	100.0

Table No: 21 Most participants showed that the impact of RLS symptoms did not affect their everyday life as their frequency in none is

(n=207), while some showed mild effect with frequency equal to (n=102), moderate was (n=66) and severe were (n=14).



Discussion:

Our study which was conducted in 2025, about “prevalence of restless leg syndrome”its associated factors among university students in “Mirpur”.Our study has used IRLSSG questionnaire, which involved 389 students with age 18-25. The results found that the students which were enrolled in the study had RLS symptoms which ranges from mild to moderate. The majority of participants were female, which were suffering from RLS and had a higher percentage because sample included more females than males. Significant students had associated factors such as (symptoms frequency, triggers context, circadian rhythm and symptoms relief method), some of them

didn't report such factors. Some of students were in mild category only few of participants had very severe symptoms. These findings showed prevalence of our research regarding RLS frequency in university and confirming that how much proportion is affected like females. Similarly, when comparing these results from previous research they showed differences and similarities. There was another study by Shreyas Belly et al., in India found 8.36%RLS prevalence which was lower than our founding. They found that 36.67% poor sleep quality. Prevalence of restless leg syndrome was parallel to our finding of sleep disturbances. The difference is in prevalence like academic stress regional lifestyle. The

researcher here didn't not used a structured questionnaire which was more accurate such as IRLSSG for categorizing the RLS severity as our study has done RLS severity categorizing. (16) One broader population study found how common is RLS" the findings revealed that 5.52% individuals over (17) years old however some had treatment with physician and some of them are under diagnosed. 22% had received correct diagnosis. (18) This shows that RLS is still undiagnosed, but is a significant issue among university in south Asia students and asks for clinical attention and campus level screening.

Yuan Xu et al., Additionally, research by Ping-ping Ning in 2022 looked into how common is restless legs syndrome in individuals having diabetes mellitus. Our research results similarly shows that students with RLS have moderate to severe sleep disturbances, tiredness and sleepiness. It has more impact on "academic performance", sometimes "mental health and overall quality of life". (19)

Arthur s Walters et al., determined. The circadian nature of RLS we observed are compared with other findings when observed that when symptoms get worse in the "evening or night and improve with activity". This closely correlates with established research of Arthur S Walters in 2023. It is narrative review that RLS is a sensory or discomfort with limb movements follow a circadian rhythm worsen at nighttime, regardless of body position or sleeping pattern. (20) Research by Ping-ping Ning et al, in 2022, did research on "Prevalence of restless legs syndrome" in people with diabetes mellitus. This research shows broader epidemiological data which suggests strong association between RLS and diabetes about 25% in 800,000 participants suffering from diabetes had RLS. But in this research, there is no difference between RLS and diabetic neuropathy which is not properly identified some researchers believe that sometimes this neuropathy could be mistaken for RLS symptoms inflates a number of people thought to have RLS. (21)

Thats why we have excluded all types of diabetes from our research. (22) Moreover, our study found that students experienced symptoms more at rest and during nighttime which is consistent with the RLS features, that was described by IRLSSG. Some student

symptoms were relieved through specific movements and stretching. These things support the diagnostic validity of our findings. In this study we have used a valid diagnostic tool called "International

Restless leg syndrome study group (IRLSSG)" which is reliable and has consistent results. This tool strengthens our conclusions and aligns work with international standards. (23) As a researcher preference, future researches should focus on exploring or evaluating the relationship between RLS symptoms, academic studies stress and more time students on screen time to evaluate how it impacts RLS. Our research has focused on university populations, so our research will provide valuable data to under-researched domain of student's sleep health and provide information regarding its associated effects and will help in the prevention strategies at public health level and institutes. Our associated factors such as circadian rhythms, symptoms relief method, frequency and trigger context can help in the management of RLS defined.

CONCLUSION:

The findings of our study identified that restless leg syndrome is prevalent among university students' population, with most affected participants experiencing symptoms from mild to moderate. The study emphasized associated factors such as symptoms frequency, symptoms relief method, triggers and context circadian rhythms. The findings suggested that RLS is not a recognized condition in students due to lack of awareness. The findings showed that females are affected more due to increase population of females in universities, compared to males. These findings back up the main goal of finding both impact and causes of RLS among university students.

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