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EPIDEMIOLOGY OF RESTLESS LEG SYNDROME IN YOUNG ADULTS: A UNIVERSITY-BASED STUDY

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Abstract

BACKGROUND AND OBJECTIVES:
Restless legs syndrome (RLS) is a neurological disorder characterized by unpleasant sensations in the legs and an uncontrollable urge to move them (Gupta et al., 2014). It is often associated with sleep disturbances, fatigue, and impaired quality of life. Despite its clinical importance, RLS epidemiology among university students in Mirpur remains underexplored. This study aimed to investigate the epidemiology and associated factors of RLS in university students.

METHOD:
A descriptive cross-sectional study was conducted from April to August 2025 involving 389 students aged 18–25 years. Data were collected using the International Restless Leg Syndrome Study Group (IRLSSG) criteria. Statistical analysis was performed using SPSS version 27.

RESULTS:
The highest single response category across all domains was "never experienced symptoms" (n=170) in the circadian rhythm domain, indicating that a substantial proportion of respondents may not be affected by these symptom and symptoms frequency(n=153) occasionall which means that there is a Significant associations between RLS symptoms and associated factors such as symptom frequency, circadian rhythm, and relief methods ($p<0.001$).

CONCLUSION:
RLS symptoms show significant associations with symptom frequency, circadian rhythm, and relief methods. These findings emphasize the role of temporal patterns and coping strategies in guiding effective management of RLS.

INTRODUCTION

Restless legs syndrome (RLS) is a sensorimotor neurological disorder that significantly affects sleep quality and daily functioning. It is characterized by unpleasant sensations in the lower limbs accompanied by an urge to move, particularly during periods of rest and at night (1). Patho physiologically, RLS has been linked to dopaminergic dysfunction and iron deficiency in the brain. Epidemiological

studies suggest prevalence rates ranging from 2% to 24% worldwide, with higher frequency reported among females (2).

University students represent a population at particular risk due to academic stress, prolonged sedentary behaviors, and irregular sleep schedules. RLS symptoms in this group may contribute to poor academic performance, fatigue, and psychological distress (3). Despite these risks, limited research has examined RLS prevalence in young adults within the Pakistani context, particularly in Mirpur. This study was designed to assess the epidemiology of RLS among university students, focusing on its prevalence, associated factors, and implications for health and academic performance.

Methodology:

This descriptive cross-sectional observational study was conducted over a six-month period starting from April 2025. Data was collected at four educational institutions in Mirpur: Mohi-ud-Din Islamic Medical College, Mohi-ud-Din Institute of Rehabilitation Sciences, Mirpur University of Science and Technology, and Mohi-ud-Din Institute of Nursing Sciences. The sample size was 389 students. A non-probability convenience sampling technique was employed. Students aged 18–25 years, both male and female, enrolled in universities in Mirpur were included. Students with diabetes mellitus, multiple sclerosis, pregnancy, or those taking antidepressants were excluded.

The International Restless Leg Syndrome Study Group (IRLSSG) scale was used to assess RLS severity. The 10-item questionnaire measures symptom intensity, frequency, impact on sleep, and daily functioning. Scores range from 0–40 and are categorized into none (0), mild (1–10), moderate (11–20), severe (21–30), and very severe (31–40) (4).

.The approval of this research was taken by institutional review boards, and proper consent was taken from all students involved in the study participation were maintained and confidentiality was preserved.Data Analysis: Data were entered into Microsoft Excel and analyzed using SPSS v27.

Clinical information and demographic data was demonstrated in terms of descriptive statistics and chi square was applied for association $p<0.05$.

Results:

A total of 389 students participated in the study. The majority (59.4%) were between 21–25 years of age, and females constituted 78.7% of the sample. Regarding ethnicity, 63.2% were Kashmiri and 36.8% Punjabi.According to IRLSSG scoring, 30.8% (n=120) reported no symptoms, 29.8% (n=116) had mild RLS, 27.8% (n=108) moderate, 10.8% (n=42) severe, and 0.8% (n=3) very severe. Symptom Characteristics: Symptoms were more commonly reported during rest (31.4%) and worsened at night (25.4%). Relief strategies included moving around (26%) and stretching (24.4%). Sleep disturbance was absent in 52.2% of participants, while 21.1% had mild and 19% moderate disturbance.The highest single response category across all domains was “never experienced symptoms” (n=170) in the circadian rhythm domain, indicating that a substantial proportion of respondents may not be affected by these symptom. Significant associations were observed between symptom frequency, relief methods, circadian rhythm, and severity categories ($p<0.001$).

Demographic statistics

Table no:1 Distribution in Age:

Age in years:

Age	Frequency	Percent
18-20	158	40.6
21-25	231	59.4
Total	389	100

(389) participant was included in this study. 18-20 years old student had frequency (n=158). 21-25 years old student had frequency (n=231).

Table NO:2 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).

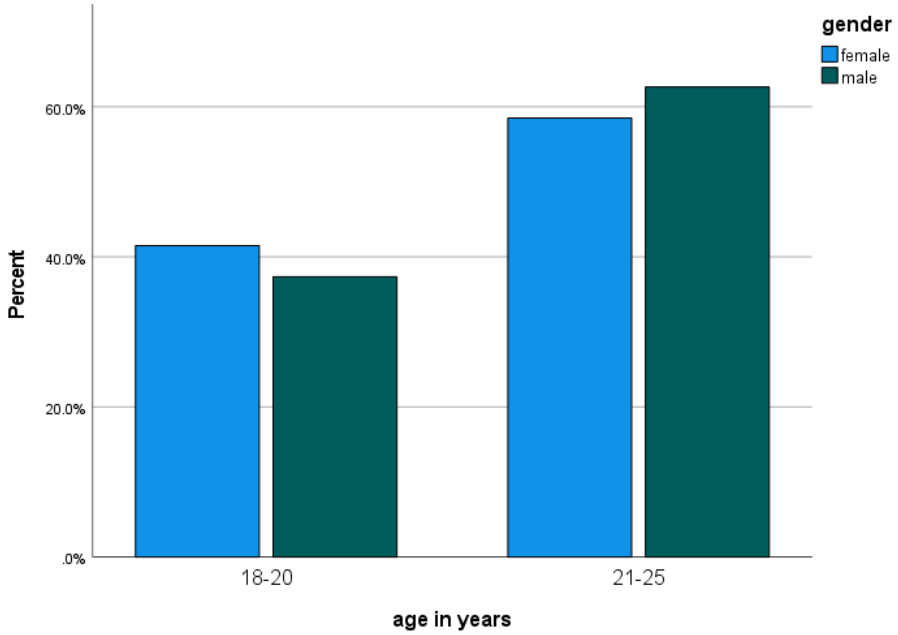
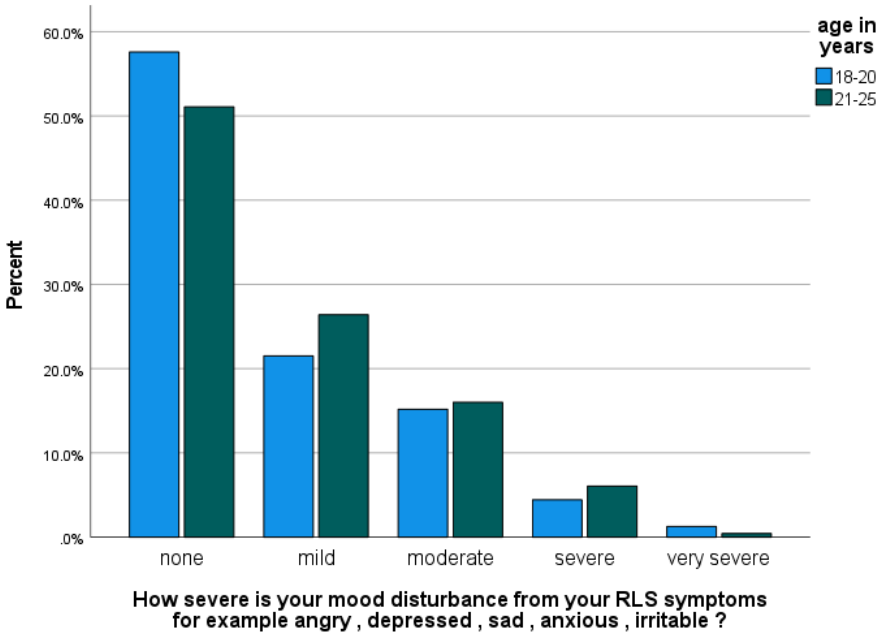


TABLE NO: 3
"How severe is your mood disturbance from your RLS symptoms for example angry, depressed, sad, anxious, irritable?"

	Frequency	Percent
None	209	53.7
Mild	95	24.4
Moderate	61	15.7
Severe	21	5.4
very severe	3	.8

Total	389	100.0

The results showed that RLS symptoms did not affect the mood of overall participants with the frequency of none showing result equal to (n=209), some showed mild disturbance in their mood with its frequency being (n=95), moderate being (n=61), the frequency of severe is (n=21) while that of very severe is (n=3).



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TABLE NO: 4
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.

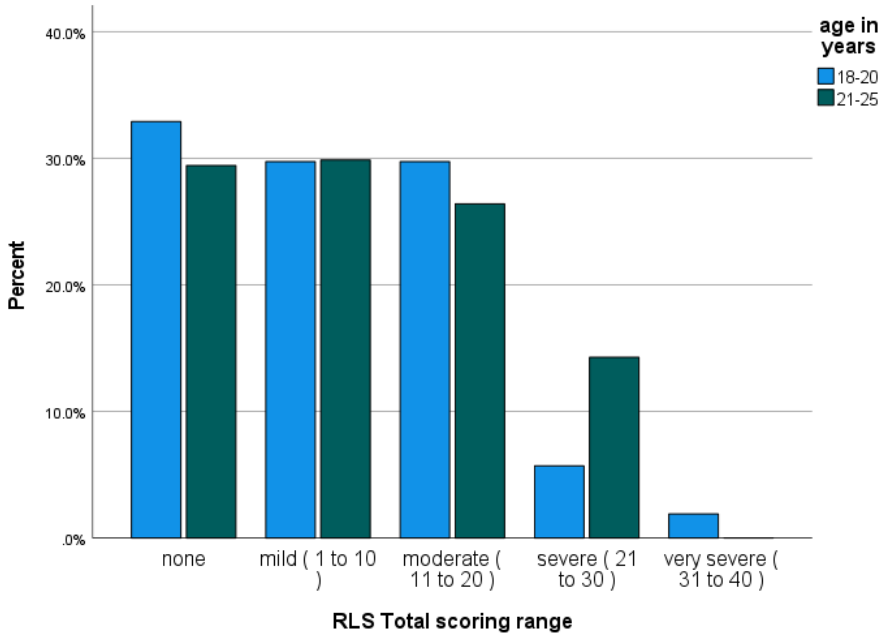


TABLE NO 5
INTERFERENTIAL STATISTICS:

How do u typically relieve discomfort or RLS in your legs or arms?		None	mild (1 to 10)	moderate (11 to 20)	severe (21 to 30)	very severe (31 to 40)
	moving around	8	41	36	16	0
	stretching	11	35	33	15	1
	rubbing	6	8	9	6	1
	Other	11	15	17	2	1
	Never	84	17	13	3	0
	Total	120	116	108	42	3
How do u typically relieve discomfort or RLS in your legs or arms?		None	mild (1 to 10)	moderate (11 to 20)	severe (21 to 30)	very severe (31 to 40)
	moving around	8	41	36	16	0
	stretching	11	35	33	15	1
	rubbing	6	8	9	6	1

	Other	11	15	17	2	1
	Never	84	17	13	3	0
	Total	120	116	108	42	3
when are your symptoms most likely to occur?		none	mild (1 to 10)	moderate (11 to 20)	severe (21 to 30)	very severe (31 to 40)
	when I'm active	2	12	9	7	0
	when I'm at rest	8	50	44	18	2
	both equally	9	25	32	12	1
	neither	58	20	19	3	0
	never	43	9	4	2	0
	Total	120	116	108	42	3
	when I'm active	2	12	9	7	0
When are your symptoms typically worse?		None	mild (1 to 10)	moderate (11 to 20)	Severe (21 to 30)	very severe (31 to 40)
	morning	1	10	21	10	0
	afternoon	0	23	21	7	0
	evening	0	9	14	4	0
	night	7	34	37	18	3
	never	112	40	15	3	0

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Discussion:

This study demonstrates that RLS is present among university students in Mirpur, as described by the IRLSSG scoring with most cases categorized as mild to moderate and the associated factor where symptom frequency is more pronounced and The scoring of IRLSSG and associated factors epidemiology aligns with findings from other South Asian populations, though variations exist due to differences in methodology, diagnostic tools, and cultural contexts (5).

The predominance of female participants with RLS corresponds to existing literature, which attributes gender differences to hormonal variations, genetic predispositions, and greater pain sensitivity (6). Sleep disturbances and fatigue were prominent complaints, echoing prior studies linking RLS with reduced academic performance and psychological stress (7). Comparisons with international studies reveal both similarities and discrepancies. For example, research in Karachi reported a prevalence of 35.6% among healthcare students whereas studies in India and Peru reported 8.36% and 15.3% respectively these differences highlight the importance of context-specific epidemiological investigations. (8)

Our findings also support the circadian pattern of RLS, with symptoms worsening in the evening or night and improving with activity (Walters, 2023). Such patterns have been consistently reported in prior clinical studies. Importantly, most participants were unaware of RLS as a medical condition, underscoring the need for educational and awareness programs.

CONCLUSION:

The study highlights that Restless Legs Syndrome (RLS) symptoms are significantly associated with factors such as symptom frequency, circadian rhythm, and relief methods. These findings suggest that RLS is strongly influenced by temporal patterns and behavioral coping strategies, which can guide clinicians in identifying symptom patterns and tailoring management approaches. Understanding these associations may contribute to improved screening, timely interventions, and better quality of life for individuals affected by RLS..

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