

Research Article

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Association of Restless Leg syndrome with Physical Activity and Musculoskeletal Pain among Medical Students

Dr.Amna Shahid^{1*}, Dr.Faiza Zafar², Dr.Ayesha Javed², Dr.Faiqa Qayyum², Dr.Barera Fatima²

¹Senior Lecturer, Department of physiotherapy, Riphah International University, Lahore, Pakistan

²Department of physiotherapy, Riphah International University Lahore, Pakistan

*Corresponding Author: Dr. Amna Shahid | Received: 12.05.2025 | Accepted: 09.07.2025 | Published: 22.07.2025

Abstract: Restless legs syndrome (RLS) is a neurological sickness characterized by using an uncontrollable urge to move the legs, regularly followed by means of unpleasant sensations. These sensations typically occur when at rest or during periods of inactivity, such as sitting or lying down, and are temporarily relieved by movement. The symptoms usually worsen in the evening or at night, which can disrupt sleep and significantly impact quality of life. The purpose of this study was to determine the frequency and association of restless leg syndrome with physical activity and musculoskeletal pain. A cross-sectional analysis was conducted in Lahore using non-probability convenience sampling techniques and data was collected from 283 students. OMPQ, IPAQ, and RLSRS questionnaires were given to the student to confirm the symptoms and measure their physical activity. The participants who fulfilled the inclusion standards had been included inside the observe and the records changed into gathered from them. The results of the current study showed out of 283 participants 65 were male and 218 were females. Out of 110 participants with a moderate risk of RLS 79 were at low risk while 29 were at moderate risk. Among these 35 were underweight and 14 were overweight. And the participants with moderate risk of RLS 92 were inactive while 8 were minimally active. Conclusion of this study was RLS is strongly associated with physical activity while moderately associated with BMI and musculoskeletal pain among university students in Lahore.

Keywords: Musculoskeletal pain, Physical Activity, Restless Leg Syndrome, Sleep disorders.

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INTRODUCTION

Restless Leg Syndrome (RLS) is a neurological sensorimotor ailment characterized via an uncontrollable impulse to move the legs, regularly followed by using strained sensations. First of all, defined in the seventeenth century, significant scientific investigations began inside the Forties with the aid of Ekbom, who diagnosed its impact on sleep and daylight functionality. Current research indicates RLS's detrimental outcomes on sleep, cognitive skills, and normal satisfactory of lifestyles [1].

Restless Leg Syndrome (RLS) is affecting up to fifteen % of the eneral population, characterized with the aid of abnormal leg (or, less regularly, other body components) sensations that occur all through quiet wakefulness and with a regular circadian at night time. Signs are generally relieved by means of motion or through massaging and cooling the limb. But, whilst actions in motion issues are typically involuntary, in RLS they may be normally carried out with the cause to alleviate the sensory discomfort. Indeed, RLS patients commonly complain a sensation of inner restlessness,

which they rarely is able to describe in element and which is commonly relieved through voluntary pastime, including on foot [2].

The five diagnostic standards supplied by means of the global stressed Legs Syndrome look at organization consist of (I) a preference to transport arms and legs generally related to soreness, (II) motor restlessness, (III) signs and symptoms are worse or solely present at rest (mendacity, sitting) with as a minimum partial and brief alleviation via hobby, (IV) signs and symptoms are worse in the evening/night and (V) the incidence of the above is not best suggested as symptoms primary to another clinical/behavioral condition, but may be secondary to different sicknesses or conditions [3].

Clinically sizeable RLS have an effect on 2–three% of adults. More particularly, RLS includes an in escapable urge to move, frequently observed by sensory discomfort. Other functions required for an analysis of RLS include worsening of symptoms at night, with state of being inactive, and development of relief with movement. Due to these symptoms, the prognosis of the

ailment is usually clinical and based on the symptoms declared by way of the affected person to the medical doctor; but, its miles now and again hard to attain a prognosis even by means of well-known criteria, particularly in people with an extreme clinical presentation [4].

Depression and pain have been found to be related to restless legs symptoms. Associated symptoms such as insomnia, excessive daytime sleepiness, and depression can strain social relationships and overall well-being [5]. The diagnosis of the disorder is mostly clinical and based on the symptoms declared by the patient to the physician; however, it is sometimes difficult to reach a diagnosis even by standard criteria, particularly in those with a severe clinical picture [6,7].

The superiority of RLS is better in older humans and girls. RLS is maximum typically related to iron-deficiency anemia, being pregnant, uremia and polyneuropathies. the superiority of RLS in pregnant ladies is stated to be 21.4%.4 even as RLS can broaden in any trimester, its severity increases with gestational week five [8]. In recent years, there was rising evidence of a clinically relevant relationship among RLS and pain disorders. Associations among RLS and a couple of pain issues have been identified, together with migraine and fibromyalgia. A current Swedish populace based totally study amongst center-aged girls located a robust dating among RLS and multi-site pain, and this affiliation increased with both pain severity and the range of pain websites. The energy of the affiliation highlights the possibility of not unusual causal pathways [9].

A couple of neurological sicknesses like Parkinson's disease, multiple sclerosis, and migraine have been located to be associated with a higher risk for RLS as compared to healthful controls with a pooled occurrence of 14 %, 26 %, and 19 % respectively. More than one cross-sectional study mentioned the prevalence of RLS with excessive variability in occurrence across extraordinary regions and international location [10]. The existing observes describes perceptions of the consequences of bodily hobby on signs of stressed legs syndrome and musculoskeletal pain. Responses numerous broadly on specific reviews with musculoskeletal pain and bodily interest, however a better percentage of participants indicated superb reports with workout than folks who suggested poor stories (seventy-two%–40%, respectively) with physical activity [11].

Regular exercise is associated with better fitness and several researches advise that physical pastime (PA) is useful to sleep. The advantageous affiliation among PA and sleep may be difficulty to multiple moderating factors inclusive of gender, age, frame mass index (BMI), health level, fashionable health and the characteristics of the type of exercise in question [12].

RLS could be very common and has a high incidence in our society. Many researchers look at RLS, however often in affiliation with other comorbidities, no longer in this manner. This take a look at therefore pursuits to: 1) assess the superiority of RLS (restless leg syndrome) in college students, and a couple of) determine the prevalence and association of restless Leg Syndrome with physical interest and musculoskeletal ache. Because of our sedentary lifestyle, problems like RLS are getting very commonplace. If these studies show any association of physical interest with RLS, then it's going to have a sizeable effect on our network with the aid of raising awareness approximately the significance of physical pastime in managing and lessening the effects of RLS.

MATERIALS AND METHODS

A cross sectional study design was used. Data was collected from university students from UMT and RIPHAIH International University of Lahore. The study was completed in 4 months after the approval from ethical committee of Riphah. 283 participants were taken through Non probability convenience sampling technique. Participants were chosen according to the inclusion criteria that was both Gender aged between 18-30 years with International Restless Legs Syndrome Study Group (IRLSSG). Four screening questions were used to assess the prevalence of RLS-related symptoms: Strong urge to move the legs when sitting or lying down, accompanying dysaesthesia, Relief by movement, Worsening of symptoms during the evening/night. Individuals who answered all four questions positively and had symptoms at least 5 times per month were assigned a questionnaire-based RLS-diagnosis [15]. Students having Radiculopathy, chronic Arthritic pains and Neuropathy was excluded along with pregnancy [15].

Following questionnaire were used to collect the data from the targeted population.

1. International Restless leg syndrome study group (IRLLSG) [16]
2. International physical activity questionnaire (IPAQ) [17]
3. Orebro musculoskeletal pain questionnaire (OMPQ) [18]

RESULTS

This cross-sectional study investigated 283 university students (mean age: 29 years) to assess the prevalence and associations of Restless Leg Syndrome (RLS). Results indicated a high prevalence of RLS among participants, with 95.8% reporting symptoms categorized as mild (13.7%), moderate (40.4%), severe (40.4%), and very severe (5.0%) based on RLSRS scores.

Significant findings emerged regarding the relationship between RLS severity and physical activity levels



measured by IPAQ Score. Participants engaging in low levels of physical activity were more likely to report severe RLS symptoms ($p < 0.05$). Conversely, while BMI categories demonstrated a moderate association with RLS severity, musculoskeletal pain levels assessed by OMPQSCORE did not exhibit statistically significant correlations ($p > 0.05$).

These results underscore the potential impact of physical activity on RLS outcomes among university students. The findings suggest that lifestyle factors, particularly levels of physical activity, may play a crucial role in the manifestation and severity of RLS symptoms in this demographic. Further research is warranted to elucidate the underlying mechanisms and to explore targeted interventions aimed at managing RLS in young adults.

DISCUSSION

According to current study in which out of 283 participants 12 of them did not have RLS while 271 had positive RLS. Out of these 37 participants had mild RLS, 110 Had moderate RLS, 110 had severe RLS and 14 Had very severe RLS. Significant analysis showed a clear link between RLS and physical activity levels ($p < 0.05$), indicating that higher physical activity was associated with lower incidence of RLS during pregnancy. The mean age of participants was 27.3 years. These findings highlight the prevalence of RLS suggest that promoting physical activity may help reduce its occurrence among females. This study shows association of RLS with physical activity and is comparable to our study [16]. According to the results, while 37.4% of them reported having MSK pain. The result underscore the need for increase clinical and academic focus to better understand the overlap between MSK pain and RLS, since they may point to common pathophysiological pathways between both diseases [15].

Participants with higher BMI were more likely to have a history of smoking, hypertension, and to have worked rotating night shifts (women only). They also reported lower exercise levels compared to lean participants. RLS prevalence was 6.4% in women and 4.1% in men, with 2.7% of women and 1.7% of men experiencing symptoms ≥ 15 times per month. Prevalence increased with age and Caucasians had higher rates (6.6% in women, 4.2% in men) compared to non-Caucasians (3.8% in women, 2.4% in men). These findings highlight BMI, lifestyle, and ethnic factors influencing RLS prevalence, suggesting areas for targeted research and interventions [18].

CONCLUSION

The study concluded that RLS is more prevalent among university students. It is strongly associated with physical inactivity. RLs are weakly associated with pain and BMI.

LIMITATIONS

- The study's focus on university students may limit the generalizability of findings to other demographic groups or age cohorts.
- Variations in lifestyle, healthcare access, and educational background among different populations could influence the prevalence and associations of restless leg syndrome (RLS) with physical activity and musculoskeletal pain beyond the study's specific sample, potentially warranting broader investigations for comprehensive understanding.
- Social anxiety and differences in education and health awareness led to challenges in accurately self-reporting RLS and musculoskeletal pain among participants. Furthermore, the time-consuming and difficult physical data collection process added to the study's complexities, impacting the overall reliability of the findings.

RECOMMENDATIONS

- Conduct longitudinal studies to investigate the long-term impact of physical activity on restless leg syndrome (RLS) among students, exploring how different intensities and timings of exercise influence symptom severity and progression. Findings will inform targeted interventions aimed at preventing and managing RLS effectively in educational settings.
- Educate students about the potential link between iron deficiency and restless leg syndrome (RLS), emphasizing the importance of balanced nutrition and regular screenings. Healthcare providers should collaborate with schools to implement routine assessments and provide dietary counseling to mitigate RLS symptoms and improve overall health outcomes.
- Integrate comprehensive health education modules into the school curriculum, focusing on sleep hygiene practices and stress management techniques to support students in preventing and managing restless leg syndrome (RLS). By empowering students with practical knowledge and skills, educators can foster a healthier learning environment conducive to academic success and overall well-being.



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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest

The authors declare no conflict of interest.

REFERENCES

- Allen RP, Walters AS, Montplaisir J, Hening W, Myers A, Bell TJ, et al. Restless legs syndrome prevalence and impact: REST general population study. *Archives of internal medicine*. 2005;165(11):1286-92.
- Antelmi E, Mogavero MP, Lanza G, Cartella SM, Ferini-Strambi L, Plazzi G, et al. Sensory Aspects of Restless Legs Syndrome: clinical, neurophysiological and neuroimaging prospectives. *Sleep Medicine Reviews*. 2024;101949.
- Broström A, Alimoradi Z, Odzakovic E, Kaldo V, Jernelöv S, Lind J, et al. Quality of life among patients with restless legs syndrome: A systematic review and meta-analysis. *Journal of Clinical Neuroscience*. 2024;122:80-91.
- Koo BB, Bagai K, Walters AS. Restless legs syndrome: current concepts about disease pathophysiology. *Tremor and Other Hyperkinetic Movements*. 2016;6.
- Auvinen P, Koponen H, Kautiainen H, Korniloff K, Ahonen T, Vanhala M, et al. The influence of restless legs symptoms on musculoskeletal pain in depression. *Scandinavian journal of pain*. 2020;20(3):603-10.
- Haghshenas M, Veisani Y, Sahebi A. Restless legs syndrome variants: A systematic review. *Heliyon*. 2024.
- Cederberg KL, Sempere VP, Lin L, Zhang J, Leary EB, Moore H, et al. Proteomic insights into the pathophysiology of periodic limb movements and restless legs syndrome. *Sleep Health*. 2024;10(1):S161S9.
- Kaplan Ö, Başer M, Çağlı F. Use of Integrative Medicine Practices by Pregnant Women with Restless Legs Syndrome. *Journal of Nursology*. 2024;27(1):29-37.
- Hoogwout SJ, Paananen MV, Smith AJ, Beales DJ, O'Sullivan PB, Straker LM, et al. Musculoskeletal pain is associated with restless legs syndrome in young adults. *BMC musculoskeletal disorders*. 2015;16:1-9.
- Talaia AM, Elnahhas A, Talaia NM, Abdelaal A. Prevalence of restless legs syndrome in adults with epilepsy: a systematic review and meta-analysis of observational studies. *Sleep Medicine*. 2024.
- Cederberg KL, Sikes EM, Mignot E. Perceptions of exercise and restless legs syndrome: Results from a nationwide survey. *Journal of Sleep Research*. 2024;33(1):e13980.
- Bjornsdottir E, Thorarinsdottir EH, Lindberg E, Benediktsdottir B, Franklin K, Jarvis D, et al. Association between physical activity over a 10-year period and current insomnia symptoms, sleep duration and daytime sleepiness: a European population-based study. *BMJ open*. 2024;14(3):e067197.
- Obeidat RF, Alqaydi M, Alzaabi M, Almarashda A, Alblooshi M, Alzaabi A. Morning Versus Evening Physical Activity, Sleep Quality, and Psychological Well-Being Among Healthy Adults in the UAE. *Sleep Medicine Research*. 2024;15(1):59-66.
- Allen RP, Kushida CA, Atkinson MJ. Factor analysis of the International Restless Legs Syndrome Study Group's scale for restless legs severity. *Sleep Med*. 2003;4(2):133-5.
- Craig CL, Marshall AL, Sjöström M, Bauman AE, Booth ML, Ainsworth BE, et al. International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc*. 2003;35(8):1381-95.
- Linton SJ, Boersma K. Early identification of patients at risk of developing a persistent back problem: the predictive validity of the Orebro Musculoskeletal Pain Questionnaire. *Clin J Pain*. 2003;19(2):80-6.
- Saleem S, Ahmad A, Gillani SA, Hanif A, Sharif Z. Restless leg syndrome and its association with physical activity during pregnancy. *Annals of King Edward Medical University*. 2020;26(3):474-9.
- Gao X, Schwarzschild MA, Wang H, Ascherio A. Obesity and restless legs syndrome in men and women. *Neurology*. 2009;72(14):1255-61.

