SEVERITY OF RESTLESS LEG SYNDROME AMONG PREGNANT FEMALES: A CROSS-SECTIONAL ANALYSIS

Original Research

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ABSTRACT

Background: Restless legs syndrome (RLS), also known as Willis-Ekbom's disease, is a neurological movement disorder marked by unpleasant leg sensations and an irresistible urge to move the legs. Pregnant women are particularly vulnerable, with a two- to three-fold increased risk compared to the general population. The prevalence of RLS tends to peak in the third trimester, contributing to sleep disturbance, mood disruption, and impaired quality of life. Despite growing recognition of this condition, limited data exist on its severity during pregnancy, especially in the later stages.

Objective: To assess the severity of restless legs syndrome among third-trimester pregnant women using a standardized rating scale.

Methods: This descriptive cross-sectional study was conducted at Ghurki Trust Teaching Hospital over six months (July–December 2022). A total of 80 pregnant women in their third trimester, aged 20 to 39 years, with a clinical diagnosis of RLS were included. Women with psychiatric illness, high-risk pregnancies, or unwillingness to participate were excluded. Data were collected using the International Restless Legs Syndrome Study Group (IRLSSG) Rating Scale, a validated 10-item questionnaire scored from 0 to 40, categorizing severity as mild, moderate, severe, or very severe. Informed consent was obtained, and confidentiality was maintained. Data were analyzed using SPSS version 21, with results presented as descriptive statistics including frequencies, percentages, means, and standard deviations.

Results: Among the 80 participants, the mean age was 26.76 ± 4.42 years, and the mean weight was 68.43 ± 9.13 kg. Severity assessment revealed that 3.8% of participants had mild RLS, 40.0% moderate, 55.0% severe, and 1.3% very severe. Sleep disturbance was absent in 8.8%, while 20.0% reported mild, 32.5% moderate, 31.3% severe, and 7.5% very severe disturbance. Mood disturbance was absent in 7.5%, mild in 21.3%, moderate in 38.8%, severe in 18.8%, and very severe in 13.8%.

Conclusion: The study demonstrated that the majority of pregnant women in their third trimester experienced RLS at a moderate to severe level, highlighting its considerable impact on maternal well-being. These findings underscore the importance of early recognition and supportive management strategies to improve maternal health outcomes.

Keywords: Depression, Leg Movements, Pregnancy Trimester Third, Quality of Life, Restless Legs Syndrome, Sleep Disorders, Women's Health

INTRODUCTION

Restless legs syndrome (RLS) is a common neurological sensorimotor disorder characterized by uncomfortable sensations in the legs accompanied by an irresistible urge to move them, usually occurring during periods of rest and more prominently at night (1). Also referred to as Willis-Ekbom's disease, RLS is classified into primary (idiopathic) and secondary forms, with pregnancy, iron deficiency anemia, and uremia identified as the most frequent causes of the secondary type (2). Pregnancy itself brings about profound anatomical, physiological, and biochemical changes, many of which influence women's physical and emotional health, thereby lowering overall quality of life (3). Among these complications, RLS emerges as a notable concern since it has been associated with poor sleep quality, excessive daytime sleepiness, and impaired daily functioning, ultimately diminishing health-related quality of life in affected women (4-6).

Epidemiological evidence suggests that pregnant women are at least two to three times more likely to develop RLS compared to the general population (7). The prevalence of RLS is particularly high during the third trimester, with some studies linking its occurrence to parity and maternal physiological changes (8). Several mechanisms have been proposed to explain pregnancy-related RLS, including iron and folate deficiency due to increased fetal demands, hormonal fluctuations, psychological factors, lumbosacral nerve compression, and venous congestion (9). Moreover, because RLS negatively impacts sleep, it has been linked to maternal complications during pregnancy and delivery as well as potential adverse effects on fetal growth and development (10). Endocrine changes, specifically elevations in estradiol, progesterone, and prolactin during the later stages of pregnancy, are also thought to play a role in triggering or worsening the syndrome (11).

Although previous studies have explored the characteristics, risk factors, and management approaches for RLS in pregnancy, the severity of RLS specifically in the third trimester remains insufficiently investigated. Understanding its extent and burden in this critical phase of pregnancy is essential for guiding clinical management and improving maternal and neonatal outcomes. Therefore, the present study aims to assess the severity of restless legs syndrome in the third trimester among pregnant women using the standardized RLS rating scale, with the ultimate objective of providing evidence that may support practitioners, gynecologists, and physical therapists in designing effective treatment strategies.

METHODS

The study was designed as a descriptive cross-sectional analysis and conducted over a six-month period from July 2022 to December 2022 at Ghurki Trust Teaching Hospital. The population consisted of pregnant females in their third trimester who had been diagnosed with restless legs syndrome. A non-probability convenient sampling technique was employed, and participants were recruited using a census method in which all individuals meeting the eligibility criteria were invited to participate. This approach resulted in a total sample size of 80. Inclusion criteria comprised pregnant women in the third trimester with a confirmed diagnosis of restless legs syndrome, while exclusion criteria included women with high-risk pregnancies, those with psychiatric disorders, and non-cooperative participants. Data collection was carried out using the Restless Legs Syndrome Rating Scale (RLSRS) developed by the International Restless Legs Syndrome Study Group (IRLSSG). This instrument, which has been validated in prior research (12), consists of 10 items rated from 0 (none) to 4 (very severe), yielding a total score ranging from 0 to 40. The cumulative score allows classification into categories of mild, moderate, severe, or very severe RLS. Only participants who met the diagnostic criteria for RLS were assessed using this scale, ensuring precision in severity measurement.

All collected data were entered into SPSS (version 21) for analysis. Descriptive statistics, including frequencies and percentages, were applied to summarize participant characteristics and severity scores, while cross-tabulations were used to examine categorical variables. This analytical approach allowed for a comprehensive description of the severity distribution of RLS among the study population. Ethical considerations were strictly observed. Approval for the study was obtained from the institutional review board or relevant ethical committee prior to data collection. Written informed consent was obtained from all participants after providing them with detailed information regarding the purpose of the study, the voluntary nature of participation, and the assurance of confidentiality. Participant anonymity was safeguarded throughout the study, and no identifiable personal information was disclosed at any stage.

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RESULTS

The study included 80 pregnant women in their third trimester diagnosed with restless legs syndrome. The age of participants ranged from 20 to 39 years, with a mean of 26.76 years (SD ±4.42). The weight of participants varied between 45 kg and 97 kg, with a mean of 68.43 kg (SD ±9.13). In terms of symptom burden, discomfort related to restless legs syndrome was reported as mild in 20.0% of participants, moderate in 38.8%, severe in 28.8%, and very severe in 12.5%. Sleep disturbance attributed to the condition was absent in 8.8% of participants, while 20.0% experienced mild disturbance, 32.5% had moderate disturbance, 31.3% faced severe disturbance, and 7.5% reported very severe disruption of sleep.

The distribution of overall RLS symptoms showed that 2.5% of participants were asymptomatic, 20.0% reported mild symptoms, 46.3% experienced moderate symptoms, 17.5% had severe symptoms, and 13.8% reported very severe symptoms. Mood disturbance related to RLS was absent in 7.5% of participants, while 21.3% reported mild disturbance, 38.8% moderate disturbance, 18.8% severe disturbance, and 13.8% very severe disturbance. The severity distribution of RLS symptoms overall revealed that only 3.8% of participants experienced mild symptoms, 40.0% had moderate symptoms, 55.0% suffered from severe symptoms, and 1.3% experienced very severe symptoms. This demonstrated that the majority of pregnant women fell into the moderate and severe categories, with very few cases reported at the extremes.
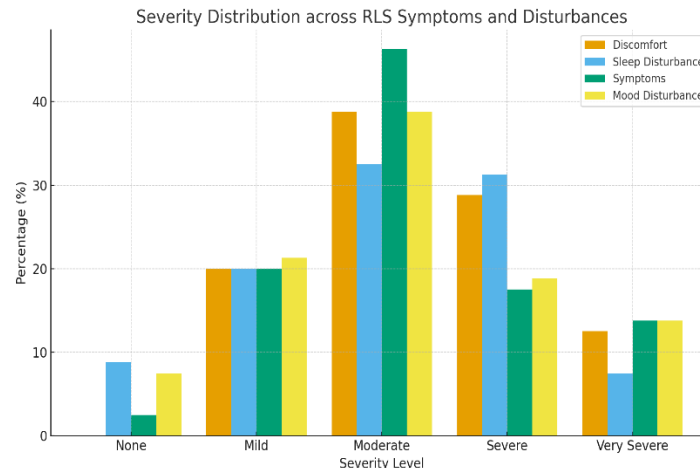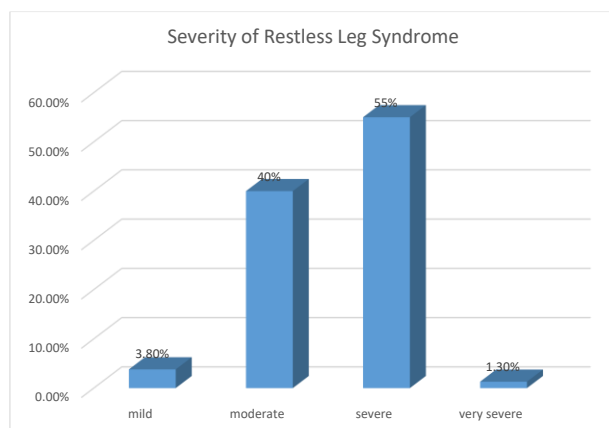
Table 1: Demographic Characteristics of participants

	Descriptive Statistics			
	Minimum	**Maximum**	**Mean**	**Std. Deviation**
Age of participants	20.00	39.00	26.7625	4.42445
Weight of participants	45.00	97.00	68.4250	9.13163

Table 2: Descriptive Statistics of Overall Restless Leg Syndrome

		Frequency	**Percentage**
RLS Discomfort	**Mild**	16	20.0
	Moderate	31	38.8
	Severe	23	28.8
	Very severe	10	12.5
Sleep Disturbance from RLS	**None**	7	8.8
	Mild	16	20.0
	Moderate	26	32.5
	Severe	25	31.3
	Very severe	6	7.5
RLS Symptoms	**None**	2	2.5
	Mild	16	20.0
	Moderate	37	46.3
	Severe	14	17.5
	Very severe	11	13.8
Mood Disturbance	**None**	6	7.5
	Mild	17	21.3
	Moderate	31	38.8
	Severe	15	18.8
	Very severe	11	13.8
Total		80	100%

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Bar Chart Showing Severity of Restless Leg Syndrome

Severity of Restless Leg Syndrome

Severity Distribution across RLS Symptoms and Disturbances

DISCUSSION

The present study was conducted to determine the severity of restless legs syndrome (RLS) among women in the third trimester of pregnancy. The findings demonstrated that more than half of the participants experienced severe symptoms, while only a small proportion reported mild or very severe manifestations. This distribution highlighted the significant burden of RLS in late pregnancy and emphasized the importance of addressing it as a clinical concern. RLS is recognized as a prevalent neurological condition and a common sleep disorder during pregnancy, with reported prevalence rates ranging from 44% to 55% in earlier research (12-14). The current findings are consistent with this evidence, showing a predominance of moderate to severe cases among affected women (15,16). It was also observed that nearly all participants developed RLS in the third trimester, reinforcing the pattern described in previous studies where symptoms increased progressively across pregnancy and peaked in late gestation (17,18). The present study further confirmed that the mean severity score reached clinically significant levels, which aligns with the literature suggesting that RLS in pregnancy is not merely transient discomfort but a condition capable of significantly disrupting sleep and daily function.

The pathophysiology of RLS in pregnancy remains multifactorial. The study supports the concept that physiological and biochemical changes, such as low iron and ferritin levels, high estrogen concentrations, vitamin D deficiency, altered calcium metabolism, and peripheral venous congestion, play a role in symptom exacerbation during the third trimester (16). The consistent pattern of symptom severity observed in this study strengthens the argument that these biological changes during pregnancy amplify RLS manifestations and contribute to their persistence until delivery, with some cases continuing postpartum (15). Importantly, the current results demonstrated that increasing severity of RLS adversely impacted quality of life. Participants with moderate and severe symptoms reported greater disturbance in physical functioning, sleep quality, and mood compared to those with mild symptoms. This finding aligns with earlier work showing that women with severe RLS had markedly lower physical and emotional health scores compared to those with mild or moderate disease (19,20). The study thus reaffirms that RLS severity is not only a neurological issue but also a determinant of overall maternal well-being.

A strength of this research lies in its focus on quantifying RLS severity in the third trimester using a validated scale, thereby providing clinically relevant data for practitioners, gynecologists, and physical therapists. The use of standardized severity categories facilitated comparability with international data and enhanced the credibility of the findings. However, several limitations must be acknowledged. The study design was cross-sectional, limiting the ability to establish causal relationships or track the natural course of RLS symptoms before and after pregnancy. The use of a non-probability convenient sampling method also restricted the generalizability of the findings to broader populations. Additionally, the absence of biochemical markers, such as serum ferritin, hemoglobin, or vitamin D levels, prevented deeper exploration of the underlying mechanisms contributing to RLS severity. Future studies should consider prospective designs to monitor symptom onset, progression, and resolution across different trimesters and postpartum. Incorporating laboratory investigations would provide a more comprehensive understanding of pathophysiological pathways. Furthermore, interventional research evaluating the effectiveness of iron supplementation, vitamin D therapy, physical therapy, or lifestyle modifications could offer practical strategies for reducing symptom severity and improving maternal outcomes.

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This study confirmed that RLS is highly prevalent and predominantly moderate to severe in women during the third trimester of pregnancy. The severity of symptoms had substantial implications for maternal sleep, mood, and quality of life. While the findings add to existing literature, further research with larger, representative populations and integration of biochemical measures is warranted to strengthen understanding and inform evidence-based management of RLS in pregnancy.

CONCLUSION

The present study concluded that restless legs syndrome is a significant concern among women in the third trimester of pregnancy, with most affected individuals experiencing symptoms of considerable severity. These findings highlight the importance of recognizing and addressing RLS during antenatal care, as its impact extends beyond sleep disturbance to influence overall maternal well-being and quality of life. By emphasizing the burden of this condition, the study contributes valuable evidence that can support healthcare professionals in identifying, monitoring, and managing RLS more effectively in pregnant women, ultimately improving maternal health outcomes.

AUTHOR CONTRIBUTION

Author	Contribution
Hafiza Fatima Javaid	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Samreen Sadiq	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Amna Pervaiz	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Aroosha Ali	Contributed to Data Collection and Analysis
Hafiz Muhammad Asim	Has given Final Approval of the version to be published

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