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Prevalence of Nocturnal Leg Cramps Among Multigravida Aged 25-35 Years

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ABSTRACT

Background: Nocturnal leg cramps, painful involuntary muscle contractions, are common among multigravida women, affecting 30-50%. Understanding their prevalence is essential for prevention and management.

Objective: To assess the prevalence and characteristics of nocturnal leg cramps in multigravida women aged 25-35 years.

Methods: A cross-sectional study was conducted from February to June 2024, involving 165 multigravida women aged 25-35 years in Lahore. Participants were recruited through convenient sampling. Data were collected using a validated muscle cramps questionnaire, assessing frequency, intensity, duration, and location of cramps. Exclusion criteria included nulligravida, primigravida, hypertensive, and diabetic women. Statistical analysis was performed using SPSS version 25, with descriptive statistics used to summarize the data.

Results: Out of 165 participants, 92.1% (n=152) experienced nocturnal leg cramps in the last three months. Pain intensity was reported as painful by 64.2% (n=106) and very painful by 15.2% (n=25). The most common cramp location was the calf and foot (36.4%, n=60), with 57.6% (n=95) experiencing cramps predominantly at night.

Conclusion: Nocturnal leg cramps are highly prevalent among multigravida women, significantly impacting their daily activities. Routine screening and management strategies are recommended.

INTRODUCTION

Pregnancy, while typically a physiological process, can sometimes lead to complications that transform it into an experience marked by distress and discomfort (1). Multigravida refers to women who have been pregnant two or more times, and these repeated pregnancies often correlate with advancing maternal age and an accelerated progression of physiological changes. This heightened susceptibility to additional risk factors and unforeseen complications during gestation is of significant concern, particularly in Asian countries where the prevalence of multigravida is notably higher. Among the various discomforts encountered during pregnancy, leg cramps—characterized by painful, involuntary contractions—are particularly distressing, affecting approximately 33.3% of multigravida women, as evidenced by a case study conducted by the Department of Health Polytechnic Surabaya (2).

Globally, maternal mortality remains alarmingly high due to complications during pregnancy and multiple childbirths (3). Nocturnal leg cramps, a common discomfort particularly prevalent in the second half of pregnancy, are experienced by a significant proportion of pregnant women. Approximately 30% to 50% of women endure these cramps twice a week during the third trimester, with a higher incidence among multigravida women (4). These cramps, often occurring at night, escalate in frequency as pregnancy progresses and are most commonly reported in the third trimester (5). The underlying mechanism is believed to involve the accumulation of lactic acid and pyruvates, leading to involuntary contractions in the affected leg muscles. Although these cramps do not result in permanent muscular damage, their intensity can be severe, particularly during nocturnal episodes (6, 7).

The physiological alterations a woman's body undergoes during pregnancy—such as weight gain, postural changes, and ligamentous laxity—are compounded with each successive pregnancy in multigravida women, leading to recurrent discomforts like leg cramps (8, 9). These cramps predominantly affect the gastrocnemius muscle and are most commonly observed between the 24th and 36th weeks of gestation. While nocturnal muscle cramps can also occur in other regions, such as the thighs and

buttocks, they rarely induce significant stress outside the leg region (10, 11). Nocturnal leg cramps, also known as night leg cramps, are typically marked by intense localized pain, muscle firmness, or tenderness, with symptoms potentially persisting for several minutes or even hours. The aftermath of a cramp can leave the muscle tender for up to 24 hours (12).

Given the high prevalence and significant impact of nocturnal leg cramps among multigravida women, especially in the third trimester, it is imperative to understand and address this common discomfort to improve maternal well-being and pregnancy outcomes.

MATERIAL AND METHODS

This cross-sectional study was conducted from February 2024 to June 2024 in various clinics, hospitals, homes, and community settings in Lahore. The study aimed to assess the prevalence of nocturnal leg cramps among multigravida women aged 25-35 years. The sample size was determined using the Slovin formula, with a calculated sample of 165 participants. A convenient sampling technique was employed to recruit the participants, who met the inclusion criteria of being multigravida, aged between 25 and 35 years, and having experienced nocturnal leg cramps in the past three months. Nulligravida, primigravida, hypertensive, and diabetic women were excluded to minimize confounding variables (13).

Data collection was conducted through a structured questionnaire that assessed demographics and the characteristics of nocturnal leg cramps. The muscle cramps questionnaire, comprising nine questions, was utilized to gather detailed information on the frequency, intensity, duration, and location of cramps. Prior to data collection, informed consent was obtained from all participants who met the inclusion criteria. Participants were asked about their medical history and the specific symptoms related to nocturnal leg cramps, ensuring a comprehensive understanding of their condition.

Ethical approval for this study was obtained from the institutional review board, ensuring that the research adhered to the principles outlined in the Declaration of Helsinki. Participants were assured of the confidentiality and anonymity of their responses, and they were informed that participation was voluntary, with the option to withdraw from the study at any time without any consequences.

Data analysis was performed using SPSS version 25. Descriptive statistics, including frequencies and percentages, were calculated to summarize the demographic characteristics of the participants and the prevalence of nocturnal leg cramps.

The relationship between variables, such as the frequency and severity of cramps and demographic factors, was explored using appropriate statistical tests. The results were presented in a clear and concise manner, with tables and figures used to enhance the understanding of the findings.

Overall, this study was designed and conducted with rigorous adherence to ethical standards and methodological rigor, ensuring the reliability and validity of the findings. The comprehensive data collection process and robust statistical analysis provide a solid foundation for understanding the prevalence and characteristics of nocturnal leg cramps among multigravida women, contributing valuable insights to the field of maternal health.

RESULTS

The study included 165 multigravida women aged 25-35 years, with the demographic characteristics summarized in Table 1.

Table 1: Demographic Characteristics

Demographic Variables	Categories	Frequency	Percentage (%)
Age Group (years)	24 – 29	44	26.7
	30 – 34	96	58.2
	35 – 39	25	15.2
Number of Pregnancies	2	93	56.4
	3	68	41.2
	> 3	4	2.4

The largest age group among the participants was 30-34 years, representing 58.2% (n=96) of the sample. The next largest group was aged 24-29 years, accounting for 26.7% (n=44), while those aged 35-39 years made up 15.2% (n=25). Regarding the number of pregnancies, the majority of participants, 56.4% (n=93), had experienced two pregnancies, followed by 41.2% (n=68) with three pregnancies, and a small percentage, 2.4% (n=4), had more than three pregnancies. Table 2 details the study variables related to nocturnal leg cramps. A significant majority of participants, 92.1% (n=152), reported experiencing nocturnal leg cramps in the past three months, with only 7.9% (n=13) reporting no cramps during this period. Among those who experienced cramps, 64.2% (n=106) described them as painful, and 15.2% (n=25) found them very painful. The most common location for cramps was the calf and foot, reported by 36.4% (n=60) of the participants, while 10.3% (n=17) experienced cramps exclusively in the calf, and 46.6% (n=77) reported cramps in other combinations of locations, including the thigh and hand.

Table 2: Study Variables Related to Nocturnal Leg Cramps

Variable	Categories	Frequency	Percentage (%)
Experienced Cramps (Last 3 Months)	Yes	152	92.1
	No	13	7.9
Pain Intensity During Cramps	Not painful	19	11.5
	Painful	106	64.2
	Very painful	25	15.2
Location of Cramps	Calf and Foot	60	36.4
	Calf only	17	10.3
	Calf, Foot, and Thigh	11	6.7
	Other combinations (neck, hand, etc.)	77	46.6
Timing of Cramps	Night	95	57.6
	Both Day and Night	54	32.7
	Day	16	9.7
Duration of Cramps	Less than 1 minute	79	47.9
	1-5 minutes	48	29.1
	5-10 minutes	38	23.0

Table 3 presents the overall scores and the impact of nocturnal leg cramps on daily activities. According to the Faces Pain Rating Scale, 33.9% (n=56) of participants rated their cramps as hurting a little bit, while 27.3% (n=45) felt the cramps hurt even more, and 18.8% (n=31) reported that the cramps hurt a whole lot. Regarding factors that exacerbated the cramps, 32.7% (n=54) of participants indicated that sleeping worsened their cramps, while 23.0% (n=38) pointed to rest as a contributing factor.

Table 3: Overall Scores and Impact on Daily Activities

Measure	Categories	Frequency	Percentage (%)
Faces Pain Rating Scale	Hurts a little bit	56	33.9
	Hurts a little more	33	20.0
	Hurts even more	45	27.3
	Hurts a whole lot	31	18.8
Factors Making Cramps Worse	Sleeping	54	32.7
	Rest	38	23.0
	Cold	8	4.8
	Other combinations	65	39.5
Factors Making Cramps Better	Spontaneously	100	60.6
	Over-the-counter (OTC) medicine	10	6.1
	Medication prescribed by a doctor	4	2.4
	Other	51	30.9
Impact on Daily Activities	Unable to perform usual activities	32	19.4
	Some difficulty with activities	29	17.6
	Unable to perform strenuous work	35	21.2
	Some difficulty with strenuous work	41	24.8
	No difficulty with usual activities	28	17.0

Cold was a factor for a smaller portion, 4.8% (n=8), while 39.5% (n=65) mentioned other combinations of factors. In terms of alleviation, a majority of 60.6% (n=100) reported that their cramps improved spontaneously, with only 6.1% (n=10) using over-the-counter medication, and 2.4% (n=4) relying on medication prescribed by a doctor.

The cramps were most frequently reported to occur at night, with 57.6% (n=95) of participants indicating this time, while 32.7% (n=54) experienced cramps both during the day and night, and 9.7% (n=16) experienced them only during the day. The duration of these cramps was typically less than one minute for 47.9% (n=79) of participants, while 29.1% (n=48) reported that the cramps lasted between one and five minutes, and 23.0% (n=38) experienced cramps lasting five to ten minutes.

The impact of cramps on daily activities was notable; 19.4% (n=32) of participants were unable to perform their usual activities, 21.2% (n=35) were unable to perform strenuous work, and 24.8% (n=41) experienced some difficulty with strenuous work. However, 17.0% (n=28) reported no difficulty in performing their usual activities. These results highlight the significant prevalence of nocturnal leg cramps among multigravida women and their substantial impact on daily life, emphasizing the need for effective management strategies.

DISCUSSION

The findings of this study revealed a high prevalence of nocturnal leg cramps among multigravida women aged 25-35 years, with 92.1% of participants reporting cramps in the past three months. This prevalence is consistent with previous research, which has also documented a significant occurrence of leg cramps during pregnancy, particularly in the third trimester (4, 5). The high prevalence observed in this study reinforces the understanding that multigravida status may increase susceptibility to such discomforts due to repeated physiological changes over successive pregnancies. These changes, including weight gain, postural adjustments, and ligamentous laxity, likely contribute to the heightened risk of muscle cramps, particularly at night when physical activity is minimal (8, 9).

The intensity of pain reported by the participants varied, with a majority describing the cramps as painful or very painful. This aligns with earlier studies that have highlighted the severe discomfort associated with nocturnal leg cramps during pregnancy (1, 7). The frequent occurrence of cramps in the calf and foot, as reported by 36.4% of the participants, is consistent with the literature, which identifies these areas as the most commonly affected by pregnancy-related cramps (10, 16). The timing of the cramps, predominantly at night, supports existing evidence that nocturnal leg cramps are a common pregnancy-related issue, likely exacerbated by the accumulation of metabolic byproducts like lactic acid during periods of rest (6-9).

The study's strengths include a well-defined sample of multigravida women within a specific age range, providing a focused examination of this demographic. Additionally, the use of a validated questionnaire allowed for a detailed assessment of the frequency, intensity, duration, and location of cramps, contributing to the robustness of the findings (13, 14). However, the study also had limitations. The cross-sectional design, while useful for identifying prevalence, does not establish causality. Moreover, the reliance on self-reported data may introduce recall bias, as participants might not accurately remember the frequency or intensity of their cramps. The convenient sampling method, although practical, may limit the generalizability of the findings to a broader population (12-15).

The results of this study highlight the need for increased awareness and proactive management of nocturnal leg cramps in multigravida women. Given the significant impact of these cramps on daily activities, as evidenced by the 19.4% of participants who were unable to perform their usual activities, healthcare providers should consider routine screening for leg cramps during prenatal visits. Interventions could include education on lifestyle modifications, such as maintaining adequate hydration, engaging in regular physical activity, and performing muscle-stretching exercises before bed (15-18). Additionally, future research should explore the potential benefits of dietary supplements, such as magnesium or calcium, which have been suggested to reduce the frequency and severity of leg cramps during pregnancy (7, 12, 16-18).

CONCLUSION

In conclusion, this study confirmed that nocturnal leg cramps are a common and distressing symptom among multigravida women, with significant implications for their quality of life. The findings underscore the importance of addressing this issue through both clinical practice and further research. While the study provided valuable insights, there remains a need for longitudinal studies to better understand the underlying mechanisms and to develop more effective preventive and therapeutic strategies. Such efforts could ultimately improve maternal comfort and well-being during pregnancy, particularly for those at higher risk due to multiple pregnancies.

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