Patient-Reported Prevalence, Characteristics, and Impact of Leg Cramps in an Urban Primary Care Clinic

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ABSTRACT

This study addresses the prevalence and characteristics of leg cramps in 294 primary care patients (mean age = 46.5 years), with 51.7% reporting leg cramps. Patients who experience resting or exercise-induced leg cramps were more likely to be older and female. Cramp severity averaged 5.6 on a scale of 1-10 and disturbed sleep "sometimes" or "often" in 55% of patients. Most patients did not discuss cramps with their clinician. Our study reveals a possible shift in patients who experience leg cramps to younger age and chronicity. Resting leg cramps should be reviewed by clinicians as a symptom of declining health and advancing aging.

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INTRODUCTION

Leg cramps are common in primary care patients[1-3] and are a source of significant distress to those who experience them. These abrupt, painful muscle contractions occur typically in the calf or foot with pain lasting for minutes to hours.[4] Leg cramps often result in disruption of sleep, substantially reduced quality of life,[5] or depressive symptoms.[6] In addition, research suggests that leg cramps are under reported by patients to their health care clinicians.[2]

There is a profound gap in the current knowledge about leg cramps, their prevalence, and their impact in a United States primary care patient population. The majority of existing studies were conducted decades ago or in countries outside of the United States.[1,2,5,7] The most recent study conducted on leg cramps in US primary care patients was from an outpatient Veterans Affairs (VA) clinic in 1991.[1]

This study provides updated information regarding the prevalence, characteristics, and impact of leg cramps in an adult primary care midwestern US patient population that includes women and adults of all age groups.

METHODS

This cross-sectional survey was administered in June and July 2021 to primary care patients from a midwestern urban ambulatory family medicine clinic. Patients aged <19 years or those who could not read English were excluded.

In this survey, leg cramps were defined as "spasmodic, painful, involuntary muscle contractions when resting, lasting from a few seconds to minutes, usually affecting the calf and foot, ie, 'Charley horse.'"[7,8] Because approximately 20% of cases sometimes experience leg cramps during daytime hours, the study authors did not restrict the definition to nighttime leg cramps.

There is no validated survey for leg cramps, hence the survey was developed by the researchers based on a literature review and similar questionnaires used in previous research.[1,3,7,9] It included demographic questions as well as those addressing overall health, physical activity, and sedentarism, as well as questions on the frequency, rest- or exercise-induced, duration, and site of leg cramps and their impact on the patient (**Supplemental Appendix**). Descriptive summary statistics were obtained. Because pregnancy is a risk factor for leg cramps, findings are stratified by gender and pregnancy status.

RESULTS

The final sample included 294 respondents, 51.7% (n = 152) of whom reported getting leg cramps. Table 1 provides a demographic breakdown of respondents. Those who

get leg cramps are significantly older (mean age = 49.1 years, SD = 15.9) than those who do not (mean age = 43.7 years, SD = 17.5; $P = 0.006$). Cramp severity averaged 5.6 on a scale of 1-10 and disturbed sleep "sometimes" or "often" in 55% of patients. While 69% of the total sample were women, 72.7% of those who get leg cramps were women, suggesting that women are slightly more prone than men to get them. The characteristics reported by those who experienced leg cramps can be found in Table 2.

DISCUSSION

Our study provides a 21st century update on prevalence, characteristics, and impact of leg cramps in midwestern US primary care patients. Most of our sample were women (72.7%), whereas the 1991 VA study was 95% men.[1] Additionally, although our data represent a much younger population (mean age = 46.5 years) than that of the VA study (mean age = 60.4 years), the prevalence of leg cramps in our population (51.7%) was similar to that found in the 1991 study (56%) and was higher than that found in other studies.[3] Results from our study replicate previous studies which found a strong relationship between leg cramps and increased age.[1-4] The higher prevalence of leg cramps in our younger patient population, combined with the revelation that most of those who do suffer have been experiencing them for 4 years or longer, indicates that this condition is appearing at a younger age and is increasing in chronicity.

Our results suggest that women are more prone to experience leg cramps than men, findings similar to those found in a study of the general US population,[4] but in contrast to other studies.[2,3] Our findings also indicate that leg cramps disturb sleep at least "sometimes" in 55% of respondents as well as impact their mental health, physical health, and daytime function. These findings concur with other reports of the disruptive impact of leg cramps on patients' health and quality of life.[1-5,9]

One disconcerting finding from our study, reported earlier by others, is that very few subjects discussed their leg cramps with their physicians.[1,2] Although there is limited definitive research investigating effective ways to mitigate leg cramps,[10,11] this lack of reporting suggests that clinicians may miss an opportunity to discuss the benefits and harms of potential treatment options with their patients. Additionally, it is important for clinicians to be aware of the high prevalence of leg cramps, to increase awareness and drive further research.

Table 1. Description of Sample

	Do You Have Leg Cramps?		
	No (n = 142) Mean (SD)	Yes (n = 152) Mean (SD)	Total (N = 294) Mean (SD)
Age, y, No. (%)	43.7 (17.5)	49.1 (15.9)	46.5 (16.9)
BMI, No. (%)	29.9 (7.8)	33.0 (7.7)	31.5 (7.9)
Gender, No. (%)			
Male	47 (35.1)	41 (27.3)	88 (31.0)
Non-pregnant female	85 (63.4)	102 (68.0)	187 (65.8)
Pregnant female	2 (1.5)	7 (4.7)	9 (3.2)
Hispanic/Latino, No. (%)			
No	124 (89.9)	140 (4.6)	264 (92.3)
Yes	14 (10.1)	8 (5.4)	22 (7.7)
Race, No. (%)			
White	108 (78.3)	96 (64.0)	204 (70.8)
Black	15 (10.9)	41 (27.3)	56 (19.4)
Asian	4 (2.9)	5 (3.3)	9 (3.1)
Native American	1 (0.7)	0 (0)	1 (0.3)
Other	4 (2.9)	1 (0.7)	5 (1.7)
More than 1 race selected	6 (4.3)	7 (4.7)	13 (4.5)
How would you rate your overall health? No. (%)			
Excellent	12 (8.5)	3 (2.1)	15 (5.2)
Very good	38 (26.8)	22 (15.1)	60 (20.8)
Good	66 (46.5)	62 (42.5)	128 (44.4)
Fair	22 (15.5)	47 (32.2)	69 (24.0)
Poor	4 (2.8)	12 (8.2)	16 (5.6)

BMI = body mass index.

Table 2. Characteristics of Leg Cramps

	Male No. (%)	Non-Pregnant Female No. (%)	Pregnant Female No. (%)	Total[a] No. (%)
How often do you get leg cramps? No. times/mo (%)				
1-4	21 (53.8)	55 (59.1)	3 (50.0)	79 (57.2)
5-10	11 (28.	16 (17.2)	1 (16.7)	28 (20.3)
10-30	4 (10.3)	15 (16.1)	1 (16.7)	20 (14.5)
Every day	2 (5.1)	4 (4.3)	1 (16.7)	7 (5.1)
>Once a day	1 (2.6)	3 (3.2)	0 (0)	4 (2.9)
How long have you been having leg cramps? No. times/mo (%)				
0-6	7 (18.9)	7 (7.6)	4 (57.1)	18 (13.2)
7-12	3 (8.1)	4 (4.3)	0 (0)	7 (5.1)
How long have you been having leg cramps? No. times/y (%)				
1-3	7 (18.9)	21 (22.8)	1 (14.3)	29 (21.3)
4-5	5 (13.5)	19 (20.7)	0 (0)	24 (17.6)
5	15 (40.5)	41 (44.6)	2 (28.6)	58 (42.6)

continues

[a] Totals may not sum to 152 due to missing data.
[b] Participants may have selected more than 1 season.
[c] Measured on a scale of 1-10, where 1 = least severe and 10 = most severe.
[d] Measured on a scale of 1-5, where 1 = no impact and 5 = very high impact.

Our study is limited by the nature of self-reported data, including the possibility of social desirability bias in responding, along with the self-selected nature of the sample. Although we included a definition of leg cramps in our survey, patients may not have had a clear understanding of what would be characterized as a leg cramp. Our study is also limited by the racial and ethnic homogeneity typical of a Midwestern US population. Only 7.7% of our sample identified as Hispanic or Latino and 70.8% identified as White. Non-English–speaking participants were excluded. Future research should strive to investigate leg cramps in underrepresented groups. Additionally, future studies should give respondents the opportunity to provide open-ended comments regarding their experiences with leg cramps.

We provide new information about this neglected, yet prominent source of patient distress for a population of US primary care patients and reveal a possible shift to younger age and longer chronicity than seen in older studies from 30 years ago. There is emerging evidence that leg cramps are a symptom of declining health, diminishing fitness, and/or advancing aging, and should be reviewed with renewed interest by primary care clinicians as a symptom of impaired quality of life. Active management by clinicians will be required to optimize healthy aging of the population.

Table 2. Characteristics of Leg Cramps *(continued)*

	Male No. (%)	Non-Pregnant Female No. (%)	Pregnant Female No. (%)	Total[a] No. (%)
Do your leg cramps occur with exercise? No. (%)				
No	23 (62.2)	60 (65.2)	5 (71.4)	88 (64.7)
Yes	14 (37.8)	32 (34.8)	2 (28.6)	48 (35.3)
Do your leg cramps occur when resting? No. (%)				
No	5 (13.5)	1 (1.1)	0 (0)	6 (4.4)
Yes	32 (86.5)	92 (98.9)	7 (100.0)	131 (95.6)
Are the leg cramps typically on one or both sides of your body? No. (%)				
One side	15 (38.5)	48 (50.0)	2 (28.6)	65 (45.8)
Both sides	24 (61.5)	48 (50.0)	5 (71.4)	77 (54.2)
Location - calves, No. (%)	24 (72.7)	80 (87.0)	5 (100.0)	109 (83.8)
Location - feet, No. (%)	11 (33.3)	57 (62.0)	2 (40.0)	70 (53.8)
Location - thighs, No. (%)	14 (42.4)	20 (21.7)	2 (40.0)	36 (27.7)
Do your cramps get worse during certain seasons of the year? No. (%)				
No	23 (69.7)	70 (77.8)	4 (80.0)	97 (75.8)
Yes	10 (30.3)	20 (22.2)	1 (20.0)	31 (24.2)
Summer[b]	7 (21.2)	8 (9.0)	0 (0)	15 (11.8)
Fall[b]	0 (0)	2 (2.2)	0 (0)	2 (1.6)
Winter[b]	3 (9.1)	12 (13.5)	1 (20.0)	16 (12.6)
Spring[b]	1 (3.0)	1 (1.1)	0 (0)	2 (1.6)
Frequency of sleep disturbance, No. (%)				
Never	6 (17.6)	10 (10.9)	1 (20.0)	17 (13.0)
Seldom	10 (29.4)	30 (32.6)	2 (40.0)	42 (32.1)
Sometimes	15 (44.1)	33 (35.9)	1 (20.0)	49 (37.4)
Often	3 (8.8)	19 (20.7)	1 (20.0)	23 (17.6)
Have you ever fallen because of leg cramps? No. (%)				
No	31 (91.2)	79 (85.9)	5 (100.0)	115 (87.8)
Yes	3 (8.8)	13 (14.1)	0 (0)	16 (12.2)
Have you ever discussed your leg cramps with your health care clinician? No. (%)				
No	26 (76.5)	63 (68.5)	5 (100.0)	94 (71.8)
Yes	8 (23.5)	29 (31.5)	0 (0)	37 (28.2)
	Mean (SD)	**Mean (SD)**	**Mean (SD)**	**Mean (SD)**
Severity of leg cramps, mean (SD)[c]	5.2 (2.6)	5.8 (2.3)	5.6 (2.0)	5.6 (2.4)
Impact on, mean (SD)[d]				
Sleep	2.3 (1.4)	2.9 (1.3)	2.8 (1.8)	2.7 (1.4)
Mental health	1.6 (1.2)	1.6 (1.1)	1.6 (0.9)	1.6 (1.1)
Physical health	1.8 (1.3)	1.9 (1.3)	2.0 (1.4)	1.9 (1.3)
Daytime functioning	1.9 (1.5)	2.0 (1.4)	2.6 (1.8)	2.0 (1.4)

[a] Totals may not sum to 152 due to missing data.
[b] Participants may have selected more than 1 season.
[c] Measured on a scale of 1-10, where 1 = least severe and 10 = most severe.
[d] Measured on a scale of 1-5, where 1 = no impact and 5 = very high impact.

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Supplemental materials

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