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Characteristics of knee pain among older adults users of primary health care, according to sociodemographic aspects

Jean Barbosa Luciano[1] Mariana Thays Carvalho Moreira[1] Daiane Aparecida Damasceno[1]
Gabriel Ferreira Aleixo[1] Lara Andrade Souza[1] Adriana Cristina de Araújo Figueiredo[1] Juliana Martins Pinto[1]

[1] Universidade Federal do Triângulo Mineiro – UFTM. Uberaba/MG, Brasil.
E-mail: jeanbluciano@hotmail.com

Abstract

Knee pain is a condition recognized for its high functional impact in the older population. Knowledge about the characteristics of these demands in Primary Health Care (PHC) is scarce, which makes it difficult to plan lines of care aimed at pain management in this population. The objective of this study was to investigate characteristics of knee pain among older adults users of primary health care, according to sociodemographic aspects. A cross-sectional study was carried out with 201 older adults in three randomly selected health units. Knee pain was classified as chronic (>3 months) and acute (<3 months). The Analog Pain Scale was applied to assess the intensity, scored from 0 to 10, and questions about the impact of pain on daily life and demand for health services. Gender, age, presence of a partner, and education were recorded. Chronic knee pain was reported by 39.8% of participants; 24.9% reported functional impact and 23.9% sought a health service. Presence of pain (p=0.021) and functional impact (p=0.016) were more frequent among those who did not have a partner and the search for health services was more frequent among those with higher education. Acute knee pain was reported by 37.8% of participants, mean pain intensity was 2.4 (SD:3.6), and was associated with higher education and not having a partner. The demand for care for older adults with knee pain in PHC is high and is characterized as being functionally impactful and stimulating the demand for health services, in addition to being unequal in terms of education and the presence of a partner.

Keywords: Pain management. Access to health information. Aging. Quality of life.

INTRODUCTION

Population aging accentuates and modifies the demands for health care, which must be attentive to the maintenance of functionality and quality of life[1,2]. During the aging process, several normative and functional changes occur in the body systems, which are added to possible pathological conditions, whose dysfunctions impact the neuromuscular and musculoskeletal systems, reducing muscle strength and physical conditioning. As a consequence, there is a reduction in the performance of activities, social participation and quality of life[3,4,5,6].

Knee pain is among the main complaints related to the musculoskeletal system reported by older adults in health services[7,8,9]. The condition is characterized by a sudden and intense onset, starting from 55 years of age. The main associated factors are weakness of the knee extensor muscles, reduced mobility, depression, obesity, reduced level of physical

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activity, and joint deformity[10,11]. Such factors may contribute to increased pain, stiffness, and joint dysfunction, leading to limitation of activities of daily living, restriction of social participation and decreased quality of life in this population[12,13].

According to the Brazilian Society for the Study of PAIN (BSSP), joint pain is among the most frequent types of pain in the population[14]. Pain can last up to three months, considered acute, or for longer than three months, when considered chronic. The main cause of joint pain is trauma or inflammation, triggered by diseases such as osteoarthritis, rheumatoid arthritis and bursitis, which contribute to increasing the intensity of pain and, consequently, its impact on mobility[7,14]. Limited joint mobility is common in chronic complications that frequently occur in older adults[15] and, thus, impact the functionality of this population[10,14].

The Brazilian Unified Health System (SUS - Sistema Único de Saúde) is a public and universal system that guarantees the right and access to health for all Brazilians, through the Health Care Network (HCN) which has Primary Health Care (PHC) as its reference point regarding the resolution and comprehensiveness of care[16]. The characteristics of the UHS organization directed to the needs of the population living in unfavorable living conditions, lead the older population to make significant use of public health services[17,18,19]. It is estimated that about 70% of the Brazilian older population are dependent of the public health system[20]. This means that the demands and challenges of population aging tend to overload the system, especially PHC, which works with the family and community, and is closer to the problems and needs of the population. For this reason, PHC has greater potential to assess, monitor, and offer comprehensive care to users, so that they remain active and healthy, reducing the demands for rehabilitation.

In this sense, the planning of lines of care for the management of pain in older adults is essential to ensure the resolution and comprehensiveness of care; however, professionals and managers face challenges such as the low availability of evidence and knowledge about the characteristics of these demands. The present study aimed to investigate characteristics of knee pain among older adults users of primary health care, according to sociodemographic aspects. This knowledge will contribute to the construction of knowledge in the area, in order to stimulate the development of healthcare lines for older population.

METHODS

Study design and sample

This is a cross-sectional study with data from the baseline of a longitudinal study designed to investigate determinants of functionality among older adults users of primary health care in a city in southeastern Brazil. The study was authorized by the Municipal Health Department of Minas Gerais, and the project was approved by the Research Ethics Committee, under number 2.557.676, CAAE: 81115717.5.0000.51542.0.

Three Health Matrix Units (HMU) were randomly selected, one in each healthcare district, where data collection took place. The sample size for each district was estimated at 62 participants, considering the prevalence of 20% of gait slowness assessed by the Time Up and Go test (>12.47 seconds)[21] evidenced in a pilot study with a margin of error of 10% and a 95% confidence interval. Participants aged 60 years or older, permanent residents in the geographical area registered at the HMU, and who consented to participate in the study were included. Hospitalized, institutionalized, bedridden people with severe functional dependence, advanced dementia, and terminal illnesses were not included.

A total of 201 older people who were waiting for consultations and care from the unit's team were interviewed. They received information about the research objectives, benefits and procedures and signed an informed consent form. Furthermore, participants were informed about the risks related to their participation in the study, such as failures in data protection, emotional discomfort, and fatigue. Then, they responded to the research protocol composed of sociodemographic aspects, physical and mental health status, quality of life, environmental aspects, use of and access to health services, social support, and subjective well-being. The total interview time was approximately 60 minutes.

Variables and measurements

Musculoskeletal knee pain was assessed using the adapted version of the Nordic Musculoskeletal Symptom Questionnaire (NSQM)[22]. The instrument originally designed to assess musculoskeletal symptoms in the last 12 months and in the last 7 days was adapted to assess pain in the last 3 months (chronic) and in the last 7 days (acute). Participants answered if they had pain in the last three months in their knees (yes/no). Subsequently, they answered whether they were prevented from performing activities due to pain (yes/no), and whether they sought a health service due to pain (yes/no). This assessment corresponded to the assessment of chronic pain. Acute pain was identified by asking the participant if they have had knee pain in the last 7 days (yes/no). If yes, the Visual Analog Scale of pain was used to assess the intensity. The participant visualized a straight line measuring 10 cm, with the value 0 (no pain) at one end and the value 10 (severe pain) at the other end. The researcher asked them to mark a point on the line at the location that best indicated their sensation of pain. Subsequently, the researcher positioned a ruler and recorded the corresponding value, starting from 0.

Sociodemographic variables included gender (male/female), age group (60-74/75+), education (<4 years/5 years or more), family income (<1MW/ 1 to 3MW/ 4+MW), currently employed (yes/no), housing arrangement – indicated by the number of people living in the same household (alone/two people/three or more people), presence of a partner or stable union (yes/no), and skin color (white /not white).

Statistical analysis

Frequencies and percentages were calculated for all variables. Comparisons of proportions between variables were performed using Pearson's Chi-Square test and comparisons of means (pain intensity) were performed using Student's t test, due to the normal distribution of data after verification by the Kolmogorov-Smirnov test (p>0.05). The analyses were performed using the IBM SPSS program, version 22 for Windows, with a significance level of 5%.

RESULTS

The sample was characterized by a mean age of 68.13 (SD: 66.8) years, ranging from 60 to 89 years. The sample was predominantly female (77.1%), aged between 60 and 74 years old (79.1%), with up to 4 years of education (54.7%), a family income of 1 to 3 minimum wages (81.6%), who did not currently work (78.6%), were retired (78.1%), living with two people (42.8%), without a partner (51.2%), and a greater predominance of participants reported having white skin (58.2%). More than a third of the sample reported knee pain in the last 3 months (39.8%), 24.9% reported having been prevented from performing activities, and 23.9% sought a health service due to pain (Table 1).

Table 2 shows the relationships between knee pain characteristics and sociodemographic variables. A higher proportion of older people without pain was observed among those who reported the presence of a partner (p = 0.021). Likewise, those who had a partner were more frequent among those who did not report any limitations to perform activities (p=0.016). Participants who sought health services due to pain were more frequent among those with a higher education (p=0.016) (Table 2).

Regarding the presence of acute pain (last 7 days), 37.8% of the participants reported a mean pain intensity of 2.4 (SD: 3.6). Greater pain intensity was observed among those with higher education and among older adults who had a partner (Table 3).

Table 1 – Sample characteristics. N=201. Older adults, Uberaba-MG, 2019.

	F	%
Sex		
Male	46	22.9
Female	155	77.1
Age Group		
60-74	159	79.1
75+	42	20.9
Education		
<4 years	110	54.7
5 or more	91	45.3
Family Income		
<1 MW	10	5
1 to 3 MW	164	81.6
4+ MW	27	13.4
Currently employed		
Yes	43	21.4
No	158	78.6
Retired		
Yes	157	78.1
No	44	21.9
Housing arrangement		
Alone	43	21.4
Two people	86	42.8
Three or more	72	35.8
Partner		
Yes	98	48.8
No	103	51.2
Skin color		
White	117	58.2
Not White	84	41.8
In the last 3 months have you had knee pain?		
Yes	80	39.8
No	121	60.2
In the last 3 months, have you been prevented from carrying out your activities due to this pain?		
Yes	50	24.9
No	151	75.1
In the last 3 months, did you seek a health service because of this pain?		
Yes	48	23.9
No	153	76.1

F: Frequency.

Table 2 – Relationships between sociodemographic variables and knee pain characteristics in the last 3 months (chronic pain). N=201. Older adults, Uberaba-MG, 2019.

	In the last 3 months have you had knee pain?		P value	In the last 3 months, have you been prevented from performing your activities due to this pain?		P value	In the last 3 months, have you consulted a health service because of this pain?		P value
	No (n=121)	Yes (n=80)		No (n=151)	Yes (n=50)		No (n=153)	Yes (n=48)	
Sex									
Male	31 (67.4)	15 (32.6)	0.256	38 (82.6)	8 (17.4)	0.181	37 (80.4)	9 (19.6)	0.434
Female	90 (58.1)	65 (41.9)		113 (72.9)	42 (27.1)		116 (74.8)	39 (25.2)	
Age Group									
60-74	94 (59.1)	65 (40.9)	0.543	116 (73)	43 (27)	0.166	117 (73.6)	42 (26.4)	0.101
75+	27 (64.3)	15 (35.7)		35 (83.3)	7 (16.7)		36 (85.7)	6 (14.3)	
Education									
<4 years	72 (65.5)	38 (34.5)	0.094	88 (80)	22 (20)	0.079	91 (82.7)	19 (17.3)	*0.016*
5 or more	49 (53.8)	42 (46.2)		63 (69.2)	28 (30.8)		62 (68.1)	29 (31.9)	
Family Income									
<1 MW	5 (50)	5 (50.0)	0.632	6 (60)	4 (40)	0.405	8 (80)	2 (20)	0.930
1 to 3 MW	98 (59.8)	66 (40.2)		123 (75)	41 (25)		125 (76.2)	39 (23.8)	
4+ MW	18 (66.7)	9 (33.3)		22 (81.5)	5 (18.5)		20 (74.1)	7 (25.9)	
Currently employed									
Yes	28 (65.1)	15 (34.9)	0.457	35 (81.4)	8 (18.6)	0.283	34 (79.1)	9 (20.9)	0.609
No	93 (58.9)	65 (41.1)		116 (73.4)	42 (26.6)		119 (75.3)	39 (24.7)	
Retired									
Yes	95 (60.5)	62 (39.5)	0.865	118 (75.2)	39 (24.8)	0.983	120 (76.4)	37 (23.6)	0.844
No	26 (59.1)	18 (40.9)		33 (75)	11 (25)		33 (75)	11 (25)	
Housing arrangement									
Alone	25 (58.1)	18 (41.9)	0.949	31 (72.1)	12 (27.9)	0.245	32 (74.4)	11 (25.6)	0.539
Two people	52 (60.5)	34 (39.5)		61 (70.9)	25 (29.1)		63 (73.3)	23 (26.7)	
Three or more	44 (61.1)	28 (38.9)		59 (81.9)	13 (18.1)		58 (80.6)	14 (19.4)	
Partner									
Yes	67 (68.4)	31 (31.6)	0.021	81 (82.7)	17 (17.3)	0.016	80 (81.6)	18 (18.4)	0.074
No	54 (52.4)	49 (47.6)		70 (68)	33 (32)		73 (70.9)	30 (29.1)	
Skin color									
White	68 (58.1)	49 (41.9)	0.477	86 (73.5)	31 (26.5)	0.531	84 (71.8)	33 (28.2)	0.090
Not White	53 (63.1)	31 (36.9)		65 (77.4)	19 (22.6)		69 (82.1)	15 (17.9)	

Table 3 – Distribution of knee pain frequencies in the last 7 days (acute pain) and average pain intensity, according to sociodemographic variables. N=201. Older adults, Uberaba-MG, 2019.

	In the last 7 days, have you had knee pain? F (%)		Pain intensity m (SD)
	No (n=125)	Yes (n=76)	
Sex			
Male	31 (67.4%)	15 (32.6%)	1.87 (3.35)
Female	94 (60.6%)	61 (31.4%)	2.56 (3.73)
Age Group			
60-74	99 (62.3%)	60 (37.7)	2.45 (3.75)
75+	26 (61.9)	16 (38.1)	2.21 (3.29)
Education			
<4 years	75 (68.2%)	35 (31.8%)	1.79 (3.09)*
5 or more	50 (54.9%)	41 (45.1%)	3.13 (4.13)
Family Income			
<1 MW	7 (70.0%)	3 (30.0%)	2.40 (4.19)
1 to 3 MW	100 (61.0%)	64 (39.0%)	2.46 (3.67)
4+ MW	18 (66.7%)	9 (33.3%)	2.04 (3.47)
Currently employed			
Yes	29 (67.4%)	14 (32.6%)	1.73 (3.09)
No	96 (60.8%)	62 (39.2)	2.58 (3.78)
Retired			
Yes	101 (64.3%)	56 (35.7%)	2.30 (3.61)
No	24 (54.5%)	20 (45.5%)	2.77 (3.82)
Housing arrangement			
Alone	27 (62.8%)	16 (37.2%)	2.39 (3.59)
Two people	53 (61.6%)	33 (38.4%)	2.37 (3.68)
Three or more	45 (62.5%)	27 (37.5%)	2.44 (3.71)
Partner			
Yes	64 (65.3%)	34 (34.7%)	1.82 (3.14)*
No	61 (59.2%)	42 (40.8%)	2.95 (4.02)
Skin color			
White	72 (61.5%)	45 (38.5%)	2.65 (3.88)
Not White	53 (63.1%)	31 (36.9%)	2.05 (3.30)

*p<0.05; F: frequency; M: mean; SD: standard deviation.

DISCUSSION

The present study presents the characteristics related to the report of knee pain among older adults users of primary health care, addressing the functional impact, the demand for health services and the intensity of pain, according to sociodemographic aspects. This knowledge is configured as an auxiliary element for the development of healthcare lines for the older population, especially those aimed at pain management. The methodological strategies adopted make the partial representation of the older population

using PHC in the studied municipality possible, which does not necessarily represent the reality of the Brazilian older population, nor of the population that uses the the public health system in the country. Therefore, the results presented should guide future studies of greater territorial scope and with different methodological designs, in order to deepen and answer other pertinent questions about the phenomenon of pain in the Brazilian older population.

More than a third of older adults PHC users reported knee pain and of these, approximately 25% reported functional impact and/or demand for health services due to pain, which indicates the severity of the reported problem. This finding reveals the magnitude of the demands for PHC and the potential economic and social impact on the health system in the absence of lines of care for the management and care of these users. In a demographic scenario characterized by population aging, this data represents a warning as to the trend of this demand to increase in the coming years and the urgency to invest in the planning of integrated care for the older people in PHC[2,23].

The presence of pain, the functional impact and the search for health services showed unequal distributions regarding education and the presence of a partner. Both sociodemographic aspects are considered protective factors against health problems and mortality in the general population. Higher education in the older population protects against cognitive decline and dementia, and is associated with greater access to health information, resources, and services[24].

Additionally, the presence of a partner who constitutes a stable union represents the existence of a social support network on which the person can count and trust in case of need. This social network has been associated with better health outcomes, especially when the quality of affective relationships is positive. In addition, the support offered by this network favors the psychosocial adjustments necessary to deal with pain and functional limitations. Thus, its impact on daily life can be reduced, enabling a better quality of life and well-being[6,19].

The literature points out that the prevalence of knee pain in older adults can vary from 25 to 50%, depending on the evaluation criteria and the characteristics of the evaluated population[25,26,27], which, according to the authors, configures this condition as a public health problem, since the impacts on functionality, use of health services, and quality of life are significant. A study carried out in the city of Salvador, Bahia state evaluated the quality of life in people with knee osteoarthritis, whose prevalence was 54.8% in individuals who lived without a partner (single, widowed, and divorced)[27]. Rodrigues, Duarte, and Feitosa (2019)[28] observed the impact of knee osteoarthritis on the functional capacity and quality of life of patients, verifying among the participants who declared the absence of partners (single, widowed, and divorced), and 56% of these individuals reported pain. The data reinforce the protective role of the social support network against impairments in functionality and quality of life that can be caused by the presence of pain.

At least two explanations are plausible and complementary. On the one hand, the network that offers support can encourage healthier habits, provide health assistance, offer company for activities in the community, and for appointments and healthcare, contributing to the improvement of the global health status[29]. In addition, material and instrumental support can be offered in carrying out heavier household activities, enabling the performance of light activities that guarantee a good perception of health, reducing the impact of pain on functional independence. On the other hand, the absence of a support network, which can manifest itself more intensely, such as loneliness and social isolation, can have negative effects on

the perception of the impact of pain on daily life. This is because these people are unable to share daily tasks and overload themselves when performing them, worsening the intensity of pain and, consequently, its functional impact. Additionally, the lack of motivation and company for social activities contribute to the abandonment of medical treatments, participation in social groups and increase sedentary lifestyle, worsening the adaptive process related to pain. The literature that addresses the importance of social support for positive health outcomes is well established, so that such evidence can apply to chronic and acute knee pain in older adults[3,50,30].

A relationship was observed between schooling and the demand for health services when feeling knee pain in the last 3 months. Those with a higher education tended to seek the healthcare services more often than those with less education (<4 years). In the study by Levorato[17], carried out with 320 individuals, it was found that the highest level of education represents 56.9% of the demand for the healthcare service. Possibly, people who have a higher level of education tend to have more access and understanding of health-related information and, thus, develop self-care more effectively when compared to those with less education. Several studies point to socioeconomic inequalities in accessing healthcare services by the older population, and education is the main limiting and excluding factor[18,31]. These findings suggest that health education can have positive effects on pain management, optimizing access to and use of healthcare services. Furthermore, this is a warning to healthcare teams that must provide adequate support and information to the population with low education who may live with health problems, but do not adequate access to services.

Education can also contribute to better body perception and recognition, in a way that people with higher education had a greater intensity of knee pain. Similar relationships were found in previous studies[32,33]. It is possible that individuals with higher education have a greater understanding of their health and quality of life, causing them to recognize the changes and limitations imposed by health problems more clearly, which applies to the intensity of symptomatically painful conditions.

In the present study, the intensity of knee pain was greater among those who did not have a partner, which corroborates the study by Gomes[30], in which 75% of the elderly who lived unaccompanied/alone reported pain with maximum intensity. The explanation is based on the argument already exposed above. It is possible that the lack of help in daily activities overloads the individual, physically and emotionally, triggering a worsening in the intensity of pain, when compared to those who have a partner and, probably, have a greater division of tasks. Certainly, the social determinants of pain, as well as the impact of pain on social relationships, are topics that need further research and exploration.

The results of this study require careful interpretation, considering the particularities of the investigation setting (primary health care), the characteristics of the population and the limitations of the instruments used for pain assessment. Despite these items, the information collected here can be useful to health professionals who work in primary healthcare, especially in collective actions of prevention and health promotion in the community, where these demands are prevalent but often neglected and underreported. Several points discussed can contribute to the design of future studies that investigate the effects of community and educational interventions, considering the influence of sociodemographic and economic aspects.

CONCLUSION

The demand for care for older adults with knee pain in PHC is high and is characterized by high functional impact and demand for healthcare services. Moreover, there are social inequalities associated with education and the presence of a partner, which characterizes a greater vulnerability of this group. The development of lines of care aimed at managing knee pain in older adults in primary healthcare is essential to face the challenges of population aging, as well as its impacts on the health system and on the quality of life of the aging population.

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