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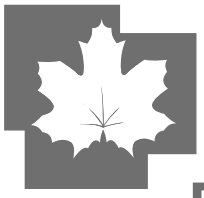

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REVIEW ARTICLES

Aging and inequalities: social protection policies for older adults resulting from the Covid-19 pandemic in Brazil

The Covid-19 pandemic represents a challenge for the entire world, particularly low and middle income countries, given the fragility of their public policies. An Imperial College, London study[1] highlighted the global nature of the crisis. Firm and coordinated action by governments, centered on social isolation for the entire population, could save millions of lives worldwide. While not disregarding the socioeconomic impact, emergency decisions must primarily consider the lives of **everyone**, despite the immediate economic interests.

In Brazil, more than 80% of older adults depend exclusively on the National Health Service (or SUS) for their healthcare. This percentage is even higher among Afro-Brazilians[2] and the poor. The SUS has suffered severe budget cuts for years, and even before the pandemic, much of its equipment was already on the verge of collapse due to excess demand. The inequality is striking - as journalist Flavia de Oliveira has said, "The Covid-19 crisis did not create the country's ills. It exposed them"[3].

There is an urgent need to reverse policies that have led to the dismantling of the SUS, especially in Primary Care. The predictable increase in mortality from other causes due to overcrowding and the need to prioritize hospital services for patients with Covid-19 is also a worry; as is the lack of testing, resulting in an underestimating of the problem; and the shortage of respirators and personal protective equipments (PPE's), putting the infrastructure and workforce at risk in order to support the growing need for services.

The profile of the Covid 19 pandemic in Brazil differs from that of other countries:

- it is younger, as long before the age of 60, adults suffer comorbidities that place them in the high-risk group;
- it is much "darker", as among the poorest of the poor are Afro-Brazilians. Questions of race and ethnicity are imperative – including indigenous populations, immigrants and nomadic peoples. Without this information, hitherto absent from epidemiological bulletins, strategies to tackle the crisis cannot be properly targeted;
- it affects women more, through the greater risks faced by the most exposed health professionals, the prevalence of informal work amongst women, their role as providers of food and care for their families, and increased domestic violence;
- it is even more age based, as economic choices determine the exclusion of older people from health services;

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- it is elitist, as the poorest Brazilians are deprived of access to diagnosis and treatment, wherever they live;
- it brings more suffering, given the complete lack of palliative care in the public network.

People grow old badly and early in Brazil. Thus, deaths by Covid-19 do not only reflect the age composition of the country, but above all the fact that there have never been policies for active and healthy aging, centered on the promotion of health, lifelong learning, citizen participation and the protection of the most vulnerable[4].

Therefore, the current crisis demands intergenerational and interdisciplinary solidarity from everyone. Like other countries, Brazil's response to the pandemic was "too little, too late"[5]. Millions of Brazilians have failed to follow the preventive guidelines, not because they do not want to, but because they cannot: social exclusion and structural discrimination deny them full access to their rights. Constitutional Amendment 95 further reduced resources, from health promotion to prevention, from primary care to hospital services; from sanitation conditions to care for the most dependent – all of which have been affected by severe cuts to the social policies budget.

What responses are being offered to protect older adults living in long-term care facilities for the elderly (LTCFs)? How are the professionals working in these facilities being cared for and protected? How can organizational flows to referral services be guaranteed? What urgent measures can be adopted to prevent the foreseeable deaths in these institutions?

It is vital that we recognize the existence of these problems, and understand that deficiencies in gerontological knowledge make them worse[6]. Policies to combat the pandemic must consider the evidence accumulated by those who study aging in order to develop guidelines aimed at the needs of institutionalized older adults and the most vulnerable, considering the limitations of the formal services infrastructure and the absence of integrated care.

That is why the ABRASCO (or Brazilian Association of Collective Health) Thematic Group (TG) on Aging and Public Health[5] has been working on reflections and proposals that can broaden our response to the serious health and political crisis that Brazil is facing. The absolute priority is the protection of the population as a whole, and in particular older adults, through social isolation aimed at flattening the epidemic curve and thus preventing the collapse of public and private health systems.

We call for the urgent strengthening of primary health care policies, the creation of remote monitoring strategies, the guarantee of survival and protective equipment, the offering of concrete guidance and support for LTCFs, care for homeless older adults, support for older adults who care for other older people or who still depend on casual labor for their livelihood, as well as the assurance of a humanitarian approach and palliative care, when necessary.

Public policies need to be created with people, not for people. Our older adults' rights councils have been severely weakened over the past year, in particular the National Council, which has little dialogue with civil society[7].

Once again, this TG warns: failure to consider the scientific evidence and WHO recommendations for the adoption of horizontal isolation will lead to an abject, inhuman, indefensible gerontocide.

As part of the understanding that public policies are created with people and not for people, the *Revista Brasileira de Geriatria e Gerontologia* (the *Brazilian Journal of Geriatrics and Gerontology*), in its thematic issue on public policies constructed with older adults, invites submissions of scientific articles focusing on the public protection of the lives of older people.

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Participation in community intervention programmes and quality of life: findings from a multicenter study in Portugal

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Abstract

Objective: The present study aimed to analyze quality of life (QoL) in participants of community intervention programs (CIP) focused on healthy aging. *Method: A* multicenter cross-sectional study was carried out with 304 community-dwelling participants, aged 55 years old or more and living in three locations in Portugal. Half of these individuals (n=152) were involved in a CIP (intervention group). The intervention group was paired according to sex and age group with an equivalent number of participants (n=152) that did not take part in a CIP (comparison group). Activities implemented in the CIP were grouped according to their nature: socio-recreational, educational/lifelong learning and physical activity. Data collection involved a Social Participation Questionnaire, the WHOQOL-Bref and the Satisfaction With Life Scale. *Results:* The CIP participants (n=152) had a mean age of 71.4 years (±5.4), were predominantly women (75.0%), married (65.4%), with fewer than five years of education (71.7%) and a monthly family income of up to 750 euros (47.4%). The intervention group had a significantly higher QoL in the physical domain than the comparison group (p<0.03). Physical activity was the most frequently attended session in the CIP (n=119, 78.3%), in comparison with educational/lifelong learning (n=46, 30.3%) and socio-recreational (n=25, 16.4%) activities. People

Keywords: Healthy Aging. Social Participation. Quality of Life. Health of the Elderly. Program Evaluation.

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practicing physical activity in the CIP had a significantly higher QoL in the psychological, social relationships and environment domains (p<0.05). *Conclusion:* Participation in the CIP was associated with QoL. Therefore, in line with the active aging framework, CIPs must be a part of public policy measures aimed at the QoL of the population.

INTRODUCTION

Due to their greater health vulnerability, creating opportunities for an active and healthy life is important for older people[1]. In line with previous studies[2], aging is a dynamic process that occurs throughout life through a personal-context interrelationship. Several theoretical models have emphasized the importance of social participation and involvement in a healthy or successful aging (SA) process. For Rowe and Kahn[3-5] active involvement with life is one of the three components of a SA, which also includes cultivating close interpersonal relationships and engaging in meaningful and purposeful activities. More recently, these authors[5] advocated for enhancing the skills and productive potential of older people, as well as creating opportunities for them to assume new social roles and responsibilities.

The Selective Optimization With Compensation model[6,7], meanwhile, perceives the individual as possessing self-regulatory mechanisms. Considering intraindividual plasticity and interpersonal variability in aging, Baltes and Baltes[6] recommend strengthening reserve capacities through education, motivation, health promotion and social support. Better reserves (physical, mental and/or social) increase the likelihood of aging well.

In turn, the Preventive and Corrective Proactivity (PCP)[8-10] model associates aging with increased stress, recognizing an individual's ability to actively and effectively deal with age-related challenges. In line with Baltes[6], this model emphasizes the importance of proactive self-regulation mechanisms, presenting the concepts of proactive preventive and corrective adaptations, including social behaviors (eg, helping others, mobilizing support, replacing roles). In keeping with Rowe and Kahn[3], the PCP model highlights the maintenance of valued activities and relationships. In fact, the older adults themselves consider proactive involvement and interpersonal relationships as important factors in enjoying a SA[11].

The importance of being socially involved also appears in the profile of active aging (AA)[12,13], with participation one of its four pillars. The ability to participate depends on health status and at the same time is central to health promotion, purpose in life and positive social relationships. Thus, it is recognized that being socially involved influences quality of life (QoL). As such, policy measures need to be devised to provide opportunities for such involvement.

Despite the number of theories built around social participation, the concept is diffuse and lacks consensus, hindering communication between researchers, the creation of standardized measuring instruments and the comparability of research results[14,15]. For Scharlach and Lehning[16], and in line with SA models, social involvement includes two subcomponents: social contact (personal relationships, social support) and social participation (meaningful social activities). Despite the aforementioned conceptual vagueness, there is a tendency to analyze the relationship between social participation and QoL as an indicator of successful aging. QoL is defined as individuals' subjective perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns[17]. There is evidence that participating in different social activities favors health-related QoL in the general population[18] and specifically in the older population[19].

Studies show that older adults who participate in social groups have significantly higher QoL than non-participants, namely in the *physical, environmental* and *social relations* domains of the WHOQoL-Bref and in the *past/present/future activities, intimacy* and *social participation* facets of the WHOQoL-OLD[20,21]. Longitudinal studies show that participating in social activities leads to better QoL[22,23], life satisfaction and self-esteem[24] and reduces depressive symptoms[23,24] in older adults. Moreover, this relationship seems

to intensify with advancing age[22,25] and is stronger in older than younger people[18]. In a systematic review, Adams et al.[26] found that several types of activity generate benefits in aging, highlighting social activities that can reduce the risk of social isolation, favor social and emotional support and social roles, among others. In turn, physical activity is associated with better QoL[27-29], and its benefits go beyond the exercise itself, encompassing the social dimension, strengthening ties and occupying a relevant role in community life[28,30].

In summary, while theory, research and policy indicate the relevance of social participation in the QoL and well-being of the older population, most relevant studies lack a comparison group. Based on the assumption that being socially involved brings gains in QoL and well-being, the present study aimed to compare the QoL of individuals participating in successful and healthy aging public community intervention programs (CIPs) with individuals who did not participate in such programs.

METHOD

The present study is part of a multi-center and multi-method research project (Aging, social participation and the early detection of dependence: skills for the Fourth Age (AgeNORTC)) carried out in three territories of Northern and Central Portugal (Viana do Castelo, Bragança and Coimbra/Condeixa), involving Higher Education Institutions which provide education and training in Gerontology and Municipal Councils.

A comparative quantitative cross-sectional study that aimed to establish the baseline for analyzing changes in the aging process was performed. In this study of local public policy, social participation is understood to be systematic involvement in community initiatives – herein known as Community Intervention Programs (CIPs) – aimed at promoting active and successful aging. CIPs guide the operationalization of the AgeNORTC project, constituting the raw material for assessing the social participation/involvement of older people and its relationship with quality of life.

The present study included 152 participants involved in CIPs (50 per site) aged 55 to 84 years and living in the community, who formed the intervention group (IG) – the group under investigation. As this was a community-based study and randomly selecting participants on the basis of CIP registrants was impossible, the sample was selected via key partners (eg parish councils and associations) and direct contact with older people taking part in the CIP. For its part, the comparison group (CG; n=50 by location), paired with the previous group in terms of gender and age group, was selected through the family and neighborhood networks of participants, as well as key partners (eg municipal and parish councils, associations). Individuals who, although participating in CIPs, lived in care facilities for older adults were excluded. As an exploratory study it was thought important to detect an average difference in quality of life between pairs of 5% (range 0-100%), although there was no indication of variability. Assuming a standard deviation of between 15% and 20%, a sample of 50 pairs per site can detect this difference with a power greater than 85%.

For data collection, a multidimensional gerontological evaluation protocol was used. The authors prepared a Sociodemographic and Social Participation Questionnaire with two sections: (1) sociodemographic aspects - 21 closed-ended questions and (2) aspects of participation in Community intervention Programs - six closed-ended questions.

Quality of life was assessed using the Portuguese version of the World Health Organization Quality of Life-Bref (WHOQoL-Bref)[31]. This instrument consists of 26 items, with five-point Likert-type response scales. The first two items assess overall quality of life (overall QoL) while the remainder are organized into four domains (Physical, Psychological, Social Relations and Environment). There is no overall instrument score. As recommended, the raw scores were converted to a 0-100 scale, with higher values indicating a better perception of quality of life. The Portuguese version of the WHOQoL-Bref[31] has high reliability values (α=0.92), with domains or facets ranging from a minimum of 0.64 (social relations domain) to 0.87 (physical domain).

Regarding validity, the authors of the Portuguese version consider that it effectively discriminates people from the normal population from those with associated medical pathologies, both at the domain and general QoL level. These values are in line with those of the original version[17].

Well-being was also assessed using the Portuguese version of the Satisfaction With Life Scale (SWLS)[32]. This scale provides access to participants' overall appreciation of their life, focusing on the judgement of the individual rather than *a priori* criteria. It consists of five items, with a seven point Likert type response scale. The higher the final score (0-35), the greater the degree of satisfaction with life. The Portuguese version has good internal consistency (α=0.78) and good validity indicators, namely significant correlations with self-efficacy, self-concept, psychological maturity and social anxiety. These values are in line with the original version.

Information about the CIPs (Table 1) was collected through document analysis of reports and other written sources produced by local authorities.

Data collection was carried out by researchers and research fellows (n=9) with the collaboration of undergraduate and masters students in Social Gerontology (n=9) from the three Higher Education Institutions involved in the project. The entire team underwent previous training. The data collection protocol was administered at previously agreed sites (higher education institutions and community membership structures) between March and April 2018.

In terms of analysis strategies, a descriptive analysis of the data was carried out in relation to the sociodemographic characteristics of the participants and the variables under study. Through an initial descriptive analysis of the activities carried out in the CIP, three types were identified: (1) socio-recreational activities (dances, cinema, workshops and theater); (2) educational /lifelong learning activities (LLL) (aromatic and medicinal plant garden, literacy and computer science); and (3) physical activities (localized fitness and water aerobics). The relationships between the sociodemographic characteristics and involvement in different types of activity were explored using Chi-square tests. In order to test the effects of CIP participation on quality of life, comparative analyzes were performed with the Student's t-test for paired samples. In order to verify if there were statistically significant differences in the quality of life and well-being of the participants in the CIPs, based on the practice of different types of activities, Student's t-tests for independent samples were performed, comparing the practice vs. does not practice a certain type of activity groups.

In relation to ethical aspects, the present study was analyzed by the Ethics Committee of the School of Education in the Instituto Politécnico de Viana do Castelo (Polytechnic Institute of Viana do Castelo), which issued a favorable opinion. All participants were informed about the objectives and conditions of participation in the study, having signed the respective Informed Consent Form.

RESULTS

A total of 304 participants attending a CIP formed part of this study, of which 104 lived in Viana do Castelo, 100 in Bragança and 100 in Coimbra/Condeixa, Portugal. These subsamples were divided into two groups: the intervention group (IG) and the comparison group (CG).

As shown in Table 1, the participants were mostly female (75.0%) and aged 65-74 years (63.2%). However, individuals in the IG were aged between 60 and 84 years old [average=71.4 ($\pm$5.4)], while in the CG they were aged between 55 and 84 years old [average=71.6 ($\pm$6.1)].

In both groups, the participants were predominantly married (IG=64.5%; CG=69.7%); with an education of between the 1st and 4th years of school (IG=70.4%; CG=67.1%); were retired (IG=92.5%; CG=86.4%); had children (IG=92.6%; CG=93.4%) and lived with their spouse (IG=61.8%; CG=68.5%).

Chart 1. Description of community intervention programs. Viana do Castelo, Bragança and Coimbra/Condeixa, Portugal, 2018.

	Program	Target population	Description and Overall Goal	Operation
Viana do Castelo	Quality Aging (2005)	County population aged 60+ and/or retired and pensioners (500 registered)	Recreational, cultural and leisure activities that facilitate older adults' access to participation in community life in order to promote active aging, quality of life and well-being.	Activities once a week, based on an annual plan that includes dances, cinema, theater, workshops, medicinal and aromatic plant gardens, lectures, among others.
	Beat Aging through Health (2007)	County population aged 60+ and/or retired and pensioners (621 registered)	Recreational activities dedicated to leisure and access to regular exercise. The goals are to improve health rates, promote well-being and broaden social interaction.	Activities twice a week (45min); an indoor gym session and a water aerobics session. November to June.
Bragança	Sport for Rural Seniors (2010)	Rural population of county aged 60+ and/or retired and pensioners (200 registered)	Recreational, cultural and leisure activities that facilitate older adults' access to participation in community life in order to promote active aging, quality of life and well-being.	Gymnastic activities in the gym once a week in adherent villages and water aerobics once a month in the municipal swimming pool. September to May.
	Active Bragança (2018)	County population aged 60+ years old and/or retired and pensioners (120 registered)	Recreational, cultural and leisure activities that facilitate older adults' access to participation in community life in order to promote active aging, quality of life and well-being.	Fitness activities twice a week in the municipal pavilion and water aerobics once a week in the municipal pool. September to May.
Coimbra/Condeixa	Reading, Words and Company (2014)	Adult and senior population of county (20 registered)	Social and recreational activities (living through reading, dissemination of knowledge, appreciation of heritage), aimed at promoting social interaction in the community.	Biweekly activities (2h30m). January to December (except August).
	Senior IT (2013)	County population aged 65+ (10 registered)	Activities to promote autonomy in the use of computers, facilitating social contacts (including via distance) and more enjoyable and sociable leisure time.	Activities twice a week (2h). Courses from two to three months. September to December and January to March.
	Senior Mobility (2007)	County population aged 65+ and retired/pensioners (276 registered)	Play-sport activities aimed at promoting well-being and health. Includes sports fitness, therapeutic fitness and water aerobics.	Fitness once a week; water aerobics twice a week (1h each). All year except August.
	Intergenerational Workshops (2016)	Entire population of county (85 registered)	Recreational and social activities (eg restoration, painting, sewing). Aims to promote socializing and intergenerationality and reduce social isolation.	Activities once a week (3h), from January to December with break in mid-July and August.
	Words For Life (2015)	County, adult and senior population (55 registered)	Project that promotes literacy through literacy workshops. In 2017, inspired the *Computers for Life* program (digital literacy). They aim to promote skills, social inclusion and self-esteem.	*Computers For Life* once a week (2h) *Words for Life* once a week, from October to December and from March to June.

Table 1. Sociodemographic characterization of participants. Viana do Castelo, Bragança and Coimbra/Condeixa, Portugal, 2018.

Sociodemographic characteristics	IG (n=152) n (%)	CG (n=152) n (%)	*p*
Age - mean (standard-deviation)	71.4 (±5.4)	71.6 (±6.1)	0.624
55-64	12 (7.9)	12 (7.9)	
65-74	96 (63.2)	96 (63.2)	
75-84	44 (28.9)	44 (28.9)	
Sex			1
Female	114 (75.0)	114 (75.0)	
Male	38 (25.0)	38 (25.0)	
Marital Status			0.566
Single	7 (4.6)	5 (3.3)	
Married/Civil Partnership	98 (64.5)	106 (69.7)	
Separated/Divorced	8 (5.3)	4 (2.6)	
Widowed	39 (25.7)	37 (24.3)	
Schooling (years)			0.197
No schooling	2 (1.3)	5 (3.3)	
1st-4th	107 (70.4)	102 (67.1)	
5th-6th	16 (10.5)	7 (4.6)	
7th-9th	7 (4.6)	13 (8.6)	
10th-12th	13 (8.6)	17 (11.2)	
Higher education	7 (4.6)	8 (5.3)	
Professional status			0.002
Employed	4 (2.7)	18 (12.2)	
Unemployed	7 (4.8)	2 (1.4)	
Retired	136 (92.5)	127 (86.4)	
Professional sector			0.649
Primary	25 (16.4)	23 (15.1)	
Secondary	35 (23.0)	33 (21.7)	
Tertiary	73 (48.0)	69 (45.4)	
Domestic	19 (12.5)	27 (17.8)	
Monthly Income			0.056
Below €250	7 (4.6)	3 (2.0)	
From €250 to €420	25 (16.6)	23 (15.4)	
From €421 to €750	40 (26.5)	44 (29.5)	
From €751 to €1000	37 (24.5)	25 (16.8)	
From €1001 to €2000	32 (21.2)	29 (19.5)	
Over €2000	10 (6.6)	25 (16.8)	
Lives with			
Spouse	94 (61.8)	104 (68.5)	0.208
Alone	42 (27.6)	29 (19.1)	
Others	16 (10.5)	19 (12.5)	
Sons/Daughters	138 (92.6)	142 (93.4)	0.784

IG: intervention group; CG: comparison group.

In terms of life-long professional activity, using the classification of economic activities, there is a high frequency of tertiary workers, that is, those who worked in the services (IG=48.0%; CG=45.4%). From an economic point of view, and considering that about two thirds of participants were living with others, household income was low, as about half of both groups earned up to €750 per month (IG=47.7% CG=46.9%).

Regarding quality of life and participation in the CIP, programs in three locations were analyzed: Viana do Castelo, Bragança and Coimbra/Condeixa. The municipal actions to promote the quality of life of the population assumes a different configuration according to location, in terms of intervention and functioning. For example, in the municipality of Bragança, the main focus of municipal policy measures is physical activities, while in Coimbra/Condeixa and Viana do Castelo the municipal intervention is more heterogeneous, and also involves activities of a socio-recreational and educational/LLL nature.

A comparative analysis of quality of life as a result of intervention group vs. comparison group (Table 2) shows that the participants in the CIP (IG) had a better quality of life in the *physical* domain ($p<0.03$) than the non-participants (CG).

In the remaining quality of life domains, there was also a trend towards higher average values in the intervention group.

With regard to aspects of social participation in the intervention group, as shown in Table 3, localized fitness (67.1%) and water aerobics (53.3%) were the activities most carried out by the participants within the scope of the CIPs in the three territories under investigation. On average, each individual performed 1.9 (±1) activities, with 63.8% performing more than one. Regarding reasons for participating, maintaining health was most cited by respondents (66.4%), followed by occupy time (44.7%) and the opportunity to meet new people (36.2%).

In terms of presence in the activities, almost all participants (96.7%) considered themselves assiduous attendees. Average attendance at the CIPs was 51.6 months (approximately four years), although there was a wide dispersion of results at this level (± 45.3 months). Most of the participants had been attending these programs for a period of more than one year and less than five years (50.7%).

Given the nature of the activities within the scope of the CIP, a greater number of people practiced physical activities than socio-recreational and educational/LLL activities. Although under different names, physical activity appeared in the programs of the three locations under investigation. It should also be noted that, in socio-recreational activities, there is a significantly higher percentage of women ($p<0.05$) (Table 4).

Regarding quality of life, considering practitioners and non-practitioners of each type of activity, physical activity is the greatest differentiating factor (Table 5).

Table 2. Comparison of quality of life between the group participating in community intervention programs (IG) vs. comparison group (CG). Viana do Castelo, Bragança and Coimbra/Condeixa, Portugal, 2018.

WHOQoL-Bref	IG Mean (±sd)	CG Mean (±sd)	Dif. Mean (±sd)	*t*	*p*
Overall QoL	63.8 (±15.8)	62.7 (±19.3)	1.2 (±25.9)	0.549	0.584
Physical Domain	67.5 (±15.4)	63.5 (±16.6)	4.1 (±22.0)	2.278	0.024
Psychological Domain	71.0 (±15.2)	70.3 (±13.6)	0.4 (±20.3)	0.417	0.677
Social Relations Domain	67.5 (±16.6)	69.5 (±15.4)	-2.0 (±22.9)	-1.091	0.277
Environment Domain	68.8 (±14.2)	67.4 (±14.8)	1.4 (±17.4)	1.007	0.315

Student's t-test for paired samples; sd: standard-deviation; QoL: quality of life; Mean Dif.: Difference of means.

Table 3. Description of activities, reasons and attendance in community intervention programs (n=152). Viana do Castelo, Bragança and Coimbra/Condeixa, Portugal, 2018.

Aspects of participation in CIP	Participants n (%)
Activities performed	
Socio-recreational	
Dances	23 (15.1)
Cinema	4 (2.6)
Workshops	19 (12.5)
Theater	8 (5.3)
Education/LLL	
Aromatic and Medicinal Plant Gardening	14 (9.2)
Literacy	1 (0.7)
Computing	18 (11.8)
Physical activity	
Fitness	102 (67.1)
Water aerobics	81 (53.3)
Reason for participating	
Occupy time	68 (44.7)
Meet new people	55 (36.2)
Maintain health	101 (66.4)
Practice physical activities	47 (30.9)
Participate in activities they enjoy	46 (30.3)
Attendance	147 (96.7)
Time spent in CIP (years)	
Up to 1	35 (23.0)
More than 1 to 5	77 (50.7)
More than 5 to 10	32 (21.1)
More than 10	8 (5.3)

LLL: Lifelong learning.

Table 4. Participation in activities of community intervention programs according to sociodemographic characteristics. Viana do Castelo, Bragança and Coimbra/Condeixa, Portugal, 2018.

Sociodemographic characteristics	Socio-recreative activities (n=25; 16.4%)	Educational/LLL activities (n=46; 30.3%)	Physical Activity (n=119; 78.3%)
Sex			
Female	92.0%	80.4%	75.6%
Male	8.0%	19.6%	24.4%
P	<0.05	0.415	0.821
Age Group (years)			
55-64	0.0%	6.5%	8.4%
65-74	56.0%	63.0%	63.0%
75-84	44.0%	30.5%	28.6%
P	0.084	0.901	0.901

to be continued

Continuation of Table 1

Sociodemographic characteristics	Socio-recreative activities (n=25; 16.4%)	Educational/LLL activities (n=46; 30.3%)	Physical Activity (n=119; 78.3%)
Marital Status			
Married/Civil union	48.0%	58.7%	65.5%
Unmarried	52.0%	41.3%	34.5%
P	0.070	0.359	0.682
Years of Schooling			
Up to 4 years	80.0%	78.3%	68.1%
5 or more years	20.0%	21.7%	31.9%
P	0.340	0.178	0.521
Professional Status			
Retired	4.0%	4.5%	8.7%
Non-retired	96.0%	95.5%	91.3%
P	0.691	0.506	0.457
Has Children			
Yes	95.5%	95.3%	92.4%
P	1.000	0.512	1.000
Lives With Others			
Yes	64.0%	69.6%	74.6%
P	0.332	0.694	0.271
Monthly Income			
Up to €750	40.0%	52.2%	46.2%
More than €750	60.0%	47.8%	53.8%
P	0.513	0.482	0.694
Religion (considers oneself religious)			
Yes	100.0%	100.0%	95.5%
P	0.600	0.102	1.000

Chi-squared test.

Table 5. Quality of life and well-being according to the practice of different types of activities in community intervention programs. Viana do Castelo, Bragança and Coimbra/Condeixa, Portugal, 2018.

	Socio-recreative activities			Educational/LLL Activities			Physical Activity		
	Practices	Does not Practice		Practices	Does not Practice		Practices	Does not Practice	
	n=25 M (±sd)	n=127 M (±sd)	*p*	n=46 M (±sd)	n=106 M (±sd)	*p*	n=119 M (±sd)	n=33 M (±sd)	*p*
WHOQoL-Bref									
Overall QoL	64.3 (±13.9)	60.0 (±16.2)	0.094	62.8 (±13.6)	64.0 (±16.9)	0.655	63.2 (±16.2)	65.2 (±14.9)	0.542
Physical Domain	66.3 (±15.3)	67.7 (±15.4)	0.660	68.1 (±12.9)	67.3 (±16.3)	0.768	67.8 (±15.8)	66.6 (±14.0)	0.683
Psychological Domain	72.3 (±8.4)	70.8 (±16.2)	0.482	67.7 (±15.2)	72.5 (±15.1)	0.075	72.3 (±14.4)	66.4 (±17.2)	<0.05
Social Relations Domain	68.3 (±13.2)	67.3 (±17.2)	0.781	64.1 (±14.5)	68.9 (±17.2)	0.099	69.3 (±16.4)	61.1 (±15.5)	<0.05
Environment Domain	68.5 (±11.2)	68.8 (±14.7)	0.911	65.8 (±12.8)	70.1 (±14.6)	0.082	70.3 (±14.2)	63.5 (±12.9)	<0.05
Satisfaction With Life	26.9 (±5.2)	25.6 (±6.4)	0.352	24.8 (±6.4)	26.3 (±6.2)	0.179	26.7 (±5.8)	22.7 (±6.9)	<0.05

Students T-test for independent variables; M: mean; sd: standard-deviation; QoL: quality of life.

The analysis allows the statistically significant differences resulting from the practice of physical activity by the participants of the CIP to be identified, with practitioners of this type of activity having a better quality of life in the psychological, social relations and environment ($p<0.05$) domains, as well better satisfaction with life ($p<0.05$) than non-practitioners.

DISCUSSION

The CIP participants had significantly higher quality of life values in the physical domain than non-participants. Furthermore, there was a tendency towards higher average values in the other quality of life domains (general, psychological, environment) in the CIP participant groups than in the groups that did not participate.

These results are in line with the study by Costa et al.[28] in which older adults attending public physical exercise programs had a better quality of life than those who did not attend such programs in all domains of the WHOQoL-Bref and WHOQOL-Old. Ferreti et al.[27] also drew similar conclusions. Ribeiro et al.[33], meanwhile, found that, in an urban context, physically active older adults had a better quality of life than those who were insufficiently active/sedentary. This difference was not found in the rural context, but a predominance of active people and higher levels of quality of life were found than in the urban environment, stressing that in rural areas older people benefit from the continuity of tasks related to agriculture and more opportunities for socialising.

Therefore, physical activity should be seen in a broad sense, because in addition to physical exercise, it involves the structuring of a routine and is practiced through social interaction, becoming a socializing activity. Costa et al.[28] underline that participation in group activities, even when aimed at physical activity, can favor social relationships, new emotional ties and feelings of significant inclusion in community life. The results also refer to the PCP model in which health promotion (eg, physical activity) and available social support appear as aspects that favor quality of life[8-10].

Regarding the CIPs, there was diversity in the initiatives made available to the population by the municipalities, namely: recreational/cultural activities, recreational-sports activities, computer workshops and literacy workshops, among others. They also varied in terms of frequency, intensity, distribution across the territory and functioning. In terms of objectives, there seems to be uniformity, notably: (1) the promotion of AA, health, quality of life and well-being; and (2) contribute to participation in community life and social inclusion. In line with the study by Bárrios and Fernandes[1], only one of the nine CIPs under analysis targets the entire population of the municipality, with the rest subjected to criteria such as age and/or the status of retired person/pensioner. These results are in keeping with systematic reviews of the topic, in which it was observed that interventions centered on AA are diverse and effective in promoting quality of life[34].

As for the profile of the participants in the CIP, there was a predominance of women and of the age group of 65-74 years, which is in line with Neri and Vieira[35], who found that being female and aged between 65 and 69 years old is associated with greater social involvement. It should be noted that some of the participants were involved in these actions for a long time, almost all consider themselves assiduous attendees and most practice more than one activity. Thus, for some, CIPs involve real commitment and involvement, constituting an important aspect of their daily lives. Continued adherence to interventions is considered an important factor for the effectiveness of programs[34].

Among the activities performed in the CIPs, localized fitness (eg, muscle strength work, balance) and water aerobics are the most frequently available, which reflects the predominance and scope of interventions aimed at physical activity in the territories under investigation. It should be noted that maintaining health was the most commonly stated reason for participating in the CIPs, followed by occupying time and establishing new social ties. Thus, in line with the literature and the objectives established in the CIP, the participants seem to conceive the involvement in these activities as generating benefits in quality of life. In a critical review, Adams et al.[26] observed that

social participation influences well-being, and can do so in several ways. In participants of the CIP, a specific analysis of the type of activities performed shows significant differences between practitioners and non-practitioners of physical activity, with practitioners presenting significantly higher values of satisfaction with life and quality of life (psychological, social relations and environment domains). This means that practitioners of physical activity have a better quality of life than practitioners of other types of activities. If the Rowe and Kahn[3] model is taken as a reference, effective successful aging, by being multifaceted, can be achieved through different components. The results of the present study point to the relevance of the biophysical system, but it is important to bear in mind that the body is not disconnected from psychosocial aspects, as previously mentioned.

Despite these findings, the present study has some limitations. Contrary to the initial plans, updated lists of CIP participants could not be accessed. On the other hand, although only age group and gender were used as criteria for pairing the sample, it was found that sociodemographic characteristics were very similar in both the intervention and the comparison group, such as, for example, the predominance of a low level of education and low monthly income.

It is recommended, therefore, that future studies on this theme include new sample groups with more differentiated attributes of sex, socioeconomic status and social involvement (eg, university educated older adults). As Adams et al.[26] point out, a better understanding of the effects of social participation on well-being requires considering dimensions such as the meaning, context and requirement of activities. These aspects were addressed in the present study, namely in identifying the motivations and duration of involvement in the programs, but it is necessary to go further. In addition, it is important to carry out a thorough analysis of the subjective experience of the aging process, using qualitative methods (provided for in this study), as well as an evolutionary analysis of the impact of social participation on the process of aging with quality, through longitudinal studies.

CONCLUSION

Participation in public community intervention programs favors quality of life, as participants had a better quality of life in the physical domain than non-participants. Participants who practiced physical activity also exhibited superior results in the *physical, psychological, social relations* and *environment* domains. Thus, to promote the quality of life of the population, the implementation of community intervention programs is recommended, in particular involving physical activities. The results also reveal the reduced participation of men, older seniors and groups with a higher socioeconomic status in these programs, aspects that researchers and policy makers must consider, especially as the impact of social participation on quality of life tends to intensify with age[22,25]. A vision of aging as an ongoing process in life, with gains and losses, implies thinking about longevity through group actions, that is, through the collective life.

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Difficulties of access to health services among non-institutionalized older adults: prevalence and associated factors

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Abstract

Objective: To estimate the prevalence and factors associated with the difficulties of access to health services among non-institutionalized older adults in the town of Montes Claros, Minas Gerais, Brazil. *Method:* A cross-sectional study nested in a population-based cohort of community-dwelling older adults was carried out in Montes Claros, Minas Gerais, Brazil. Data collection was performed in the homes of the older adults between November 2016 and February 2017. Demographic, socioeconomic, and health-related variables and access to and use of health services were evaluated. Bivariate analyzes (Pearson's chi-squared test) were conducted, adopting a level of significance lower than 0.20 for inclusion of the independent variables in the multiple model. The final model was generated by Poisson regression analysis, with robust variance, and the variables maintained were associated with difficulty in using the health services up to a level of significance of 0.05 ($p<0.05$). *Results:* 394 older adults participated in this study, 33% of whom reported difficulties with access. In multiple analysis, greater difficulty of access was registered among older adults without a partner; who could not read; were frail and had a negative self-perception of health. Older adults face greater difficulties with access when seeking public services. *Conclusion:* A high perception of difficulty with access was identified, determined by social and physical aspects inherent to aging, and which may be worsened by the characteristics of public services. There is a need for investments in the health care of older adults, in order to guarantee care that promotes healthy aging.

Keywords: Health Services. Old Age Assistance. Health Services Accessibility. Prevalence. Community Health Nursing.

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INTRODUCTION

Changes in demographic patterns and increased longevity are trends that have redesigned the age structure of the population, both in Brazil and on a global scale[1,2]. This scenario requires changes in the structure and provision of fundamental health services, establishing standards of quality and ensuring that allow older adults are allowed to live not only longer, but actively and healthily[2,3].

Based on this paradigm of healthy aging emerges the need for adaptations to the health system to ensure quality of access and use of health services. These adjustments suggest the reformulation of health policies to include new forms of care, based on improvements in quality of life, the maintaining of functional ability and the prevention of chronic health conditions[2]. In other words, models of care that respect the characteristics of older adults and envisage integrated care throughout the care pathway[4].

Access to health services is an important factor that underlies the quality and effective performance of such services[5]. Access is a set of dimensions that determine the relationship between the demand for and entry into the service[6]. The use of health services comprises all direct contact with points of care and is evidence that access has been achieved[6].

The relationship of aging and access can be considered a worrying situation. Characteristics inherent to aging present, as a consequence, less physical willingness on the part of older adults to seek health services and to move between different levels of care[7]. Other factors associated with the morbidity profile, such as geographical and socioeconomic variations; individual needs; quality of life; and level of health knowledge are determinant in the use of health services and how often they are used and, therefore, may determine difficulties in access to health services for the older adult population[8].

The difficulties of access to health services go far beyond geographical aspects, and are mainly related to the insufficient supply of services[9]. In addition, organizational aspects should be considered, namely economic; social; cultural; religious and epidemiological factors, and communication with health teams[9,10].

In a general sense, there are still gaps in knowledge about access to and use of health services. Most studies are based on the needs of those who are already present in such services, demographic characteristics and the most prevalent health problems[11]. Studies conducted with users of health services exclude those not seeking care, and hamper knowledge at a population level[11]. Therefore, population-based studies are warranted. In addition, it is clear that there is little uniformity in the process of analyzing the difficulty of access to health services, which represents an obstacle for comparative investigation of the literature and highlights the need for further studies in the area[12].

Estimating the prevalence and identifying factors associated with poor access to health services emphasizes the real situation regarding access for older adults and contributes to raising the awareness, through reliable data, of managers and health professionals about the need for adaptations, interventions, knowledge and planning of public policies in order to promote the expansion of access, reception and care that is decisive if aging with quality is to be achieved[12].

In terms of health professionals, the present study can stimulate a need for training and changes in the organization of work processes in order to provide older adults with access to quality health services. Frailty, morbidity and other determinants are barriers to access to health and recognizing them is important for professionals working in health services, family members, and those involved in the intake and integrated care of older adults[8].

It is also important to highlight that the north of the state of Minas Gerais, where the present study is located, represents one of the most deprived regions in Brazil and has human development indexes that are among the lowest in the state and, therefore, requires research related to health care for older adults, including the assessment of possible difficulties in access and their determinants[13]. In this context, the study aimed to estimate the prevalence of difficulties in access to health services among non-institutionalized older adults in the city of Montes Claros, Minas Gerais, Brazil, and identify factors associated with the same.

METHOD

This is a cross-sectional study nested in a population-based cohort conducted in the municipal region of Montes Claros, in the north of the state of Minas Gerais, Brazil, which has a population of approximately 404,000 inhabitants and represents the main regional urban center[14].

The sample size at baseline was calculated to estimate the prevalence of each health outcome investigated in the epidemiological survey, considering an estimated population of 30,790 older adults (13,127 men and 17,663 women) living in the urban region, according to 2010 census data from the Brazilian Institute of Geography and Statistics (or IBGE); a 95% confidence level; a conservative prevalence of 50% for unknown outcomes and a sampling error of 5%. As cluster sampling was used, the number identified was multiplied by a correction factor and delineation effect (deff) of 1.5%, plus 15% for any losses. The minimum number of older persons defined by the sample calculation was 360 (baseline).

The baseline sampling process was probabilistic, by cluster and in two stages. In the first stage, the census tract was used as the sampling unit. Forty-two census tracts were randomly selected among the 362 urban sectors in the municipal region, according to IBGE data[14]. In the second stage, the number of households was defined according to the population density of individuals aged 60 years or older. At this stage, more households were allocated from the sectors with the largest number of older adults, in order to produce a more representative sample of the population. After the households were drawn, checks were carried out to see if the selected house contained older residents. If not, the researchers checked if the household to the left or right contained such individuals.

Data collection was performed between November 2016 and February 2017. The inclusion criterion was 60 years of age or older. Older people who were not available to participate following at least three visits on different days and at different times, even with prior appointment, were considered losses, as well as older adults whose caregivers/family members refused to participate in the study.

The data collection instrument used was based on similar population-based studies[15,16]. Specifically, the dimension of access was adapted from the Ministry of Health's Vigitel 2010 survey[17], and was previously tested in this research project through a pilot study in a specially selected census tract, the data of which were not included in the final survey. The process of form completion, verifying data consistency and quality control, as well as storing the information was coordinated by the principal investigator.

The interviewers (undergraduate students in Nursing and Medicine) were previously trained and calibrated, with the Kappa agreement measure (0.8) used. For data collection, the census tracts were traversed from a previously defined point in each tract, for the carrying out of the interviews. The questionnaire questions were answered with the help of family members or caregivers for those older adults who were unable to respond, following the guidelines of the data collection instruments.

The demographic, social and economic characteristics of the group were evaluated; as well as variables related to health care and access to and use of health services. Frailty was assessed using the Edmonton Frail Scale (EFS) scale[18]. The perception of difficulty in using the most sought after health service was also assessed, through the question "Do you have any difficulty in using your main health service when you need it?". The answer to this question was taken as a dependent variable and was dichotomized as yes or no.

The independent variables studied were: demographic: sex (male and female), age group (dichotomized as up to 79 years old and equal to or above 80 years old, due to a worsening of frailty in this age group). Social: marital status (with or without partner), condition of living alone or with others, education (up to 4 years of schooling or more than 4 years), reading (knowing how to read or not). Economic: own income, monthly family income (up to 1 minimum wage or more than 1 minimum wage). Medical: presence of chronic comorbidities (hypertension, diabetes mellitus, acute myocardial infarction, osteoarticular diseases, neoplasia, stroke). Self-perceived health, presence of caregiver, falls in the last 12 months, hospitalization in the last 12

months, frailty. Relating to access: transportation difficulties, financial difficulties, absence of company, poor health services, geographical and architectural barriers, as well as the time needed to reach the health service. Having a health plan, the main type of service sought (public or private), types of service that the individual found most difficult to access: private emergency care, unified national health service (or SUS), specialty center and basic unit of the Family Health Strategy (FHS).

Frailty was assessed using the Edmonton Frail Scale (EFS)[18], an instrument that assesses nine domains: cognition; health condition; functional independence; social support; use of medication; nutrition; mood; urinary continence and functional performance. These domains are divided into 11 items, with a score from 0 to 17. For statistical analysis, the scale results were divided into two levels: not frail (final score ≤6) and frail (score >6).

The analysis of the results involved the construction of a spreadsheet in the Excel® program, for organization and double entry of data with conferring and comparison of such data entry. The information was coded and transferred to a database of the analytical software program the Statistical Package for Social Sciences - SPSS, version 18.0, (SPSS for Windows, Chicago, USA), in order to evaluate possible relationships of association between the variables.

Bivariate analyzes were performed to identify factors associated with the response variable using the chi-squared test. The magnitude of the associations was estimated from the prevalence ratio (PR). Poisson regression with robust variance was used to calculate the adjusted PR, considering, jointly, the independent variables most strongly associated with difficulty with access in the bivariate analysis, up to a 20% significance level (p<0.20). For the analysis of the final model, a significance level of 0.05 (p<0.05) was considered.

The study complied with Resolution Nº 466, dated 12 December 2012, of the National Health Council/ Ministry of Health, which establishes guidelines and standards that regulate studies involving human beings. The study was approved by the Research Ethics Committee of the Faculdades Integradas Pitágoras (Pitágoras Integrated Colleges) de Montes Claros under Opinion nº 1629.395 08/07/2016 and CAAE nº 56520216.4.0000.5109. All of the older adults signed a Free and Informed Consent Form in relation to their participation in the study.

RESULTS

A total of 394 older community members participated in this study. The evaluation of the sample characteristics showed a predominance of women, 263 (66.8%). The most prevalent age group was between 60 and 79 years old, 302 (76.6%), with a mean age of 73.9 (sd ±7.9) years. A total of 199 (50.6%) older adults lived without a partner; 295 (74.9%) had up to four years of schooling. In terms of the social variables, 348 (88.3%) older adults did not have a caregiver. Of the medical variables, 281 (71.3%) were hypertensive; 189 (48.0%) reported osteoarticular diseases.

The most sought after health services were Family Health Strategies, 259 (65.7%), followed by Emergency Room, 188 (47.7%). Private or health insurance services (plans) were sought by 132 (33.5%) older adults. A total of 122 (17.8%) older adults were hospitalized in the 12 months prior to the survey.

Regarding access issues, the principal difficulties in accessing the main health service were: transportation difficulties, 39 (30%), lack of financial resources, 32 (24.6%), lack of company, 30 (23.1%), the perception that the service was poor, 58 (44.6%), architectural barriers, 24 (18.5%), geographic barriers, 28 (21.5%). The average time taken to reach the main service was 16.4 minutes.

Table 1 shows the bivariate analysis of the difficulty of access to health services according to demographic, socioeconomic and health variables and access to health services data.

Table 2 shows the factors associated with the difficulty of access to health services among community-dwelling older adults.

Table 1. Bivariate analysis of the difficulty of access to health services according to demographic, socioeconomic and health variables and access to health services data (n=394). Montes Claros, Minas Gerais, Brazil, 2018.

Independent Variables	Sample	Difficulty with access		
		Yes	No	
	n (%)	n (%)	n (%)	p-value
Demographic Characteristics				
Sex				0.463
Male	131 (33.2)	40 (30.5)	91 (69.5)	
Female	263 (66.8)	90 (34.2)	173 (65.8)	
Age range (years) (mean 73.9±7.9)				0.928
Up to 79	302 (76.6)	100 (33.1)	202 (69.9)	
≥80	92 (23.4)	30 (32.6)	62 (67.4)	
Social Characteristics				
Marital status				**0.004**
With partner	195 (49.5)	51 (26.2)	144 (73.8)	
Without partner	199 (50.6)	79 (39.7)	120 (60.3)	
Living arrangement				**0.036**
Lives alone	50 (12.7)	107 (31.1)	237 (68.9)	
Does not live alone	344 (87.3)	23 (46.0)	27 (54.0)	
Schooling (years)				**0.032**
>4	295 (74.9)	24 (24.2)	75 (75.8)	
Up to 4	99 (25.1)	106 (35.9)	189 (64.1)	
Can read				**0.006**
Yes	300 (76.1)	88 (29.3)	212 (70.7)	
No	94 (23.9)	42 (44.7)	52 (55.3)	
Economic Factors				
Own income				0.755
Yes	355 (90.1)	118 (33.2)	237 (66.8)	
No	39 (9.9)	12 (30.8)	27 (69.2)	
Monthly household income (minimum wage*)				**0.041**
>1	292 (74.1)	88 (30.1)	204 (69.9)	
Up to 1	102 (25.9)	42 (41.2)	60 (58.8)	
Medical factors				
Arterial hypertension				0.137
No	113 (28.7)	31 (27.4)	82 (72.6)	
Yes	281 (71.3)	99 (35.2)	182 (64.8)	
Diabetes *mellitus*				0.346
No	304 (77.2)	104 (34.2)	200 (65.8)	
Yes	90 (22.8)	26 (28.9)	64 (71.1)	
Acute myocardial infarction				0.261
No	284 (72.1)	89 (31.3)	195 (68.7)	
Yes	110 (27.9)	41 (37.3)	69 (62.7)	

to be continued

Continuation of Table 1

Independent Variables	Sample	Difficulty with access		
		Yes	No	
	n (%)	n (%)	n (%)	p-value
Osteoarticular Disease				**0.040**
No	205 (52.0)	58 (28.3)	147 (71.7)	
Yes	189 (48.0)	77 (38.1)	117 (61.9)	
Neoplasia				0.596
No	356 (90.4)	116 (32.6)	240 (67.4)	
Yes	38 (9.6)	14 (36.8)	24 (63.2)	
Stroke				0.859
No	365 (92.6)	120 (32.9)	245 (67.1)	
Yes	29 (7.4)	10 (34.5)	19 (65.5)	
Self-perception of health				**0.002**
Positive	187 (47.5)	47 (25.1)	140 (74.9)	
Negative	207 (52.5)	83 (40.1)	124 (59.9)	
Has a caregiver				**0.052**
No	348 (88.3)	109 (31.3)	239 (68.7)	
Yes	46 (11.7)	21 (45.7)	25 (54.3)	
Fall in the last 12 months				**0.002**
No	271 (68.8)	76 (28)	195 (72.0)	
Yes	123 (31.2)	54 (43.9)	69 (56.1)	
Hospitalization in the last 12 months				**0.005**
No	337 (85.5)	102 (30.3)	235 (69.7)	
Yes	57 (14.5)	28 (49.1)	29 (50.9)	
Frail				**<0.001**
No	283 (71.8)	75 (26.5)	208 (73.5)	
Yes	111 (28.2)	55 (49.5)	56 (50.5)	
Characteristics Related to Access				
Has health plan				**0.007**
Yes	14 9(37.8)	37 (24.8)	11 2(75.2)	
No	245 (62.2)	93 (38.0)	152 (62.0)	
Who pays for health plan				
Older adult themselves	100 (67.1)			
Others	49 (32.9)			
Main Service Sought				**<0.001**
Public	272 (69.0)	108 (39.7)	164 (60.3)	
Private or health plan	122 (31.0)	22 (18.0)	100 (82.0)	
Sought ER** SUS***				0.516
Yes	188 (47.7)	59 (31.4)	129 (68.6)	
No	206 (52.3)	71 (34.5)	135 (65.5)	
Sought Private ER**				0.207
Yes	94 (23.9)	26 (27.7)	68 (72.3)	
No	300 (76.1)	104 (34.7)	196 (65.3)	

to be continued

Continuation of Table 1

Independent Variables	Sample	Difficulty with access		
		Yes	No	
	n (%)	n (%)	n (%)	p-value
Private Appointment				**0.052**
Yes	132 (33.5)	35 (26.5)	97 (73.5)	
No	262 (665)	95 (36.3)	167 (63.7)	
Sought Specialist Care				
Yes	83 (21.1)	23 (27.7)	60 (72.3)	0.249
No	311 (78.9)	107 (34.4)	204 (65.6)	
Sought Family Health Strategy				
Yes	259 (65.7)	98 (37.8)	161 (62.2)	**0.005**
No	100 (34.3)	32 (23.7)	103 (76.3)	

*Minimum wage at time of data collection (R$ 88000); **ER: Emergency Room; ***SUS: Unified Health System

Table 2. Factors associated with difficulty in accessing health services among community-dwelling older adults in Montes Claros, Minas Gerais, Brazil.

Variable	Prevalence Ratio (adjusted)	Confidence Interval	p value
Marital status			
With partner	1		
Without partner	1.21	1.05-1.38	0.005
Can Read			
Yes	1		
Not	1.23	1.02-1.49	0.040
Self-perception of health			
Positive	1		
Negative	1.13	1.01-1.30	0.054
Frail			
No	1		
Yes	1.35	1.10-1.65	0.003
Main Service Sought			
Public	1.32	1.17 -1.50	0.000
Private and health plans	1		

DISCUSSION

In the present study, it was found that 33% of older adults reported difficulty in accessing health services. This prevalence is high, which is an important finding, as older adults constitute a significant section of the demand for care within health services, due to their characteristics of comorbidities, frailty and their health conditions, which make them vulnerable[8]. Possibly, access to health services for older adults, as determined by the National Older Adult Health Policy[19], is not being carried out in practice.

In a study conducted in João Pessoa in the northeast of Brazil, a difficulty of access to services caused by transport and geographical barriers was observed[20]. However, in the present study 67% of older adults had access to the health services they sought. There is a progressive path of health policies

aimed at older adults which must be improved and the access of which must be expanded to achieve full, equal and universal reach.

The significant predominance of women illustrates the phenomenon of the growing feminization of older adults population. This trend mainly occurs due to the difference in mortality by sex, which affects the growth rate of the male and female populations and which prevails in the Brazilian population, resulting in the greater survival of women[2]. One of the challenges of the feminization process of aging is to create social spaces within health services in order to motivate older women to have a social life, and to ensure their access to health services when required. This would prevent isolation and strengthen female self-esteem and autonomy[2,21].

In the present study it was found, in multiple analysis, that there was greater difficulty with access among older adults without a partner; those who could not read; who had negative self-perceptions of their own health and who were frail. Regarding the health services sought, it was found that older adults faced greater difficulties when attempting to access public services.

The greater difficulty of access among older adults without partners can be explained by to the absence of a companion to bring them to the services[22]. Research has shown that widowed, divorced or separated older people have difficulty walking, and that this and the lack of companionship in health care are determinants of problems related to the lack of demand for health services.

The relationship between poor reading and inferior health indicators, including greater difficulties in accessing health services, has already been well described[21,23]. Also in a study conducted in Ceará, it was found that low levels of education may potentiate a worsening of health, due to unhealthy habits caused by a lack of knowledge; greater exclusion and lower levels of information about seeking out health services as early as possible[23].

The chances of seeking health services increase as individuals grow older and have lower levels of education[24], with greater demand expected to lead to greater difficulties in access[11]. Studies conducted in Germany, France and the UK[25] also revealed that users with low levels of education face the greatest obstacles in using the health services they seek. The continued encouragement of literacy among older adults is needed, providing them with learning opportunities that will result in improved self-care and accountability for their health and the timely seeking out of health services[26].

In the present study, older people with a negative self-perception of health and who were frail reported greater difficulties in accessing health services. Similar results were observed in studies conducted in São Paulo[27] and Minas Gerais[28]. A negative perception of health may be related to the presence of morbidity, frailty and other conditions that determine a greater need for medical services. Under these conditions, the more frequent seeking out of such services also implies greater difficulties in access and use[28].

The significant association between access and frailty, a syndrome that involves biological, psychological and social aspects and can negatively impact the social and personal life of older adults, can be understood through the greater need that was observed. Although frailty is a progressive condition, through effective access to health services adequate care can alleviate and prevent symptoms. With increasing frailty older adults have difficulty getting around and require help; the presence of a caregiver and such disorders are barriers for older adults when seeking and using health services[29].

The present study found greater difficulties among older adults who sought the public health service. These difficulties were mainly related to a lack of transportation to get to the health service, a lack of financial resources, the absence of company, a perception of inefficient services and also due to geographical and architectural barriers that prevented or hindered access. In a similar manner, a study conducted in Paraná identified a negative perception among the population about public services, which they saw as offering poor care, with older adults reporting obstacles to obtaining treatment when seeking such services[4]. Such services presented problems related to the non-continuity

of the programs carried out, mainly due to changes in government, and consequent changes in public health policies[4]. In a survey conducted in Maranhão[30] access to public services was also considered poor due to the opening hours of basic health units, which operate during business hours, the lack of a telephone number to schedule appointments, and issues with poor organization.

In the present study, the fact that there was less difficulty in accessing private services among older adults can be explained by the significant portion of the participating population with health plans (37.8%). In addition, about 70% of older adults paid for their own plans. Health insurance coverage among older adults in Brazil has grown rapidly and includes approximately five million people aged 60 and over, representing 29.4% of the total number of older adults in the country[31].

Although not significant in the final model, in this study, the most sought after service was the FHS, and probable problems in this service may explain the greater difficulties in access to public services. Although FHS coverage is increasing across Brazil, inequity of access still persists. Providing quality care is one of the primary goals of health systems, but this intention alone is not always enough. Balancing demand with care capacity still seems to be a serious problem in relation to access to primary health care[32]. Despite these difficulties, the FHS has been able to minimize longstanding inequalities in access. It is believed that for a positive impact on access to be perceived by the population, more time will be needed for the FHS to become fully established[33].

Longevity is paradoxical, as the benefits of living longer are offset by the possibility of chronic illness, physical and psychological decline, isolation, depression, and a reduction in social and economic status. With the increase of older people living in the community, there is a need for more qualified health care and a dependency for care that falls on both the health team and family members, as well as an increased demand for health services[34].

Given this, there is much to be done if the Unified Health System is to provide an effective and efficient response to the health needs and demands of the older adult population. Access to the various health services needs to be expanded and all health professionals, especially those working in the primary care network, the gateway to health services, must be undergo continuous training and skill building to meet the needs of the older population. The greater the access to goods and services of society, the greater the quality of life during the aging process. In this context, health services play a fundamental role in health care, if the older adult population is to enjoy life with all that they have built. This requires investments that prioritize disease prevention; the control of chronic conditions and increased access to health services that enable older adults to live with well-being[2].

The data of the present study should be interpreted in the light of certain limitations, such as the significant loss of older people between the beginning of the study (baseline) and the first wave. There is also the condition of the older adults, with its limitations, such as loss of functionality and cognitive ability, which may have hampered the answering of certain questions, since the questionnaire used was broad and the physical and mental tiredness of older adults may have been an impediment. It is suggested in other studies that data collection is performed at more than one time, in stages.

Although data from a larger longitudinal study were used in the present investigation, the information on access comes from a cross-sectional perspective. Cross-sectional studies have limitations regarding the temporal identification of the studied factors. There is a need for longitudinal studies on the theme that develop and validate access assessment tools and the quality of specific health services for older adults in view of the particularities of this segment of the population, and the lack of standardization in assessing the access and use of health services.

The results show that conditions related to difficulties in access are subject to intervention, which is fundamental for the health promotion and disease prevention among older adults, in order to avoid adverse medical outcomes, especially regarding the difficulties of using health services. Knowledge of the factors associated with difficulties in access among older adults allows health actions aimed at this group to be developed in order to minimize such difficulties[15].

CONCLUSION

Difficulty in accessing the health services sought was reported by a significant proportion of the older adult participants of the study. The main conditions associated with such difficulty were not having a partner; not knowing how to read; having a negative self-perception of one's own health and being classified as frail. In addition, greater difficulties were reported in seeking care from public services.

The present study demonstrates the need for investments aimed at the health of older adults, in order to ensure the care of this growing population. Older adults and health services are closely linked and the relationship between the two may reflect inequities that negatively impact the quality of life of this population, which depends on integrated and effective public policies.

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The role of cultural engagement for older adults: an integrative review of scientific literature

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Abstract

Objective: to understand the role of cultural engagement in the lives of older adults. *Method*: an integrative literature review of publications from 2014 and 2019 in English, Portuguese, and Spanish was conducted. The Scopus, Web of Science, MEDLINE/PubMed, CINAHL, PsycNET®, LILACS, SciELO Citation Index and Science Direct databases were used as sources of information. The descriptors "aged" and the related term "cultural engagement" in the three idioms were used in the search, together with the Boolean operators "AND" or " OR". A total of 12 articles that met the inclusion criteria were found. These were categorized based on the theme. No Brazilian studies were found. *Results*: the panorama found revealed that older adults are more interested in receptive cultural activities, such as going to museums, exhibitions and the theater, as these enrich and add greater social value to their lives. Cultural engagement was associated with a reduction in the incidence of neuropsychiatric disorders (dementia and depression), as well as reducing the incidence of episodes of violence. Participation in cultural activities also constituted a protective factor for cognitive abilities and for the reduction of chronic pain. There is also evidence that associates cultural engagement with a better perception of quality of life and greater well-being, happiness and positive affect, as well as the reduction of negative affect. *Conclusion*: engaging in cultural activities is a way of understanding and respecting cultural diversity, salvaging social identities, and enjoying and providing experiences of great social value, with beneficial impacts in the lives of older adults.

Keywords: Health of the Elderly. Culture. Disease Prevention. Social Identification.

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INTRODUCTION

Participation in the activities that make up our daily lives comes from individual choices, imbued with values, beliefs and experiences that, in turn, are reflections – conscious or otherwise – of the influences of a social group. Participating in these different activities is a way of expressing social identity, just as social identity influences one's engagement[1].

In the choice of activities, the cultural context can be one of the aspects used to understand how people share, create and assign meanings to each activity they perform[2]. However, the repertoire of activities selected by people can change throughout their lives, whether by necessity, preference, ability, opportunity or by changes in their own culture[3].

Several researchers have attempted to understand the involvement and participation of a social group in cultural activities by investigating the engagement and access to different facilities such as museums, theaters or monuments, as well as maintaining the cultural traditions that are passed from generation to generation[4-7]. However, when considering the older age group, the guiding question of such research arises: What is the nature of the engagement of older adults with cultural facilities be described? Does participation in cultural activities have any effect on the lives of these older adults? In this context, the objective of the present article was to understand the role of cultural engagement in old age.

METHODS

The present study took the form of an integrative literature review, the corpus of which was formed of scientific productions that highlight the effects of cultural engagement among older adults. The time frame adopted was five years (2014 to 2019). Searches were conducted in March 2019.

The selected information sources were: Scopus, Web of Science, MEDLINE /PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycNET®, Latin American and Caribbean Health Science Literature (LILACS), Scientific Electronic Library on Line (SciELO) Citation Index and Science Direct.

When selecting the articles the following inclusion criteria were considered, irrespective of the free access to publications: articles that addressed the theme and were in Portuguese, English or Spanish. Literature reviews, conference abstracts, annals and editorials were rejected.

In order to define the search terms, the Health Sciences Descriptors were consulted. The "older adults" descriptor and its correlates were chosen, which were combined with the search term "cultural engagement" and their respective expressions in English and Spanish. The Boolean operators "AND" and "OR" were used for combinations. The strategies constructed with the search terms and results are presented in Table 1.

A total of 139 articles were found. The works identified in the bibliographic search of the databases were exported to Microsoft Excel® spreadsheets for data storage and organization, beginning the process of selecting the research corpus. The identification, screening, eligibility and justification for exclusion steps are presented in Figure 1. In this flowchart, 12 articles met the complete selection process and comprised the final sample of this research.

Table 1. Search strategies and results of articles identified. Rio de Janeiro, 2019.

Sources of information	Search expressions	Results
CINAHL with Full Text (EBSCO)	("aged" OR "older adults" OR "elderly" OR "older person") AND ("cultural engagement")	06
LILACS	"cultural" [Words] and "*idoso*" [Words]	10
LILACS	"cultural" [Words] and "*adultos mayores*" [Words]	00
LILACS	"*engajamento cultural*" [Words] and "*idoso*" [Words]	00
MEDLINE/PubMed	("aged" OR "older adults" OR "elderly" OR "older person") AND "cultural engagement"	12
PsycNET	Any Field: "aged" OR Any Field: "older adults" OR Any Field: "elderly" OR Any Field: "older person" AND Any Field: "cultural engagement"	12
SCIelo Citation Index	TOPIC: ("aged" OR "older adults" OR "elderly" OR "older person") AND TÓPICO: ("cultural engagement")	00
Science Direct	"aged" OR "older adults" OR "elderly" OR "older person") AND TOPIC: ("cultural engagement")	79
Scopus	(TITLE-ABS-KEY ("aged" OR "older adults" OR "elderly" OR "older person") AND TITLE-ABS-KEY ("cultural engagement")	15
Web of Science	TOPIC: ("aged" OR "older adults" OR "elderly" OR "older person") AND TOPIC: ("cultural engagement")	05
Total		139

Source: authors, 2019.

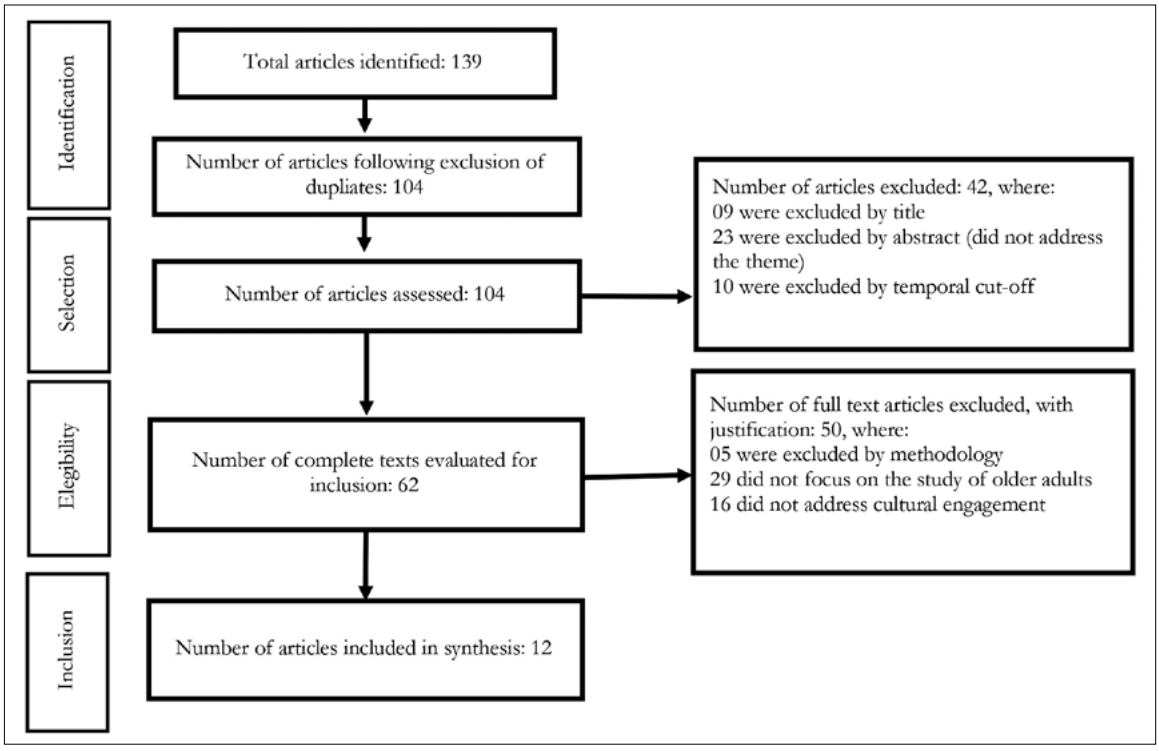

Figure 1. Selection flowchart. Rio de Janeiro, RJ, 2019.

Source: authors, 2019.

For analysis and systematization of the obtained data, a form was created to organize the results. To select the categories of analysis, a skim reading was initially performed to familiarize the researchers with the contents of each study[8]. Data underwent content analysis[8] for the thematic categorization process and subsequent descriptive analysis. In compliance with the theoretical framework, the articles were divided based on the objectives, methodological designs, outcomes and limitations of each study.

RESULTS AND DISCUSSION

The study is made up of 12 articles that are described in Table 2.

Table 2. Characterization of articles in relation to authors and year of publication, region in which studies took place, research objectives, methodological designs, outcomes and limitations of the studies. Rio de Janeiro, 2019.

Authors and year. (Region of study)	Objectives	Methodological design	Outcomes	Limitations
Dyall et al.[9], 2014. (New Zealand)	Relate socioeconomic and cultural profile to quality of life.	Target population: 421 indigenous New Zealand older adults (Maori) and non-Maori; Age variation: 80-90 years; Design: Transversal, cohort data.	1) Contact with Maori culture and language was related to better perception of well-being. 2) The frequency of visiting the tribes was directly related to the engagement in cultural activities, with a better perception of quality of life, in the physical aspects.	1) Cross-sectional study does not allow claims of causality. 2) The assessment instrument used applies concepts of quality of life of Western society, which may differ from the New Zealand concept.
Lai[10], 2014. (USA)	Correlate the use of technologies to participation in socio-cultural practices.	Target population: 2.250 American adults e older adults; Age variation: 31-70 years; Design: Transversal.	1) The use of the internet and apps was associated with engagement in socio-cultural activities, with an increase in the number of trips to cultural facilities.	1) Cross-sectional study does not allow claims of causality. 2) There were few response variables in the assessment instrument and this may have contributed to non-significant effects.
Thomson e Chatterjee[11], 2014. (UK)	Correlate tactile exploration in works of art with affect and well-being.	Target population: 40 British older adults; Age variation: 65-85; years; Design: Transversal.	1) Tactile exploration resulted in increased positive affect, well-being and happiness, and reduced negative affect in the hospital and residential settings. 2) In psychiatric wards there was no difference in positive affect and perception of well-being in the post-intervention. 3) Those who had never visited the museum showed a lack of interest in handling the art pieces and preferred to read the fact sheets, demonstrating curiosity.	1) Small sample with short term interventions. 2) There was no control group. 4) Two interventions were used (individual and group) and their separate effects are not known.

to be continued

Continuation of Chart 2

Ejechi[12], 2015. (Nigeria)	Correlate the level of engagement in socio-cultural activities with perception of health.	Target population: 514 Nigerian adults and older adults; Age variation: 55-75 years; Design: Qualitative.	1) There was no significant difference for the types of socio-cultural participation between retired and non-retired professors. 2) Participation in academic activities declined significantly in retired professors and social participation increased, especially in cultural traditions.	1) The sample was restricted to the category of university professors. Thus, it is not known if the maintenance of cultural traditions applies to the Nigerian population.
Rapacciuolo et al.[13], 2016. (Italy)	To investigate the relationship between subjective well-being and the social impact and cultural participation of residents of an Italian city in a time of economic crisis.	Target population: 571 Italian older adults; Age variation: 62-77 years; Design: Transversal.	1) There is an association between participation in socio-cultural activities and subjective well-being and resilience. 2) Many were unemployed and the city was in economic crisis. As women did not participate in social and cultural activities, they had lower well-being and were less resilient, as availability and access to cultural and social activities was a key element for a healthy environment. 3) Women scored higher than men in happiness when life satisfaction was assessed.	1) Although not described by the authors, one limitation is due to the study design. Longitudinal studies are best suited to investigating emotional aspects and their relationships with cultural access and participation. 2) the socioeconomic condition variable was not highlighted, since this was the reason for the restricted participation of women in cultural devices.
Annear et al.[14], 2016. (Australia)	Identify the practices adopted in nursing homes to keep older people connected to their cultures.	Target population: 3 institutions with Japanese older adults; Age variation: not applicable; Design: Descriptive.	1) To foster cultural engagement, long-term care facilities for older adults carried out activities preserving Japanese traditions (flowers, food and dancing) to keep such adults connected to culture.	1) The authors did not describe the limitations, but the data collection did not include the perception of the older adults about the strategies to connect them to cultural traditions.
Shepherd et al.[4], 2018. (Australia)	Relate identity and cultural engagement to recurrence of violence in indigenous people in custody.	Target population: 119 Australian indigenous adults and older adults; Age variation: 19-63 years; Design: Longitudinal.	1) The level of cultural engagement was greater in those who had a stronger cultural identity. 2) There is a negative relationship between cultural engagement and the recurrence of violence, explained by increased self-esteem, self-confidence, social support and purpose in life.	1) Although the participants were indigenous, they were from different regions and their cultural values could vary wildly. 2) It is not known if the natives harbored multiple identities, without noting their preference of indigenous identity. .

to be continued

Continuation of Chart 2

Fancourt et al[15], 2018. (UK)	Relate cultural engagement to risk of developing dementia.	Target population: 3.911 British adults and older adults; Age variation: 56-72 years; Design: Cohort.	1) Those who visited museums a few times a month or more had a lower incidence of dementia, regardless of the variables: sensory impairment, depression and vascular conditions. 2) The cognitive stimulation provided by museum visits makes cultural engagement an important strategy for maintaining cognitive reserve and reducing social isolation.	1) The study was not experimental.
Goulding[16], 2018. (UK)	Correlate the degree of cultural involvement and its effects on the lives of older adults.	Target population: 40 British older adults; Age variation: 64-98 years; Design: qualitative.	1) Participants engaged in cultural activities to enrich themselves socially. 2) For those with lower levels of education and from lower social classes, cultural engagement was more restricted.	1) Groups varied greatly in size and opportunities for cultural engagement . 3) Not all older people were retired, which reflected in lower cultural participation and may have influenced outcomes.
Fancourt and Steptoe[6], 2018 (a). (UK)	Correlate cultural engagement with cognitive skills.	Target population: 3.445 British adults and older adults; Age variation: 52-90 years; Design: Transversal, cohort data.	1) Cultural engagement seems to have benefits for memory and semantic fluency, regardless of cognitive status, demographic variables, perception of health, and participation in activities. 2) The higher the frequency of engagement, the greater the protective factor for cognition, except for going to the movies. 3) There was no correlation between going to the theater/ concerts/opera and semantic fluency.	1) Cross-sectional study does not allow claims of causality. 2) Data were collected from the previous year only, with no longer deadlines, which does not allow us to draw conclusions on the perpetuation of benefits. 3) There may be a two-way relationship between culture, engagement and cognition.
Fancourt and Steptoe[7], 2018 (b). (UK)	Correlate physical and psychosocial factors (culture) with chronic pain.	Target population: 2.631 British adults and older adults; Age variation: 52-90 years; Design: Transversal, cohort data.	1) Cultural engagement appears as a psychosocial factor that protects chronic pain, except for participation activities in community groups. 3) Cultural engagement proved benefits regardless of sedentary behavior, physical activity and social isolation.	1) Cross-sectional study does not allow claims of causality. 2) This sample is representative of white British people, but the results for other ethnicities are not known.
Fancourt and Tymoszuk[5], 2019. (UK)	Relate cultural engagement to the incidence of depression.	Target population: 2.148 British adults and older adults; Age variation: 52-89 years; Design: Cohort.	1) The higher the frequency of cultural activities, the lower the risk of developing depression, regardless of sociodemographic, health, behavior and forms of social engagement (hobbies, social interactions, community group) and civic variables.	1) Cross-sectional study does not allow claims of causality. 2) May have participants with subclinical moods or depression that would explain the reduction in engagement.

Source: Created by authors from data obtained in study, 2019.

When characterizing the research *corpus*, there was an absence of studies that considered the Brazilian or the Latin American population. Most of the productions were recent (2018, n=5) and from the UK (n=6). All the studies considered were published in English.

To analyze the relationship of the keywords used in the publications reviewed, an infographic was constructed to understand the terms and their associations (figure 2).

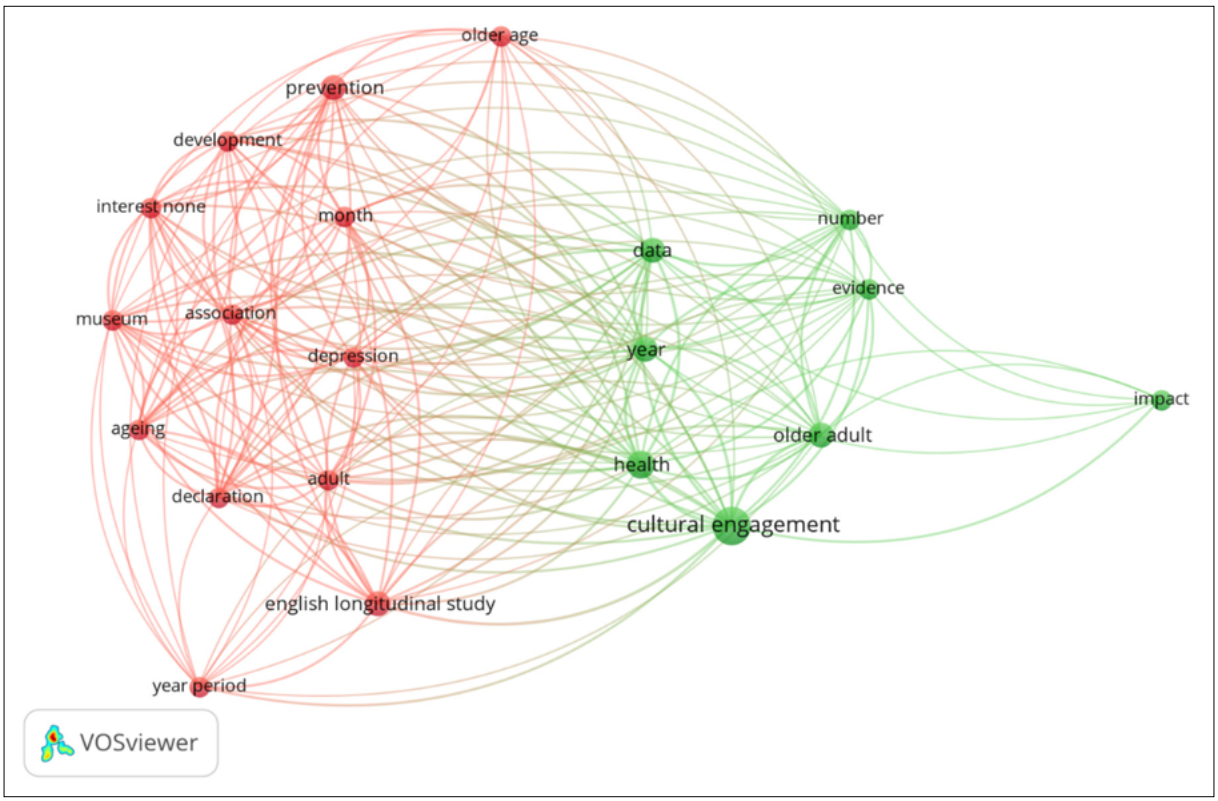

Figure 2. Infographic of terms used in articles.

Source: authors' own production, 2019.

In this representation, the size of the circle is directly proportional to the frequency and importance of the analyzed items. Circles are grouped by subject and represented by different colors[17]. Thus, clusters are observed, in which the following keywords stand out: cultural engagement, older adults, aging and older age, health and prevention. The connections demonstrated that research has been carried out to establish the relationship between culture and health promotion/disease prevention.

In the analysis of the objectives and methodological designs, it was found that the publications were conducted exclusively with an older population (n=5) or groups of adults and older adults (n=7). In this case, five studies included people older than 45 years[5-7,12,15] and two considered younger people[4,10]. In articles with adult and older adult participants, age did not interfere with the results achieved.

Regarding the goals of the studies, the authors were concerned with investigating which cultural facilities the older adults chose[6,10], assessing the perceptions of individuals when participating in cultural activities[9,11-14,16], and evaluating the relationship between cultural engagement and body functions[5-7,15] or changes.

In the analysis of the objectives and outcomes, it appears that the studies by Lai[10] and Goulding[16] attempted to understand which were the most sought after cultural facilities among older adults.

For people who made frequent use of the internet or apps, museums and art galleries were the most sought after places, followed by music festivals, historical sites, parks or monuments[10]. The author suggests that technology is a supportive resource for cultural engagement, as it stimulates greater interest in visiting existing places and provides an increase in sociocultural experiences[10]. In the study by Goulding[16], participation in art history and literature classes, choirs, reading groups and museum visits appeared in this order as the choices of older adults to add greater social value to their experiences at this stage of life.

In the other studies in which cultural facilities were the effective spaces for achieving the objectives of each study, the museum was the most common location.

Some studies sought to understand the perception of cultural engagement in the lives of older adults, namely those by Dyall et al.[9], Thomson and Chatterjee[11], Ejechi[12], Rapacciuolo et al.[13], Annear et al.[14] and Goulding[16].

In the studies by Dyall et al.[9], Ejechi[12] and Annear et al.[14], the perceptions of older adults about maintaining their cultural traditions were investigated. The greater frequency of contact between indigenous peoples (city-dwelling) and their tribes and native languages was associated with a better perception of quality of life and well-being[9].

In the study by Ejechi[12] meanwhile, Nigerian professors reported that they remained engaged in their cultural traditions, such as performing funeral or marriage rites, attending naming ceremonies, and worshiping the gods, represented a successful aging.

Maintaining the Japanese culture and tradition was also the strategy adopted by three long-term institutions for older adults, with the intention of offering potential gains in quality of life and health for institutionalized older adults[14]. The use of traditional Japanese flowers, festivals and foods were the strategies used to connect older adult residents with the outside world and their inherited culture[14].

Among the other studies that sought to understand the relationship between culture and the perceptions of the research participants, that by Rappaciuolo et al.[13] investigated the cultural participation of residents of a city in economic crisis: Naples. In the survey year (2014), the unemployment figures were increasing and the opportunities for socio-cultural experiences were in decline. It was found that men had greater opportunities for cultural and social participation and had a better perception of well-being and resilience compared to women in the survey[13].

In turn, tactile experiences with museum collections was the strategy adopted to provide cultural experiences in older adults who - due to health or age - were restricted in their attendance of cultural establishments[11]. Tactile exploration was associated with increased positive affect, well-being and happiness, and decreased negative affect. There was no difference before and after the intervention for positive affect and well-being in the psychiatric ward participants[11]. Those with no previous experience of museum visits showed curiosity about the collection, but restricted themselves to reading the fact sheets without becoming involved in tactile exploration[11].

By analyzing the relationship between cultural engagement and bodily diseases/functions, scientific studies have shown that participation in cultural activities is associated with lower decline in cognitive functions[6], chronic pain[7], incidence of dementia[15] and depression[5], as well as a lower recurrence of episodes of violence[4]. These studies stated that the frequency of engagement was directly related to increased benefits[4-7,15].

In the study by Fancourt and Steptoe[6] there was a direct relationship between the number of trips to museums, art galleries and/or shows and lower cognitive decline, especially in memory functions and semantic fluency. However, the practice of going to the movies showed no association between frequency and protection of cognition. Similarly, going to concert or the theater/opera had no positive relationship with semantic fluency, which may be due to the late development of interest in these cultural modalities.

Maintaining cognitive skills during museum visits was also associated with a lower incidence rate of dementia, reported in a cohort study over ten years[15]. This study also reinforces the finding that cultural engagement was associated with lesser social

isolation. Similarly, the social interactions provided by engaging in going to the movies, museums, galleries or the theater and watching concerts/opera was also a variable that reduced the incidence rate of depression.[5].

The engagement in these cultural opportunities, similarly, emerged as a protective factor for reports of chronic pain[7]. The authors believe that the reduction of pain, by approximately 25%, was due to cultural activities promoting responses of positive affect and social interaction, as well as being a low resistance physical activity[7].

In turn, the study of indigenous people in custody dealt with the issues of their culture and tribal past. In those with a strong cultural identity, there were behavioral changes within the penitentiary, represented by reduced episodes of violence[4].

In analyzing the limitations of the reviewed studies, the methodological designs were the most frequent limiting factor.

DISCUSSION

The present integrative review of literature reveals, in the small number of scientific productions found, that the theme remains little explored. Although the area has been growing over the years, most studies came from the same region (UK) and the same group of researchers. Restricting research to one territory may not reflect the real role of cultural engagement in old age, as different populations, ethnic variations, opportunities, and availability of resources in each region and their cultures are not considered[3].

Although cultural participation is beneficial to the lives of older adults, collecting cross-sectional data (most methodological designs) does not allow causality to be established, as this method is limited to reporting a panorama ("snapshot") of the object under study, identifying the factors related to the research problem. As they lack a sequential (temporal) follow-up on the studied phenomenon, they are subject to bias by extrinsic factors[18]. However, these cross-sectional research designs contribute to the elaboration of experimental studies that can control the variables capable of interfering in the outcomes and thus monitor the results longitudinally, or propose a follow-up analysis, to identify whether the benefits presented are perpetuated.

The reviewed studies indicate that, despite the diversity of cultural facilities frequented and traditions identified in this review, the museum was the most sought after space by older adults, or the place most used for the data collection in investigations. This is because museums are institutions that are traditionally used to document, preserve and exhibit cultural, material or immaterial heritage[19]. However, the articles indicate other useful facilities for future research on cultural dissemination and experiences, such as libraries, theaters, cinemas and monuments.

Overall, the researchers were interested in investigating the relationship between participation in cultural activities and improvements in health and well-being[20-23]. In line with the reviewed articles, maintaining inherited cultural traditions between generations provided experiences of positive affect, better social coexistence and the strengthening of interpersonal ties[12].

Similarly, participation in different cultural opportunities increased self-esteem and positive emotions, as well as reducing social isolation, anxiety and agitation[21] and enabled the building of resilience[24]. Because of these benefits, researchers highlighted the importance of developing cultural heritage studies for the creation of health programs, as well as the elaboration of public policies.[21,23].

On the other hand, considering institutionalized older adults, studies highlight that within this care modality there are reports of greater social isolation, loss of identity and reduction of affective bonds[25,26]. Thus, the studies presented here, conducted in long-term care facilities, seem to be concerned with the health and quality of life of their residents while maintaining cultural traditions.

In addition, research corroborates the findings of this integrative review by reaffirming the benefits of cultural participation for body functioning. There are positive relationships between cultural engagement and protection against cognitive decline

by maintaining mental functions for a longer period[27]. However, in older adults with dementia, museum experiences had no benefit on cognitive functions, although their effects were positive for mood regulation and the promotion of social interactions[28].

In addition, a reduction in the rate of depression was also found in older adults who performed the tactile exploration of museum collections[29], as well as in adults and older adults who participated in concerts, theaters and cinemas[30] and in research that investigated older adults who took part in a community choir[31].

The literature also points to the benefits of culture in behavior and the perception of pain. The strong cultural identity with other indigenous prisoners associated violence with the poor perception of social and emotional well-being which, in turn, had associations with cultural, spiritual, physical and/ or social aspects[32,33]. Similarly, researchers reaffirm the inverse relationship between sociocultural engagement and pain, in which positive affect was considered a "painkiller" in the lives of people with chronic pain[34,35].

In the present integrative review, certain themes related to the universal right to participate in cultural experiences were not discussed, but may serve as recommendations for future research. No articles were found that sought to identify the environmental and social barriers imposed on these older adults while participating in cultural activities. In addition, older adults with physical, mental and/ or sensory disabilities did not participate in the studies. Inclusion policies for people with disabilities - and specifically policies for inclusion in culture - are regulated by law as part of the full exercise of citizenship[36,37]. However, studies suggest that people with disabilities still experience difficulties in accessing and participating in cultural services and facilities, due to the lack of accessibility, whether architectural and/or attitudinal[38]. The debate on cultural accessibility for the population with specific needs is necessary to broaden access and participation in cultural activities for all.

In a complementary manner, debates regarding socioeconomic conditions[38] and/or educational experience[16] and their relationships with cultural access and engagement should also be better discussed in future scientific productions. Offering opportunities for cultural participation to older people - with different incomes and educational levels - respectfully, without physical, communication, information and attitude barriers, is a way of making a commitment to the democratization of culture[39]. In addition, studies on strategies to disseminate cultural rights contribute to a better awareness of the social rights of older adults.

CONCLUSION

Engaging in cultural activities is a way of understanding and respecting cultural diversity, rescuing social identities, enjoying and providing experiences of high social value, with beneficial impacts on the lives of older people.

In the present integrative review, it was found that older adults were more interested in receptive cultural activities (museums, galleries, and theater). Cultural engagement was associated with the protection of cognitive skills or the reduced incidence of neuropsychiatric diseases, chronic pain and inappropriate behavior. Similarly, culture was associated with a better perception of quality of life, well-being, happiness and positive affect.

When considering the issues of aging in the public policy agenda, it has been found that this theme is still related to dependence, inactivity, frailty and disease, aspects that are also the most recurrent in studies and research in the area. Thus, the present study - in line with conferences around the world, which have reinforced the need to expand research in gerontology - sought to contribute through a different approach, targeting the diverse needs of older people. Review studies such as this one constitute an initial phase of identifying demands and gaps in a given theme, and from them new research possibilities emerge.

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Dissatisfaction with life and associated factors in older community-dwelling adults

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Abstract

Objective: To analyze the prevalence of dissatisfaction with life and associated sociodemographic factors. *Method*: A cross-sectional, population-based study was carried out. Data collection was performed using the Brazil Old Age Schedule (BOAS) questionnaire. A total of 573 older adults from the urban area were interviewed, selected through cluster sampling, stratified by sex. Bivariate analysis was performed using the chi-square and prevalence ratio with a 95% confidence interval (CI). For multivariate analysis, the Poisson Robust regression model was applied. Variables were entered into the model using the backward method. *Results*: The prevalence of dissatisfaction with life was 15.53%. Dissatisfaction with life was associated with women (PR=1.54; 95% CI: 1.02; 2.32), being illiterate (PR=2.57; 95% CI: 1.44; 4.60), having up to four years of schooling (PR=1.79; 95% CI: 1.01; 318) and having an income of less than two minimum wages (PR=3.29; 95% CI: 1.29; 8.42). In the multivariate analysis, being female (PR=1.50; 95% CI: 1.01; 2.25), being illiterate (PR=2.54; 95% CI: 1.42; 4.54) and having up to four years of schooling (PR=1.77; 95% CI: 0.99; 3.14) remained associated with dissatisfaction with life *Conclusion*: the prevalence of dissatisfaction is low. Dissatisfaction with life was associated with sex, education and income, in a bivariate manner. Sex and education were predictors of dissatisfaction with life. These findings reinforce the need for actions to promote social equality between men and women and to facilitate the access of older adults to education.

Keywords: Health of the Elderly. Personal Satisfaction. Health Promotion.

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INTRODUCTION

Discussion of the satisfaction that people have with life has grown in recent years[1]. It is a question of particular relevance for gerontology, as it is closely linked to healthy aging. Most studies related to this theme have been carried out in developed countries[2,3], however, and the subject has only recently attracted interest in developing countries[4,5].

In these countries, population aging is occurring rapidly, with implications for different areas of society[6]. As a result, government and health policies have been created that aim to support this segment of the population. Analysis of the satisfaction with life of older adults is therefore of interest as it helps to achieve the objectives proposed in these policies. In addition, it provides additional information on the specificities of older adults who live in countries with different economic and social configurations to developed nations.

Life satisfaction is the subjective judgment that an individual makes about their own life and is an important indicator of a person's quality of life[7], being influenced by sociodemographic, economic and health factors, among others[8-10]. It is a complex phenomenon, assessed as a whole or in relation to a specific aspect of people's lives and/or health.

Surveys conducted with older adults have investigated the satisfaction of this group with life in general[8,9], as well as in relation to certain aspects of life, such as old age, physical health, family relationships and the ability to solve problems[8,10].

In Brazil, literature on satisfaction with life among the older population remains scarce[8,9]. Specifically, no study was found with a focus on the dissatisfaction with life of this segment of the population. Studies of this type are relevant insofar as they reveal the aspects that cause an individual to feel dissatisfied with their life, and may have a direct impact on various aspects of their life and well-being.

Thus, the following questions were asked: *What is the prevalence of dissatisfied older adults? What factors are associated with older adults' dissatisfaction with life?* In view of the above, the objective of the present study was to analyze the prevalence of dissatisfaction with life and associated sociodemographic factors in older residents in the community.

METHOD

A cross-sectional study, based on a household survey, was carried out in the city of Cuiabá, Mato Grosso, Brazil, which has a population of 45,632 older adults[11]. The study included all people aged 60 or over, living in the urban area of the city. Institutionalized older adults (those living in Long Term Care Facilities for Older Adults, hospitals, prisons, convents, hostels, and shelters) did not participate, along with older adults with cognitive difficulties, such as changes in orientation, memory, attention and language, as assessed by the Mini Mental State Examination (MMSE), or any other condition that would prevent them from answering the questions.

The sampling was probabilistic in nature and a finite population was considered to determine the sample size, using the following equation:

$$n = \frac{n^*}{1 + (n^* / N)} \quad (1)$$

where n^* is given by the equation (2):

$$n^* = \frac{p(1-p)}{V(p)}, \quad (2)$$

With $V(p)=(d/z)2$ where p is the proportion of the characteristic to be estimated, z the value in the standard normal curve, corresponding to the confidence coefficient used, d the sampling error and n the size of the studied population. A 95% confidence coefficient (z=1.96), 5.00% sampling error, and p value of 0.5 (p=0.5) were adopted, which allowed a greater approximation to the value of the variance of the characteristic in the population, and thus, a greater sample size. Therefore, using the number of older adults living in the urban area of Cuiabá (N = 43,096) and the equation (1), the approximate minimum sample size was 381 older adults.

From the cluster sampling, a usual design effect of 1.5 was considered, that is, a correction in the sample size of 50% to achieve the desired precision of the research, giving a total of 573 older adults.

In order to determine the number of individuals to be interviewed in the urban districts of the municipality, the total number of older adults was considered and a stratification by sex was performed as follows: Cuiabá District: 288 older adults (124 men and 163 women); Coxipó da Ponte District: 285 older adults (130 men and 156 women).

The number of census sectors to be visited in each district was determined using cluster sampling, using the following calculation:

$$c_i = \frac{N_i}{C_i} * n_i$$

where *ci* is the number of census sectors to be visited in each district (*i*=1 or 2), *Ni* the number of older adults in each district, *Ci* the number of sectors in each district and *ni* the number of older adults in the sample in each district. Thus, from 355 census sectors in the Cuiabá District, five were selected, and from 437 in the Coxipó da Ponte District, six were selected, totaling 11 census sectors.

When defining the number of census sectors drawn in each district, the criterion of probability proportional to the size of the population of each census sector was defined for the probabilities of each one being drawn, as they have a different number of older adults.

Data were collected through interviews, using the BOAS Questionnaire (Brasil Old Age Schedule)[12]. This is a multidimensional instrument, composed of nine sections on different aspects of the life and health of this population.

The interviews were conducted by trained individuals and strategies were used to ensure the reliability of the data (preparation of a data collection manual, standardization of the data collection form, selection and training of the interviewers, direct monitoring of the researchers in the field and a weekly review of the completion of the questionnaires).

The dependent variable analyzed in the present study was satisfaction with life, obtained from the question: *How do you feel about your life in general?*, categorized as Satisfied or Dissatisfied. The independent variables were: sociodemographic - sex (male; female), age (60 to 69 years; 70 to 79 years; 80 years and over), years of schooling (over 4 years of study; up to 4 years of study, illiterate), marital status (married/partner; single/divorced; widowed), income (more than 3 minimum wages; 2 to 3 minimum wages; less than 2 minimum wages), currently working (yes; no), living arrangements (lives alone; lives with others) and presence of children (yes; no).

The data obtained were organized and processed in a database with the aid of a statistical program.

Initially, the associations between the dependent variable and the independent variables were assessed in a bivariate manner, using the Chi-square test and the prevalence ratio (crude prevalence ratio (PR)) with their respective 95% confidence intervals (95% CI)). Next, the Poisson regression model was used to assess the multivariate association between the outcome variable and the independent variables, obtaining the adjusted prevalences. All independent variables or factors with a $p<0.20$ value in the bivariate analysis were entered in this model. For the entry of variables in the model, the backward method was used.

The research project was approved by the Research Ethics Committee of the Hospital Universitário Júlio Muller under protocol number 135 CEP-HUJM/11. All the participants signed an Informed Consent Form (ICF) before the interview.

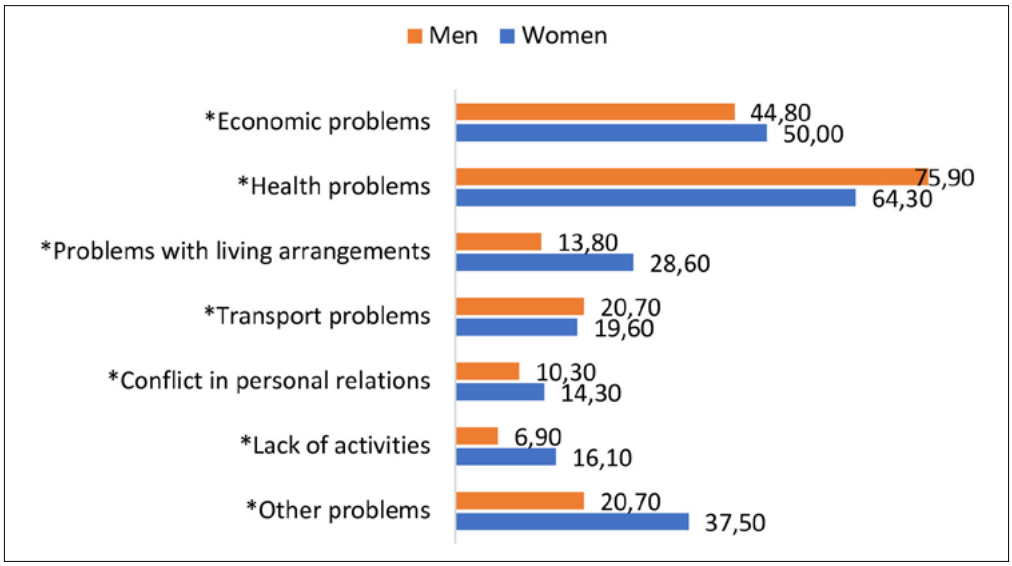
RESULTS

Of the studied population (n=573), 319 (55.67%) were female and 254 (44.33%) were male. The age of the older adults varied between 60 and 112 years (95% CI= 70.86; 72.24), with a mean of 71.55 (±8.38) years. A total of 268 (54.10%) individuals were in the 60 to 69 years old age range. In terms of marital status, 310 (54.10%) were married or had partners and 416 older adults (72.60%) could read and write.

Regarding the satisfaction of older adults with life in general, 484 (84.47%) reported being satisfied. Dissatisfaction with life was reported by 89 older adults (15.53%). The main reasons for such dissatisfaction were health problems (75.90%, men and 64.30%, women) and economic problems (44.80%, men and 50.00%, women) (Figure 1).

The risk factors for dissatisfaction with life were being female, being illiterate, having up to four years of schooling and having an income below two minimum wages. Women showed a prevalence of dissatisfaction with life of 18.24% and had a 0.54 times greater risk of being dissatisfied than men (p= 0.036). Older adults with up to four years of schooling had a 0.79 times greater risk of being dissatisfied with life when compared to older people with more than four years of schooling and a 1.57 times greater risk than illiterates (p=0.042, p≤0.001, respectively). As for income, older adults who earned less than two minimum wages were 2.29 times more at risk of being dissatisfied with life than those with more than three minimum wages (p=0.007) (Table 1).

In the multivariate analysis, the variables that remained associated with dissatisfaction with life were sex and years of schooling (Table 2). Women were 0.50 times more at risk of being dissatisfied with life than men. Illiterate older adults were 1.54 times more at risk of being dissatisfied with life than those with more than four years of study, while those with up to four years of schooling had a 0.77 times greater risk (Table 2).



*Multiple choice variable, the older adults can choose more than one reason for dissatisfaction with life.

Figure 1. Reasons for dissatisfaction with life of older adults according to sex. Cuiabá, Mato Grosso, 2012.

Table 1. Association of dissatisfaction with life among older adults and sociodemographic characteristics (N=573). Cuiabá, Mato Grosso, 2012.

Variables	Satisfaction with life		PRb	(95% CI)	*p*
	Dissatisfied n (%)	Satisfied n (%)			
Sex					
Male	30 (11.81)	224 (88.19)	1.00		
Female	59 (18.50)	260 (81.50)	1.54	[1.02; 2.32]	0.036
Age (years)					
60-69	45 (16.79)	223 (83.21)	1.00		
70-79	30 (14.85)	172 (85.15)	0.89	[0.58; 1.36]	0.583
80 or over	14 (13.59)	89 (86.41)	0.81	[0.47; 1.42]	0.460
Years of schooling					
Over 4	14 (8.75)	146 (91.25)	1.00		
Up to 4	40 (15.63)	216 (84.38)	1.79	[1.01; 3.18]	0.042
Illiterate	35 (22.29)	122 (77.71)	2.57	[1.44; 4.60]	<0.001
Marital status					
Married/common-law marriage	43 (13.87)	267 (86.13)	1.00		
Widow/widower	35 (20.00)	140 (80.00)	1.47	[0.98; 2.21]	0.067
Single/Separated/ Divorced	11 (12.50)	77 (87.50)	0.92	[0.49; 1.70]	0.782
Income (minimum wage)					
Over 3	5 (5.38)	88 (94.62)	1.00		
2 to 3	66 (15.53)	359 (84.47)	1.77	[0.74; 4.21]	0.176
Less than 2	18 (32.73)	37 (67.27)	3.29	[1.29; 8.42]	0.007
Currently working					
Yes	16 (11.35)	125 (88.65)	1.00		
No	73 (16.90)	359 (83.10)	1.48	[0.89; 2.45]	0.124
Living arrangement					
Lives with others	78 (15.26)	433 (84.74)	1.00		
Lives alone	11 (17.74)	51 (82.26)	1.09	[0.60; 1.99]	0.776
Presence of children					
Yes	86 (16.10)	448 (83.90)	1.00		
No	3 (7.69)	36 (92.31)	0.34	[0.09; 1.31]	0.081

PRb: Gross prevalence ratio, 95%, CI: 95% confidence interval, p: Significance level considering Chi-Square distribution.

Table 2. Distribution of prevalence of dissatisfaction with life and gross and adjusted prevalence ratio (PR) by Poisson Robust regression, with respective 95% confidence intervals (CI) and value of p of the variables selected by the backward method (N=573). Cuiabá, Mato Grosso, 2012.

Variables	PRa	(95% CI)	Value *p*
Sex			
Male	1.00	-	-
Female	1.50	1.01 to 2.25	0.049
Years of schooling			
Over 4	1.00	-	-
Up to 4	1.77	0.99 to 3.14	0.053
Illiterate	2.54	1.42 to 4.54	0.002

PRa: Prevalence ratio adjusted in the Poisson regression model with selection of variables, * Significant at a 5% level, CI: confidence interval.

DISCUSSION

The prevalence of dissatisfaction with life found in this study (15.53%) is similar to findings from other studies conducted in Brazil. In a municipality in the interior of Bahia, 14.2% of older adults surveyed said they were dissatisfied[13], as well as 18% of older adults in the city of Belo Horizonte[14]. This result is similar to a study carried out in Nepal, in which the authors found 21% of older adults were dissatisfied with life[15]. These findings show that, in general, only a small portion of the population tends to be dissatisfied with their lives.

Satisfaction with life can be assessed in different ways, including objective aspects, such as work, income, education, access to services and capacity of consumption, as well as economic, political and professional factors[4,16].

Another aspect to be considered when people are asked about their satisfaction with life are subjective aspects, which involve affective and cognitive components[17]. In old age, considering the changes characteristic of aging, the assessment of older adults about their lives can be influenced by a decline in these components[16,18].

However, research has revealed that older people tend to judge their lives positively through considering them over time, comparing them to the lives of others, and assessing their ability to control the environment and themselves, as well as their health, income and social network, among other factors[14]. Thus, the low prevalence of older adults dissatisfied with their life may be related to the fact that several elements were taken into account in the evaluations of the studied group.

Evidence shows that some sociodemographic variables, such as the female sex[19], being widowed[19], a low income[19], and low levels of education[19,20] are associated with dissatisfaction with life. In the present study, the female sex remained positively associated with dissatisfaction with life. This result is consistent with those of other studies[9,19]. Several conditions, such as marriage, pregnancy, children's education, health, work and socioeconomic inequality, can influence the way women feel about their lives[8,21,22].

Another important finding of the present study was that women reported greater dissatisfaction with life due to health and economic problems. This result was also found in previous studies carried out with older women[8,19]. Women are more affected by chronic and disabling morbidities[23,24], while greater longevity exposes women to the deleterious effects of disease for longer[25]. Their economic problems, meanwhile, may be related to the fact that older women generally have lower incomes, which exposes them to social inequality[24,26].

However, investigations have found that dissatisfaction with life is not always related to women[16,27]. It can occur due to the differences that men and women attribute to their lives, such as values and perceptions, in addition to the different roles they occupy in society[24].

The strong association between dissatisfaction with life and years of schooling found in the present study may be related to the influence that education has on people's satisfaction with life[14,19]. Having more years of schooling favors access to information and the job market, leading to better paid jobs, and consequently, better quality of life and health[4].

It is important to emphasize that the population of this study has predominantly low levels of education. The participants school years came at a time when the incentive to study and access to formal education was not encouraged, especially for women, who were usually raised for marriage and childcare[24,28]. Thus, the studied group may not have had the opportunities and benefits that formal education can offer and it is possible that this situation contributed to their unsatisfactory assessment of life.

Surprisingly, due to the frequency with which income appears in studies, this factor was associated with dissatisfaction with life, but when analyzed in the model it lost its effect, leaving only sex and education. According to literature[14], a higher correlation was found between satisfaction with life and income, rather than education. For the authors, the association between satisfaction with life and income can be explained by its influence on people's quality of life.

In the case of older adults, greater income can mean greater access to goods, which provide greater quality of life and health at this stage of life. In addition, higher levels of education can improve the knowledge of older adults about making more suitable choices for their life and health and adopting healthy lifestyle habits, as well as providing access to information and services and higher incomes. However, insufficient economic resources may not allow the older person to benefit from these options[14].

The present study provides important results on the lives of older adults in a developing country. In this sense, it contributes to the expansion of the scientific knowledge about older adults in these countries and their quality of life. In demonstrating the prevalence of dissatisfaction with life of older adults and the factors associated with it, it supports other studies in constructing a greater understanding of the aging process. In addition, the study includes a large and representative sample of older adults living in an urban area, which allows generalizations for the reference population of the study.

The present study has limitations, as it did not include people who lived in the countryside, and its results therefore apply only to older adults living in urban areas. It may be that older adults living in rural areas would evaluate their lives differently.

CONCLUSION

The prevalence of dissatisfaction in the present study was 15.53%. In the bivariate analysis, the categories associated with dissatisfaction with life were the female sex, having up to four years of schooling, being illiterate and having an income of less than two minimum salaries. When analyzed together, in the multivariate analysis, income lost its effect, with only being female, being illiterate and having up to four years of schooling remaining in the final model. Thus, the variables sex and education were predictors of dissatisfaction with life.

Actions that promote social equality between men and women, such as equal earnings, are necessary to improve satisfaction with life among older adults. In addition, it is essential to create strategies to facilitate and favor the access to education services of older adults.

The results of the present study provide important contributions to the literature on satisfaction with life in developing countries, since it provides information on the specificities of these older adults. Considering such specificities, the government and health professionals can promote strategies to improve the living conditions of older adults, through groups in health units and social centers, aiming to develop activities that allow the discussion of gender and guaranteeing access to formal and financial education.

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Neglect and psychological abuse of older adults in a Brazilian state: analysis of reports between 2011 and 2018

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Abstract

Objective: to identify the prevalence of neglect and psychological abuse of older adults and their associations with the characteristics of the victim, the aggressor and the type of aggression in Espírito Santo, Brazil. *Method*: a cross-sectional study, with data on reports of neglect and psychological abuse of older adults registered in the Espírito Santo Reports of Disease and Harm Information System between 2011-2018. Analyzes were conducted according to the type of abuse and the independent variables were composed of the characteristics of the victim, the aggressor and the type of aggression. For multivariate analysis, Poisson Regression with robust variance was used. *Results*: during the study period, 296 cases of neglect (18,1%; CI95%: 16,31-20,04) and 193 cases of psychological abuse (11,8%; CI95%: 10,32-13,46) were reported. Neglect was more prevalent against older adults aged 80 years and over, who were black, had a partner, and were disabled, and was often committed by the victim's son(s) or daughter(s), in their home, in urban areas, in an unmotivated and chronic manner. Psychological abuse was associated with women, perpetrated by men, after alcohol consumption, motivated by intolerance, in the urban area and carried out in a chronic manner. *Conclusion*: the characteristics of the victim, aggressor and aggression were associated with the occurrence of negligence and psychological abuse differently for each type of abuse. Such abuse is often committed in a veiled manner, and thus goes underreported. It is believed that with the diffusion of knowledge and the carrying out of new studies will contribute to the confrontation, monitoring and prevention of this disease.

Keywords: Violence. Elder Abuse. Health of the Elderly. Mandatory Reporting. Information Systems.

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INTRODUCTION

Abuse of older adults can be subdivided into the categories of physical, psychological, sexual, financial abuse or neglect, and conceptually refers to any type of single or repeated action which results in injury or suffering to older adults[1]. Abuse can also be understood as visible, when it causes deaths or physical injuries, or invisible, when it does not cause apparent injuries[2].

According to the World Health Organization (WHO), abuse is responsible for low quality of life, emotional disorders, psychological stress, isolation, injuries and physical trauma, in addition to increasing the risk of hospital admissions or stays in nursing homes, which may result in death[1].

Neglect is defined as the refusal, omission or insufficiency of adequate primary care, such as food and health care, provided to older adults by family members, caregivers, legal or institutional guardians. Psychological abuse, meanwhile, is conceptually any act of verbal or gestural aggression that provokes emotional suffering, distress and anguish in older adults, in addition to exaggerated demands and humiliating punishments[3].

The worldwide prevalence of abuse against older adults is between 14.3 and 15.7%, varying considerably according to the type of injury[4,5]. It can be noted that 11.6% of attacks are psychological and 4.2% involve neglect[5]. In Brazilian state capitals, the prevalence of abuse against older adults varies from 12.4% to 14.4%[6,7], with psychological abuse being the most frequent, representing 10.7% of cases[7].

When analyzing reported cases in Brazil, psychological abuse and neglect are always among the main types of recorded abuse, commonly preceded by physical violence[8,9]. The epidemiological bulletin published by the Ministry of Health in 2013, which provided data on abuse against older adults in Brazil, highlighted psychological abuse and neglect, with frequencies of 29% and 28%, respectively[10].

Despite the expressive numbers, it is worth mentioning that, as stated by the WHO, abuse against older adults is much more intense and present in society than can be recorded by statistics. It is estimated that throughout the world, only 1 in 24 cases of abuse against older adults are reported[11]. It should be highlighted that, often, the feelings of guilt and shame of the mistreated older adult, associated with the fear of retaliation and reprisal on the part of the aggressor, prevent victims from reporting the abuse suffered[2].

In view of the above, and bearing in mind the importance of revealing abuse against older adults, in order to contribute to a better understanding of the problem and consequently assist in preventing and tackling it, the present study aimed to identify the prevalence of neglect and psychological abuse against older adults and the association with the characteristics of the victim, the aggressor and the aggression, in the state of Espírito Santo, Brazil.

METHODS

An epidemiological, analytical cross-sectional study was conducted, using data from reports of abuse against older adults recorded in the Reports of Disease and Harm Information System (or SINAN), in the state of Espírito Santo, Brazil between 2011 and 2018.

Forming part of the southeastern region of Brazil, the state of Espírito Santo has an area of just over 46,000/Km² and around 3.9 million inhabitants. Divided into 78 municipalities, mostly small and medium sized, the state has undergone a notable change in the age structure of its population, with a significant growth in the older adult population, a phenomenon also observed in Brazil as a whole[12].

The selection of the period for the study was due to the fact that, as of 2011, abuse became part of the list of conditions of compulsory notification[13]. Monitoring of cases of abuse is carried out through the Notification/Investigation Form for Interpersonal and Self-Harmed Abuse, which contains information regarding the profile of the victim and the aggressor, the characteristics of the abuse and any referrals made. This form is filled out by the various notifying sources, including health services, with two copies, one of which remains with the notifying sector and the other with the sector responsible for the Epidemiological Surveillance of the municipality, where the data are entered into the system and later

transferred to state and federal levels, to form part of the national database[14].

The study population is composed of all cases of psychological abuse and neglect practiced against individuals aged 60 years or over, reported in the state of Espírito Santo, between the years 2011 and 2018. In order to carry out statistical analyzes, the database underwent careful exploratory analysis, following the guidelines of the Instructions for Interpersonal and Self-Harmed Abuse Notification[14], to correct possible errors and inconsistencies.

As outcomes under study, two types of interpersonal abuse were analyzed: psychological (yes/no) and neglect (yes/no). The independent variables were: characteristics of the victim - age (60 to 69 years/70 to 79 years/80 years or more), sex (male/female), skin color/ethnicity (white/black/mixed ethnicity), education (0 to 4 years/5 to 8 years/9 years or more), marital status (with partner/without partner) and presence of disability/disorder (yes/no); characteristics of the aggressor - age in years (0 to 19/20 to 59/60 or more), sex (male/female/both), relationship (children/partners/others) and suspected alcohol use (yes/no); characteristics of the aggression - number of people involved (one/two or more), if abuse occurred in the residence (yes/no), at what time of day (morning/afternoon/night/early hours), if there was a history of repetition (yes/no), zone where abuse occurred (urban or rural), motivated by hate (yes/no) and referrals (yes/no).

The data were analyzed using descriptive statistics in crude and relative frequencies and their 95% confidence intervals. Bivariate analyzes were performed using the Chi-square test, with a significance level of $p<0.05$. The association between the variables was tested using Poisson regression with robust variance expressed in gross and adjusted Prevalence Ratios (PR), and the respective 95% confidence intervals. For adjusted analysis, entry into the model occurred with a value of $p<0.20$ and permanence with $p<0.05$. Adjusted analysis occurred with the entry in the model at two levels, the first of which included data about the victim and the second the other variables.

The study was approved by the Research Ethics Committee of the Universidade Federal do Espírito Santo (the Federal University of Espírito Santo), under opinion number 2,819,597, and all the rules and guidelines of Resolutions 466/2012 and 510/2016 of the National Health Council were respected.

RESULTS

Between 2011 and 2018, there were notifications of 1,635 cases of interpersonal abuse against older adults. Approximately one third of these notifications (N = 489 cases) were of psychological abuse and neglect. Neglect-type abuse was observed as the second most reported in the state (n=296; 18.1%; 95% CI: 16.31-20.04), followed by psychological abuse (n=193; 11.8% ; 95% CI: 10.32-13.46) (data not shown in table).

The studied population consisted mostly of older adults aged 80 or over, female, white, with low levels of education (0 to 4 years), with a partner and without disabilities. The aggressors were mostly in the 20-59 age group, male, a child of the victim and without suspected use of alcohol at the time of the abuse. Most of the occurrences involved an aggressor, with the residence being the main place of abuse. Most cases took place in the morning, with a history of repetition and in an urban area. It can be seen that in large part there was no motivation of hate and the cases were referred for follow-up in responsible sectors (Table 1).

Regarding the bivariate analysis, it can be observed that the studied abuse was related to the variables of skin color/ethnicity, education, age and sex of the aggressor, relationship, place of occurrence, history of repetition and motivation ($p<0.05$). It is also noted that only neglect was related to the variables: age, marital status, disability/disorder, suspected alcohol use, number of people involved, time of day and area of occurrence. The variable sex of the victim was related only to psychological abuse ($p<0.05$) (Table 2).

Table 1. Characterization of the reported cases of psychological abuse and neglect against older adults, according to data regarding the victim, the aggressor and the occurrence. Espírito Santo, 2011-2018.

Variables	n (%)	(95% CI)
Age (years)		
60 to 69	165 (33.7)	29,5-38,0
70 to 79	152 (31.1)	27,2-35,0
80 or over	172 (35.2)	30,9-39,5
Sex		
Male	145 (29.7)	25,8-33,7
Female	344 (70.3)	66,3-74,2
Skin color/ethnicity		
White	205 (46.8)	42,0-51,6
Black	76 (17.4)	13,9-21,0
Mixed ethnicity	157 (35.8)	31,5-40,2
Schooling (years)		
0 to 4	184 (63.7)	57,8-68,9
5 to 8	34 (11.8)	8,3-15,9
9 or more	71 (24.6)	19,4-29,4
Marital status		
Partner	274 (67.5)	62,8-71,9
No partner	132 (32.5)	28,1-37,2
Disability/Disorder		
Yes	162 (41.1)	36,3-46,2
No	232 (58.9)	53,8-63,7
Age of aggressor (years)		
0 to 19	04 (1.4)	0,3-2,7
20 to 59	223 (75.9)	71,1-80,6
60 or more	67 (22.8)	18,0-27,5
Sex of aggressor		
Male	197 (45.3)	40,2-49,9
Female	112 (25.7)	21,8-29,7
Both	126 (29.0)	24,6-33,3
Relationship with victim		
Child	225 (56.8)	51,8-61,9
Partners	69 (17.4)	13,9-21,2
Others	102 (25.8)	21,5-30,3
Suspected alcohol use		
Yes	100 (33.7)	28,3-39,4
No	197 (66.3)	60,6-71,7
Number of aggressors		
One	256 (53.8)	49,4-58,0
Two or more	220 (46.2)	42,0-50,6
Did it take place in residence		
Yes	426 (93.6)	91,4-95,6
No	29 (6.4)	4,4-8,6

to be continued

Continuation of Table 1

Variables	n (%)	(95% CI)
Time of occurrence		
Morning	130 (47.6)	41,8-53,5
Afternoon	73 (26.7)	21,6-32,2
Night	44 (16.1)	12,1-20,9
Early hours	26 (9.5)	6,2-13,2
Recurrent abuse		
Yes	368 (89.5)	86,4-92,5
No	43 (10.5)	7,5-13,6
Occurrence zone		
Urban	440 (94.0)	91,4-95,5
Rural	28 (6.0)	4,5-8,7
Motivated by hate		
Yes	113 (39.0)	33,4-44,5
No	177 (61.0)	55,5-66,6
Referrals		
Yes	416 (86.5)	83,6-89,4
No	65 (13.5)	10,6-16,4

The absolute frequency totals differ due to missing data (blank or ignored in the notification forms).

Table 2. Characterization of the reported cases of psychological abuse and neglect against older adults, according to the data of the victim, the aggressor and the occurrence. Espírito Santo, 2011-2018.

Variables	Psychological abuse n=193			Neglect n=296		
	n (%)	CI 95%	p-value	n (%)	CI 95%	p-value
Age (years)						
60 to 69	96 (11.5)	9.4-13.7	0.328	69 (8.2)	6.6-10.3	< 0.001
70 to 79	51 (10.9)	8.3-14.0		101 (21.6)	18.0-25.4	
80 or over	46 (14.2)	10.8-18.4		126 (38.9)	33.7-44.3	
Sex						
Male	24 (3.8)	2.6-5.6	< 0.001	121 (19.2)	16.3-22.5	0.338
Female	169 (16.8)	14.6-19.2		175 (17.4)	15.2-19.9	
Skin color/ethnicity						
White	95 (14.7)	12.2-17.7	0.010	110 (17.1)	14.3-20.2	0.001
Black	23 (12.1)	8.1-17.5		53 (27.8)	21.8-34.5	
Mixed ethnicity	57 (9.2)	7.1-11.7		100 (16.1)	13.4-19.2	
Schooling (years)						
0 to 4	74 (12.4)	10.0-15.3	0.021	110 (18.4)	15.5-21.7	0.008
5 to 8	18 (11.9)	7.6-18.2		16 (10.6)	6.6-16.6	
9 or more	45 (19.6)	14.9-25.2		26 (11.3)	7.8-16.1	
Marital status						
Partner	104 (13.4)	11.2-16.0	0.595	170 (21.9)	19.1-25.0	< 0.001
No partner	71 (12.4)	10.0-15.4		61 (10.7)	8.4-13.5	

to be continued

Continuation of Table 2

Variables	Psychological abuse n=193			Neglect n=296		
	n (%)	CI 95%	p-value	n (%)	CI 95%	p-value
Disability/Disorder						
Yes	46 (15.3)	11.7-19.9	0.093	116 (38.7)	33.3-44.3	< 0.001
No	124 (11.7)	9.9-13.8		108 (10.2)	8.5-12.1	
Age of aggressor (years)						
0 to 19	04 (10.3)	3.8-24.6	0.005	-	-	0.017
20 to 59	100 (13.1)	10.9-15.7		123 (16.1)	13.7-18.9	
60 or more	37 (22.7)	16.9-29.8		30 (18.4)	13.2-25.1	
Sex of aggressor						
Male	132 (14.3)	12.2-16.7	0.037	65 (7.0)	5.6-8.9	< 0.001
Female	31 (8.9)	6.3-12.3		81 (23.3)	19.0-27.9	
Both	24 (13.5)	9.2-19.4		102 (57.3)	49.9-64.4	
Relationship with victim						
Child	73 (14.3)	11.5-17.6	< 0.001	152 (29.7)	25.9-33.8	0.001
Partners	53 (20.8)	16.2-26.2		16 (6.3)	3.9-10.0	
Others	43 (7.0)	5.1-9.2		59 (9.5)	7.4-12.1	
Suspected alcohol use						
Yes	73 (16.5)	13.3-20.3	0.059	27 (6.1)	4.2-8.8	< 0.001
No	69 (12.3)	9.8-15.3		128 (22.8)	19.5-26.5	
Number of aggressors						
One	136 (12.7)	10.9-14.9	0.491	120 (11.2)	9.5-13.2	< 0.001
Two or more	53 (11.5)	8.9-14.7		167 (36.2)	31.9-40.6	
Did it take place in residence						
Yes	170 (14.2)	12.3-16.2	< 0.001	256 (21.3)	19.1-23.7	< 0.001
No	13 (4.9)	2.9-8.3		16 (6.1)	3.8-9.7	
Time of occurrence						
Morning	41 (13.8)	10.3-18.2	0.164	89 (29.9)	24.9-35.3	< 0.001
Afternoon	31 (10.4)	7.4-14.4		42 (14.1)	10.6-18.5	
Night	25 (8.1)	5.5-11.7		19 (6.2)	4.0-9.5	
Early hours	13 (11.5)	6.8-18.9		13 (11.5)	6.8-18.9	
Recurrent abuse						
Yes	158 (19.3)	16.7-22.1	< 0.001	210 (25.6)	22.7-28.7	< 0.001
No	18 (3.4)	2.2-5.4		25 (4.8)	3.2-7.0	
Occurrence zone						
Urban	172 (12.9)	11.2-14.8	0.055	268 (20.1)	18.0-22.3	< 0.001
Rural	15 (8.0)	5.4-13.5		13 (6.9)	4.2-11.7	
Motivated by hate						
Yes	75 (18.7)	15.2-22.8	< 0.001	38 (9.5)	7.0-12.8	< 0.001
No	41 (8.9)	6.6-11.8		136 (29.5)	23.5-33.8	
Referrals						
Yes	161 (12.1)	10.4-13.9	0.885	255 (19.1)	17.1-21.3	0.177
No	29 (12.4)	8.7-17.3		36 (15.4)	11.2-20.6	

Test: Pearson's chi-squared

After adjusted analysis, it can be seen in Table 3 that the prevalence of psychological abuse was 4.28 times higher in older women (PR: 4.28; 95% CI: 2.77-6.61), and most frequently carried out by men (PR: 2.92; 95% CI: 1.11-7.71), with suspected alcohol use (PR: 1.55; 95% CI: 1.05-2.29). Psychological abuse was more prevalent in the group with a history of recurrent abuse (PR: 4.31; 95% CI: 1.86-9.95), reported in urban areas (PR: 4.06; 95% CI: 1.05 -15.7) and motivated by hate (PR: 1.78; 95% CI: 1.18-2.70).

Table 3. Crude and adjusted analysis of the effects of the characteristics of the victim, the aggressor and the occurrence on the psychological abuse practiced against older adults. Espírito Santo, 2011-2018.

Variables	Crude Analysis			Adjusted Analysis		
	RP	CI 95%	p-value	PR	CI 95%	p-value
Sex						
Male	1.0		< 0.001	1.0		< 0.001
Female	4.40	2.90-6.67		4.28	2.77-6.61	
Skin color/ethnicity						
White	1.0		0.011	1.0		0.247
Black	0.82	0.54-1.26		0.71	0.40-1.29	
Mixed ethnicity	0.62	0.46-0.85		0.76	0.53-1.10	
Education (years)						
0 to 4	1.0		0.019	1.0		0.225
5 to 8	0.96	0.59-1.56		0.91	0.54-1.52	
9 or more	1.58	1.13-2.22		1.33	0.92-1.91	
Disability / Disorder						
Yes	1.31	0.96-1.79	0.090	1.24	0.90-1.72	0.194
No	1.0			1.0		
Aggressor's age (years)						
0 to 19	1.0		0.004	1.0		0.604
20 to 59	1.28	0.50-3.30		0.69	0.27-1.75	
60 or more	2.21	0.84-5.85		0.80	0.30-2.13	
Sex of the aggressor						
Male	1.06	0.71-1.59	0.044	2.92	1.11-7.71	0.048
Female	0.66	0.40-1.09		1.86	0.64-5.44	
Both	1.0			1.0		
Relationship with the victim						
Child	2.05	1.44-2.94	< 0.001	1.12	0.54-2.33	0.902
Partner	2.99	2.06-4.35		1.0	0.46-2.21	
Others	1.0			1.0		
Suspected alcohol use						
Yes	1.34	0.99-1.82	0.059	1.55	1.05-2.29	0.027
No	1.0			1.0		
Abuse took place at the residence						
Yes	2.87	1.66-4.96	< 0.001	1.21	0.54-2.71	0.636
No	1.0			1.0		

to be continued

Continuation of Table 3

Variables	Crude Analysis			Adjusted Analysis		
	RP	CI 95%	p-value	PR	CI 95%	p-value
Time of occurrence						
Morning	1.20	0.67-2.15	0.171	1.29	0.54-3.08	0.929
Afternoon	0.90	0.49-1.66		1.29	0.53-3.11	
Night	0.71	0.37-1.33		1.15	0.50-2.67	
Early hours	1.0	0.47-1.50		1.0	0.47-1.50	
Recurrent abuse						
Yes	5.61	3.49-9.02	< 0.001	4.31	1.86-9.95	< 0.001
No	1.0			1.0		
Occurrence zone						
Urban	1.62	0.97-2.68	0.063	4.06	1.05-15.7	0.043
Rural	1.0			1.0		
Motivated by hate						
Yes	2.10	1.47-3.00	< 0.001	1.78	1.18-2.70	0.007
No	1.0			1.0		

Teste: Poisson regression with robust variance; PR: prevalence ratio.

Neglect-type abuse, after adjusting for confounding factors, proved to be 4.58 times more prevalent among older people aged 80 and over than younger older people (60 to 69 years old), 45.0% more frequent in black people than those of mixed ethnicity, 42.0% higher among those with a partner, and 3.24 times more prevalent in older adults with some type of disability/disorder.

Table 4. Crude and adjusted analysis of the effects of the characteristics of the victim, the aggressor and the occurrence on the psychological abuse practiced against older adults person. Espírito Santo, 2011-2018.

Variables	Crude Analysis			Adjusted Analysis		
	PR	(95% CI)	*p-value*	PR	(95% CI)	*p-value*
Age (years)						
60 to 69	1.0		< 0.001	1.0		< 0.001
70 to 79	2.62	1.97-3.48		2.78	1.94-3.99	
80 or more	4.72	3.62-6.14		4.58	3.22-6.51	
Skin color/ethnicity						
White	1.06	0.83-1.36	0.001	1.05	0.78-1.41	0.033
Black	1.73	1.29-2.31		1.45	1.08-1.94	
Mixed ethnicity	1.0			1.0		
Education (years)						
0 to 4	1.0		0.010	1.0		0.280
5 to 8	0.58	0.35-0.94		0.85	0.49-1.48	
9 or more	0.62	0.41-0.92		0.67	0.40-1.11	
Marital Status						
Partner	2.05	1.56-2.70	< 0.001	1.42	1.08-1.88	0.013
No partner	1.0			1.0		

to be continued

Continuation of Table 4

Variables	Crude Analysis			Adjusted Analysis		
	PR	(95% CI)	*p-value*	PR	(95% CI)	*p-value*
Disability / Disorder						
Yes	3.80	3.02-4.77	< 0.001	3.24	2.51-4.17	< 0.001
No	1.0			1.0		
Aggressor's age (years)						
0 to 19	--	--	0.477	--	--	0.141
20 to 59	1.0			1.0		
60 or more	1.14	0.79-1.64		1.49	0.88-2.55	
Sex of the aggressor						
Male	1.0		< 0.001	1.0		< 0.001
Female	3.31	2.45-4.48		1.89	0.95-3.76	
Both	8.15	6.24-10.63		3.91	2.01-7.58	
Relationship with the victim						
Children	3.12	2.36-4.11	< 0.001	3.0	1.45-6.21	0.012
Partners	0.66	0.39-1.12		1.88	0.71-4.98	
Others	1.0			1.0		
Suspected alcohol use						
Yes	1.0		< 0.001	1.0		< 0.001
No	3.74	2.51-5.56		2.98	1.60-5.57	
Number of aggressors						
A	1.0		< 0.001	1.0		0. 596
Two or more	3.22	2.61-3.96		0.81	0.37-1.77	
Abuse took place at the residence						
Yes	3.51	2.15-5.70	< 0.001	3.31	1.51-7.55	0.003
No	1.0			1.0		
Time of occurrence						
Morning	2.60	1.51-4.46	< 0.001	1.04	0.47-2.31	0.479
Afternoon	1.22	0.68-2.20		0.68	0.30-1.84	
Night	0.54	0.27-1.05		0.49	0.26-2.46	
Early hours	1.0			1.0		
Recurrent Violence						
Yes	5.36	3.59-7.99	< 0.001	3.82	1.74-8.39	0.001
No	1.0			1.0		
Occurrence zone						
Urban	2.90	1.70-4.96	< 0.001	3.05	1.53-6.08	0.001
Rural	1.0			1.0		
Motivated by hate						
Yes	1.0		< 0.001	1.0		< 0.001
No	3.11	2.23-4.35		2.97	1.85-4.79	
Referrals						
Yes	1.24	0.90-1.71	< 0.001	1.42	0.58-3.49	0.442
No	1.0			1.0		

Test: Poisson regression with robust variance; PR: prevalence ratio.

In relation to the aggressors, it is observed that neglect was predominantly committed by individuals of both sexes (PR: 3.91; 95% CI: 2.01-7.58). Children were often the main aggressors (PR: 3.0; 95% CI: 1.45-6.21), and there was no suspicion of alcohol abuse at the time of the aggression (PR: 2.98; 95% CI: 1, 60-5.57). The occurrence of neglect was 3.31 times higher at home, compared to those that occurred in other environments, 3.82 times more of the recurrent abuse type, and 3.0 times more frequent in the urban area, and not motivated by hate (PR: 2.97).

DISCUSSION

The prevalence of notifications of abuse against older adults in the present study was 11.8% for psychological abuse and 18.1% for neglect. A study[15] that analyzed the reports of abuse against older adults in a state in northeastern Brazil identified a prevalence of 13.3% of psychological abuse, similar to that found in this study, in contrast to neglect, where the prevalence was 26.6%, higher than that identified in the present study. Mascarenhas et al.[8], when studying the reported cases of abuse against older adults across Brazil, also identified higher prevalences in both types of abuse. However, it is worth noting that the literature is not cohesive when dealing with these problems, sometimes indicating a higher prevalence of psychological abuse[9], and sometimes neglect[15], but always emphasizing the divergence.

It is important to point out that, as stated in the literature, both psychological abuse and neglect are diseases that are difficult to detect, and consequently to be reported, mainly because occur intrinsically within family life, and requiring a close look at health and social services so that they can be identified and notified[16.17].

Regarding the characteristics of the victim of aggression, studies[4.18] have shown, among other variables, that functional and cognitive dependence are some of the strongest risk factors for general abuse against older adults, and another study has highlighted these findings with regard to neglect[19]. Considering that the risk of dependence increases with advancing age[4.16], there is a greater demand for care for older adults, consequently increasing the chances of these individuals being victims of neglect, especially when added to the stress and lack of preparation of caregivers[16, 18,19]. This is in line with the findings of the present study, which show that neglect was 4.58 times more prevalent among older people aged 80 and over, compared to those between 60 and 69 years old, and 3.24 times more frequent in older adults with some type of disability or disorder.

With regard to the sex of the victim, it is noted that the prevalence of psychological abuse was 4.28 times higher in women, similar to the study by Ho et al.[20], where the authors report that older women are at greater risk of suffering abuse than men. Historically, regardless of the life cycle, women are more vulnerable to abuse and men more likely to perpetrate it[21,22].

Reinforcing this point, the present study identified that psychological abuse was three times more frequently committed by men, with 55.0%, and more prevalent among those with suspected alcohol consumption. Previous study findings indicate that women are more frequently abused by men[22], and the understanding of this fact results from the analysis of abuse as a product of an unequal society, marked by sexist practices, which are enhanced in the presence of alcohol[23], giving men the subjective belief that they have the right to exercise power over women, usually through abusive acts that often compromise their psychological conditions[22,23].

Regarding the victim's skin color/ethnicity, this variable remained associated only with neglect, where this condition was 45.0% more prevalent in older black people, similar to the results found by Acierno, et al.[19], when studying almost 6,000 older people in the USA, and revealing a higher prevalence of neglect in older people considered to be non-white. Pillemer, et al.[4] and Johannesen and LoGiudice[24] suggest that specific racial groups present divergent risk rates for different types of abuse, indicating the need for studies that seek to elucidate these specific differences.

Another important characteristic of the victim of abuse to be discussed is marital status, which has been shown to be a potential factor related to abuse against older adults[4,25]. In the present study, we found that neglect was 42.0% more prevalent in older people with partners, in agreement with the

findings in the literature[26], a fact that may be the result of a greater burden on caregivers who are seen to have the role of caring for not one, but two older people[20].

Regarding the characteristics of the aggressor, neglect was three times more likely to be committed by the victim's children, of both sexes, corroborating studies found in international[25] and national literature[8,9]. Among the reasons pointed out for this relationship is the family context, reinforcing the data above, and often pointed out in the literature[18] as a stressful environment, with children exercising the role of caregivers, but without the proper preparation for the role, culminating in burden and the consequent neglect of older adults. However, according to Pasinato et al.[17] this fact is the result of the absence or inefficiency of public policies that support families in caring for older adults, in order to minimize harm caused by conflicts and unpreparedness and interrupt the cycle of abuse.

Regarding the characteristics of the occurrence, neglect was 3.31 times more frequently perpetrated within the residence, similar to results found in the literature[8,9,18]. This finding is mainly justified by observing the age group of older adults, where the victims of neglect are older people with disabilities, who are more often restricted to living with their families[8,9,16,19].

Psychological abuse and neglect were more prevalent in the group with a history of recurrent abuse, PR: 4.31 and 3.82 respectively. In addition, cases of neglect were not associated with suspected alcohol use and were not motivated by hate. These results are similar to those described by Mascarenhas et al.[8] and Rocha et al.[9] when studying the reported cases of abuse against older adults in all regions of Brazil, and return the discussion to the theme of caregivers, since literature[16,24] shows that the propensity of recurrence in abuse, especially of neglect, is more closely related to signs of burden, such as stress, anxiety and depression, than it is motivated by external causes such as alcohol, for example. It is important to remember that these situations can be alleviated and even avoided with support and assistance programs for these caregivers[17], which according to Pillemer et al.[4] have been shown to be effective in preventing the re-victimization of older adults, and have potential to reduce the incidence of this condition.

Regarding the area of occurrence, in both forms of abuse studied, a higher prevalence of occurrence was found in the urban area. This finding reflects the greater agglomeration of people in the urban area than in rural areas, as well as easier access to sectors such as police stations or health facilities[22], which, in theory, would facilitate reports of abuse in these regions, and also points to the possibility of underreporting of this problem in rural regions.

Given this situation, there is an important challenge that must be faced by health and social assistance professionals, managers, civil society and older adults themselves so that cases of abuse are properly notified. For this to be possible, it is necessary that professionals in different services are trained to identify the possible victims of this disease. Furthermore, it is important that health professionals are aware of the entire care network offered to victims of abuse and their families, so that all necessary care is provided in coping with and preventing new occurrences of this condition[13].

The present study found important results that can improve the understanding of factors related to the phenomenon of the psychological abuse and neglect of older adults. However, possible limitations need to be considered, such as the analysis of secondary data, where it is common to find inconsistencies. However, an extensive qualification of the database was conducted before the analyzes were carried out. Another identified limitation is the underreporting of cases of abuse, as highlighted in the literature[13]. However, even with these impasses, strong associations were found, that may be even more evident in a greater number of reported cases.

Finally, the cross-sectional nature of the study is also a limitation, making it impossible to establish a causal relationship between the exposure and outcome variables. The importance of this type of study for a better elucidation of the theme is highlighted, however, in addition to its high descriptive potential and analytical simplicity, making it an important support for raising hypotheses and formulating policies.

CONCLUSION

From the results presented, it is concluded that the prevalence of reported psychological abuse and neglect was lower than that found in other Brazilian states, and that characteristics of the victim, the aggressor and the occurrence are associated with these forms of harm, in accordance with the type of abuse. Often such abuse is committed in a veiled manner and for this reason remains underreported. There is therefore a need to increase the visibility and discussion of abuse against older adults so that civil society is more aware of this problem, and so that health professionals are trained to identify, report and deal with this problem, as it is believed that only in this way can the cycle of abuse be broken.

Finally, it is understood that, despite the dissemination of studies on the abuse of older adults in recent years, further studies are needed that analyze their typology separately, as knowledge of these forms of harm in their different manifestations can contribute to the coping with, monitoring and prevention of this phenomenon.

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Managing care for older adults with tuberculosis in Primary Care: an integrative review

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Abstract

Objective: to analyze the available knowledge on the management of care for older adults with tuberculosis in primary care. *Method:* an integrative literature review was performed in the following databases, based on articles from 2008 to 2017: the Latin American and Caribbean Health Sciences (LILACS), International Health Sciences Literature (MEDLINE) and the Cumulative Index to Nursing and Allied Health Literature (CINALH). The sample consisted of six scientific articles, considering the established inclusion and exclusion criteria. Data collection took place in June 2018, using an instrument with information relevant to the proposed objective. *Results:* the selected studies identified weaknesses and challenges in primary health care health services regarding professional skills and knowledge, the entry point to the diagnosis of tuberculosis, the link between professionals and patients, and the logistics of health services. *Conclusion:* a health policy that expands the response of the government and health professionals to the needs of older adults with tuberculosis is recommended, in line with the principles of the Brazilian National Health Service. This health policy would support improving the skills and knowledge of professionals at the entry point to the diagnosis of the disease and enhancing the link between professionals and patients, and the logistics of health services. Health technology could be used to accompany the nursing team in the management of care in geriatric and gerontological research and practice.

Keywords: Health of the Elderly. Tuberculosis. Health Management. Public Health Policy.

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INTRODUCTION

The aging process has had an impact on society, especially in relation to health problems, one of which is tuberculosis (TB)[1]. Older adults are vulnerable to developing this disease due to the decreased effectiveness of their immune system, age-related functional deficits, and dysfunction in mucociliary clearance and pulmonary functioning arising from senescence[2].

In view of the prevalence of tuberculosis in Brazil, the preferred gateway to health services for older adults with the disease are those falling within the scope of Primary Health Care (PHC)[3]. This situation therefore requires a greater commitment from researchers and managers in the area of health to put into practice health policies in these care spaces[4].

In the care strategies applied in PHC, and among health workers who make up the team, nurses have an important role in the control of TB and are at the forefront of the process of fighting the disease. Such health professionals perform their role in a systematic manner to care for patients with the disease. They deal with the control of those who come in contact with the disease, active searches, monthly consultations, medication requests, exams, and when necessary, perform visits at home or in other community spaces. Another fundamental task is the monitoring of the treatment of patients diagnosed with the disease, thus highlighting the importance of nurses in the PHC work process[5].

However, to implement a qualified and effective management system, it is necessary to understand the meaning of care management, which refers to the form in which health technologies are offered, taking into account the needs of each individual and the situation in which they currently live[6]. Care management occurs in several dimensions: individual, family, professional, organizational, systemic and corporate. In this study, the professional dimension was chosen, which emerges from the meeting between healthcare workers and users. This means having specific professional technical competences, namely the ability, experience, training and ethical posture required, and being able to meet the needs of and build bonds with the population[6].

Considering care management as an essential tool for the performance of actions to control TB in the older population and nurses as one of the main actors who produce this care, this literature review aimed to analyze the knowledge available on the management of care for older adults with tuberculosis in Primary Care.

METHOD

The integrative literature review method was chosen as it allows the insertion of evidence in clinical practice based on the foundation of scientific knowledge, with quality results achieved through evidence-based practice. Therefore, the end product is the state of knowledge of the investigated topic: the implementation of effective interventions in the provision of care and the identification of weaknesses that may lead to the development of future investigations[7].

The steps followed in preparing this review were: definition of the research question, literature search, identification of eligible studies, critical analysis of the included studies, interpretation of results and presentation of the review[8].

The guiding question of the study was: *what was published in Brazilian and international literature between 2008 and 2017 regarding the care management of older people diagnosed with TB in PHC services?*

The search was carried out in June 2018, in the following databases: Latin American and Caribbean Health Sciences Literature (or LILACS), International Health Sciences Literature (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINALH), accessed through the journals portal of the Coordination for the Improvement of Higher Education Personnel (or CAPES).

Descriptors in Portuguese and English were used, extracted from the Health Sciences Descriptors (DeCS/Bireme), from the Virtual Health Library, and from the Medical Subject Headings (MeSH), from the National Library or Medicine: *Tuberculose*/Tuberculosis, *Idoso*/Older Adult, *Gestão em Saúde*/health management, *Cuidados de Enfermagem*/nursing care, *Atenção Primária à Saúde*/Primary Health Care.

A priori, applied research was carried out through an advanced subject search. To delimit this, the Boolean AND operator was used together with the following descriptors: *idoso* AND *tuberculose* and older adult AND tuberculosis; *idoso* AND *tuberculose* AND *gestão em saúde* and older adult AND tuberculosis AND health management; *idoso* AND *tuberculose* AND *cuidado de enfermagem* and older adult AND tuberculosis AND nursing care and *idoso* AND *tuberculose* AND *atenção primária à saúde* and older adult AND tuberculosis AND primary health care.

The following inclusion criteria were defined: original articles with full texts that described the proposed theme, in the last ten years (2008 to 2017); with an online version available for free and written in Portuguese, English or Spanish. Works such as theses, dissertations, monographs, review articles, duplicate articles and those that did not respond to the research question were excluded.

For the selection of studies, the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-analyzes (PRISMA) were considered, as shown in Figure 1.

To characterize the selected studies, a semi-structured data collection instrument was used, developed by the researchers, containing items such as: title, journal, authors, database, language, year of publication, topic addressed, academic qualifications of authors, most used methodological method, and data collection instrument/form, in order to extract the main information from the manuscripts.

The evidenced results were analyzed and presented in a descriptive manner, presenting the synthesis of each study included in the review, as well as comparisons between the surveys.

RESULTS

In this review, six scientific articles were included, which were available in the following databases: LILACS (01), MEDLINE (03), CINALH (02).

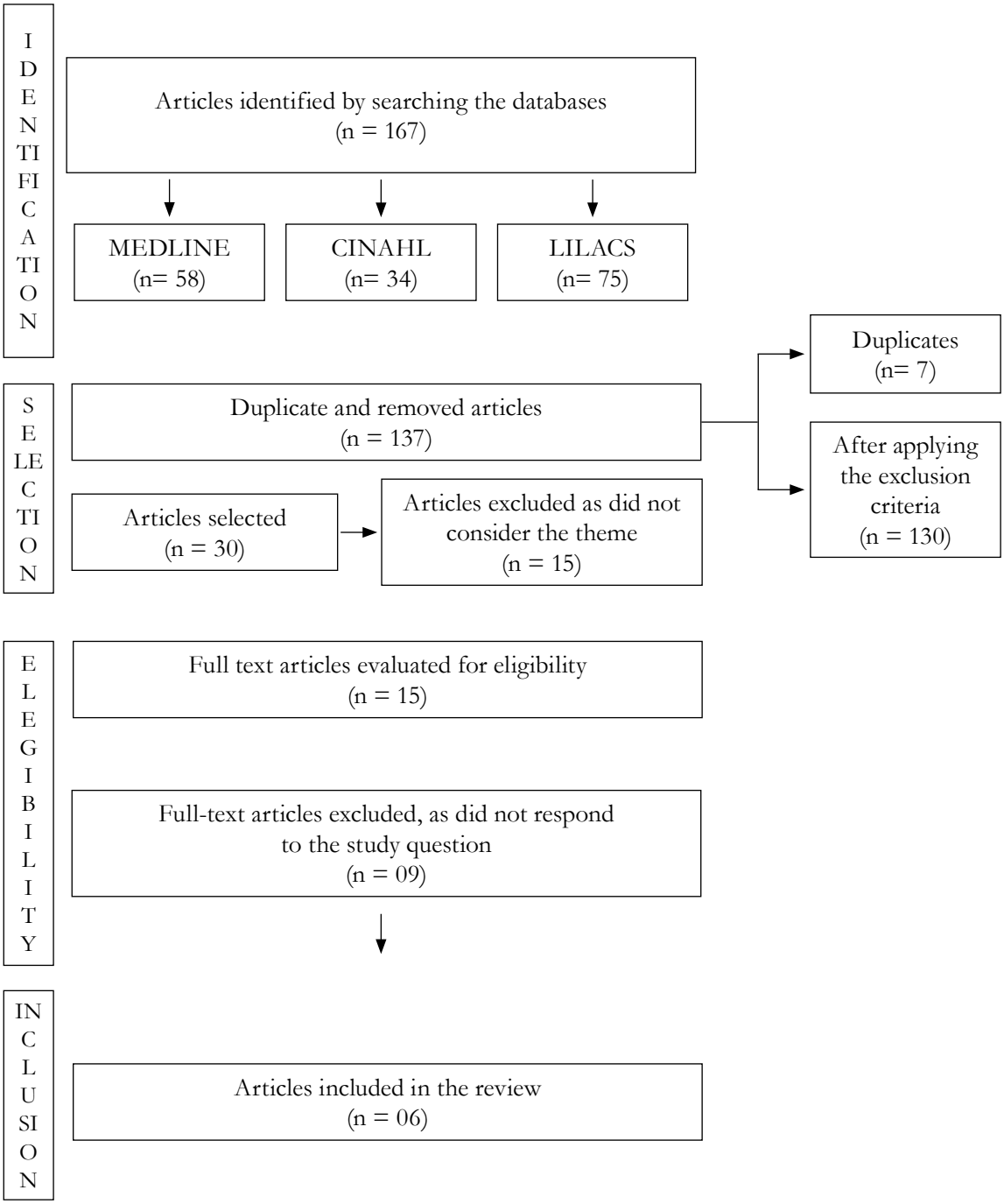

Figure 1. Flowchart of the selection process for primary studies adapted from the Preferred Reporting Items for Systematic Review and Meta-Analyzes (PRISMA). Paraíba, 2019.

Chart 1. Selected articles in the databases regarding the management of care for older adults with tuberculosis in Primary Care. Paraíba, 2019.

Management of care for older adults with TB						
Database Authors Country/Type of study	Objectives	Related to ...	Weaknesses faced by PHC service nurses	Consequences of weaknesses	Challenges faced by nurses	Outcomes of the challenges
Medline Romera, A.A, et al (2016)[4] Brazil / Qualitative	Analyze the discourse of nursing managers related to the conditions that facilitate or hamper TB control in older adults.	Related to professional training:	Training of professionals only if necessary	Professionals unprepared for care	Qualifications of professionals	Continuing Health Education
			Educational practice based on vertical knowledge transmission	Lack of reflection by professionals on TB care actions for older adults		
			Qualification process is the sole responsibility of management	Lack of organization and failures in care		
Cinahl Sá, L.D. et al (2015)[14] Brazil / Qualitative	Analyze the factors associated with the gateway to health systems in Brazilian municipalities for the diagnosis of TB in older adults	Related to professional qualification:	Lack of professional competence to assign diagnostics and transfer responsibilities to users for diagnostic confirmation	Delays in diagnosis		
		Related to the gateway for TB diagnosis:	Primary health care services are not the first point sought by TB patients, nor the first to prove effective for diagnostic confirmation	Lack of trust on the part of patients and families and delayed diagnosis	Standardization of Primary Health Care services as the first service for suspected TB users.	Qualified and trained professional to diagnose the disease, easy access and specific actions to identify symptomatic patients
		Related to the bond between professional and patient:	Failings in intake actions and the bond between health service professionals in primary health care and users	Seek other services		
		Related to the logistics of health services:	Unsuitable hours of functioning for family health units	Distancing from users		
			Lack of specific actions to identify respiratory symptoms	Increase in cases		
			Difficulty in managing spontaneous demand and low resolutive capacity	Lack of TB control		
			Lack of knowledge on the part of users about the location of the family health unit	Low disease coverage		

to be continued

Continuation of Chart 1

Management of care for older adults with TB						
Database Authors Country/Type of study	Objectives	Related to ...	Weaknesses faced by PHC service nurses	Consequences of weaknesses	Challenges faced by nurses	Outcomes of the challenges
Cinahl Andrade, S.L.E. et al (2016)[10] Brazil / Qualitative	To analyze the factors related to delayed diagnosis in older adults in a municipality in the metropolitan region of João Pessoa, Paraiba, evaluating them as part of the gateway process.	Related to the TB diagnosis gateway	Primary health care services are not the first sought	Delays in diagnosis		
		Related to the logistics of health services:	Passive search for respiratory symptoms	User seeks treatment from other services and diagnosis is delayed		
			Searching for cases is not a priority within the reality of primary care services			
		Related to the bond between professional and patient:			Building of bonds	Closer professional relationship with users and home visits
Medline Chen, C. et al (2015)[17] Taiwan / Quantitative	To analyze the temporal pattern of delays in the health system among 3,117 TB patients between 2003 and 2010, in Taiwan.	Related to professional qualification:	Little awareness of doctors and the general public about TB	Low efficiency of disease diagnosis		
		Related to the gateway to TB diagnosis:	Seeks private or specialist services	Delays in diagnosis		
		Related to the logistics of health services:	Reduced case tracking	Delayed diagnosis	Seek to reduce delays in health services	Contact tracing
Medline Yellappa, V. et al (2017)[19] India / Qualitative	Understand the factors that influence the therapeutic itinerary of the TB patient for the National Revised Tuberculosis Control Program of India (RNTCP) and the practices of patient cross-referencing linked to private practices	Related to professional qualification:	Lack of health education by professionals	Limited awareness of patients about tuberculosis		
		Related to the bond between professional and patient:	Lack of effective communication	Non-adherence of user to treatment	Understanding of patients about the particularities of the disease	Health education and effective communication and clarification

to be continued

Continuation of Chart 1

Management of care for older adults with TB						
Database Authors Country/Type of study	Objectives	Related to ...	Weaknesses faced by PHC service nurses	Consequences of weaknesses	Challenges faced by nurses	Outcomes of the challenges
Lilacs Oliveira, A. A. V. et al. (2013)[15] Brazil / Qualitative	Analyze barriers to TB diagnosis in older adults related to health services in the city of João Pessoa, Paraiba.	Related to professional qualification:	FHS professionals are not responsible for tuberculosis diagnosis, implying a lack of professional qualification and knowledge.	Poor service and failures to identify diagnoses		
		Related to the TB diagnosis gateway:	Patients believe that the services offered by other levels of care have greater resolutive capacity	Lack of trust on the part of patients		
		Related to the bond between professional and patient:	Lack of nurse-user interaction.	Care does not take into account the patient's individual characteristics		
		Related to the logistics of health services:	Absence of responsibility of professionals when diagnosing TB	Poor service and failures in identifying diagnoses		
					Work from the perspective of integrality.	Target care towards those with TB.

In relation to the type of journal that made up the sample, four of the articles were published in Brazilian journals in the category of nursing, and the other two articles consisted of studies carried out in Taiwan and India.

After careful reading of the studies included in the review, we sought to group the results extracted from the articles together to allow a more detailed interpretation, discussing weaknesses in the care management of older adults with tuberculosis in PHC services and the challenges for management of tuberculosis care in this population in such services.

DISCUSSION

The production of articles related to the management of care for older adults with TB in PHC is limited, but the publications identified demonstrated the weaknesses and challenges faced by health teams in the management of care for the older population.

Among the weaknesses identified in the management of care for older adults with TB in PHC, the present review highlights: the lack of professional qualification, the fact that PHC services are not seen as a gateway by users, the lack of nurse-user interaction and the logistical problems of the health services.

Corroborating these findings, a study in Divinópolis (Minas Gerais) sought to analyze the implementation of the Tuberculosis Control Program, interviewing health professionals working in PHC. Such research revealed that, although professional training is carried out, the situation is consistent with a lack of knowledge about surveillance actions, a lack of diagnostic tests and the failure to perform Directly Observed Treatment (DOT)[8].

In this context, with a focus on older adults, recognizing cases in which these individuals do not fit the classic symptoms of TB demands a high level of understanding of professional diagnosis, taking into account the physiological changes of aging,

which can represent mechanisms of confusion at the time of diagnostic confirmation[9]. Therefore, professional training is essential, especially in the context of older adults, who have particularities that must be understood and clarified.

A study developed in a municipality in the state of Paraíba[10] agreed with the findings of this research, by demonstrating that PHC is not the first service sought by TB patients. This may be associated with the fact that the services evaluated in the municipality are embryonic in relation to the diagnosis and control of TB, and so older adults seek other options that they believe to be more effective, such as, for example, seeking referral units. The results of this study suggest that the FHS does not act as an ordering agent for the care network, since specialized care is directly accessed by the user, indicating the fragile organizational structure of the service network.

Another survey found that TB patients sought health services several times. There were a number of trips to health care networks before the correct diagnosis was reached, resulting in the use of unnecessary antibiotics, delayed diagnosis and difficulty in seeking specialized services[8].

The logistics and the new dynamics of health services, in the form of the Family Health Strategy (FHS), are differentiating factors in relation to conventional programs. This is based on the fact that the FHS aims to reorient the standard of care, with the goal of reinvigorating aspects related to prevention, promotion and health education, in addition to recognizing obstacles, identifying risks and providing comprehensive care[8].

To ensure quality care, care management for older adults with TB must adapt to the shared management model, in which there is an exchange of knowledge, a multidisciplinary team and distance from the hegemonic model, enabling treatment and providing indispensable resources for prevention and disease control actions[4].

In relation to the dimensions of care management, the professional dimension of the nurse's work process stands out[11], representing the junction between professionals and users, supporting the extension of the micropolitics in health. This dimension is controlled by three main elements: the technical skill of the professional according to their experience and training, since they are able to respond to the problem experienced by the user, aspects of professional ethical, and the creation of bonds with another. This perspective goes against the analyzed studies, which describe a lack of nurse-user interaction, resulting in non-adherence to treatment[6].

One of the factors that can cause the absence of this bond is the turnover of nurses and other health professionals within the PHC services. The bond is essential for the realization of TB control, especially in the older population. To ensure adherence to treatment, professionals should seek strategies, such as home visits, that help to construct this link. In addition, the work burden of professionals can make it difficult to organize services and build the bond[12].

International studies describe the importance of putting in place appropriate approaches to perform diagnosis and treatment, such as, for example, carrying out educational actions on TB, and providing time for dialogue and the clarification of doubts (aimed at health promotion), in order to perform more Directly Observed Treatment (DOT) of older adults[13].

Finally, the findings of the present review refer to bottlenecks in the logistics of PHC services, that weaken the management of care of older people with TB. These include: inadequate and insufficient hours of operation for family health units, as they are expected to include all individuals; the lack of specific actions for the identification of those with symptoms suggestive of TB (respiratory symptoms); the difficulty in managing spontaneous demand; the low resolutive capacity and the reduction in the tracing of cases, considerably delaying the diagnosis of TB[14].

In addition to these weaknesses, one of the studies in this review indicates the identification of barriers to access to TB diagnosis related to health services, such as, for example, the transferring of responsibilities, the absence of home visits, the lack of control of those who come in contact with the disease (such as individuals living in the same environment as a patient with active pulmonary TB), the delay in

the health service related to suspected cases of the disease and the need to visit the health service several times to obtain a diagnosis, negatively affecting the health care of older adults with TB in PHC[15]. In this context, when the subject is the management of care for older adults with TB, the need to enable singular actions that allow efficient, rapid access to diagnosis is analyzed, through the individual characteristics and health needs of the older public[16], which requires early diagnosis and appropriate treatment.

Considering the challenges faced by nurses in the management of care for older people with TB in PHC, the following were identified: Continuing Education in Healthcare (CEH), the standardization of PHC services as a gateway, greater proximity between health professionals and users and the quest to favor access from the perspective of integral care. One strategy that should be used to train professionals is CEH especially with regard to PHC. This process encourages the autonomy, technical and interpersonal skills, creativity, quality and humanization that health teams need to develop the planning and management of care for TB patients. However, it is essential that the particular characteristics of TB in older adults, as well as in other vulnerable groups, constitute a component of the design of continuing education activities for these professionals[17].

This understanding is in line with the premises of health care policies for older adults, making it necessary to strive for continuing education in the workplace, which includes a discussion with workers about the new care needs experienced from increasing population aging[18].

Another challenge identified concerns the standardization of PHC services as the first service for users suspected to have TB. It was observed that PHC, as it is considered the preferred gateway for the Brazilian National Health Service (or SUS) and is responsible for the first level of health care, should be the service sought by patients. However, in the studies analyzed, it was noted that older adults sought specialized, private and other health services, with PHC the last option. In other cases, when reaching this level of care, users were unnecessarily referred to specialized services[19].

Although the diagnosis of disease comes under the responsibility of PHC professionals, such individuals are removed from the diagnosis of TB, implying a transfer of responsibility from these professionals to other services, delaying the diagnosis of older adults TB, a phenomenon already observed in PHC[17].

The delay in diagnosis, due to the difficulty health workers face when identifying the symptoms of TB, means the older adult may have the disease for longer. In addition, it allows transmission to other older people with whom they have contact, with the consequence of recurrent hospitalizations and the increase in cases of death among older adults[10,14].

Another challenging factor is how to ensure effective communication during consultations, dialectically or through health education. It is vital that the patient clearly understands their illness, the therapeutic process and that all their doubts are clarified. In addition, it is important that professionals know how to properly target older patients, who may have greater difficulties in understanding due to their age and comorbidities, generating a co-responsibility in the care process[19].

In order to overcome this obstacle, it is necessary to allow greater proximity between healthcare workers and service users, in order to establish a relationship of trust and, consequently, adherence to treatment and the success of TB control[10]. It is believed that the diagnosis of TB among older adults can be affected by the limitations that exist in health services, such as, for example, the transfer of responsibilities between professionals, the lack of home visits, the difficulty of access and the delay in the results of laboratory tests, which, among other factors, result in late diagnosis, a high abandonment of treatment rate and a lack of TB control[10].

By highlighting these challenges and attempting to remedy them, several benefits can arise, such as early diagnosis, the reduction of mortality rates linked to TB, the reduction of costs associated with treatment, the building of bonds and greater protection and control of the disease.

It is evident that studies on the management of care for older adults with TB are scarce and, when carried

out, are superficial and limited in scope. The reduced number of articles found in this integrative review indicates a limitation of the research, which may be associated with the number of databases consulted.

CONCLUSION

It was found through the search performed that knowledge produced regarding the theme is scarce. Through the studies analyzed, it is possible to observe certain weaknesses and challenges faced by nurses working at the primary level of health services. Often, these professionals face difficulties when implementing actions for early diagnosis and appropriate treatment for the older population with tuberculosis.

In view of this, it is suggested a health policy that broadens the response of the government and health professionals to the needs of the older person diagnosed with the disease, in line with the principles and guidelines of the Brazilian National Health Service. This health policy would support professional training, the gateway to disease diagnosis, the bond between professional and patient and the logistics of health services, as these were the weakest points found in the studies analyzed in this integrative review. To monitor and evaluate the effectiveness of the designs proposed in the health policy, health technologies that aim to help nursing teams manage care more effectively could be used, both in research and in geriatric and gerontological practice.

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Outdoor circuit test: construction and validation of an instrument for the prediction of cardiorespiratory capacity for older adults

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Abstract

Objective: the present study aimed to construct, validate and verify the reliability of a protocol for assessing the cardiorespiratory capacity of older adults attending the Rio ao Ar Livre (Open Air Rio, or RAL) project entitled the "Outdoor Circuit Test" (OCT). *Method*: validity and reliability tests were carried out to assess the accuracy of the OCT, with 50 older adults (70.6 ± 6.3 years) of both sexes who regularly attended the RAL. Validity was tested by collecting VO_{2max} data under maximal cardiopulmonary exercise test conditions, and the OCT variables: a) Circuit Execution Time; b) Heart Rate; c) Subjective Perception of Exertion; d) Average Heart Rate (HRméd). Reliability was tested through the reproducibility of the measurements of the OCT variables, expressed by the Intraclass Correlation Coefficient (ICC). The predictive capacity of VO_{2max} was given by multiple linear regression and the final stability of the model by the analysis of the residues and the calculation of Cook's distances, with a value of $P \leq 0.05$ adopted for statistical significance. *Results:* the predictive model based on age, sex, waist circumference, BMI and circuit execution time explained 41% of VO_{2max} variance, with a standard error of estimate of 18.5%. *Conclusion*: the OCT exhibited satisfactory reproducibility (0.62 to 0.93), and proved to be valid, reliable, and specific for predicting the cardiorespiratory fitness of older adults attending RAL, demonstrating adequate reproducibility and a positive association with the physical fitness of older adults.

Keywords: Aging. Public policy. Physical Exercise. Oxygen Consumption.

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INTRODUCTION

The human aging process involves physiological changes that cause a decline in physical capacities, which can result in a reduction in the overall functionality of older adults[1,2]. To ensure active and healthy population aging, public policies aimed at the practice of physical exercises have been implemented in Brazil[3-5].

The project "Rio ao Ar Livre" (Open Air Rio, or RAL) was created in the city of Rio de Janeiro with the objective of guaranteeing access to and encouraging regular physical exercise among older adults through the construction of public gymnasium spaces with equipment operated by the user's own weight and strength[6]. The project has a training session protocol which takes the form of a mixed circuit (composed of aerobic and muscle strength exercises) guided by Physical Education professionals and applied in all its centers. However, it lacks an instrument for assessing physical fitness suitable for the specific characteristics of the circuit and its equipment[7].

The use of a physical fitness assessment instrument in exercise programs is important for guiding planning and adjustments aimed at achieving improved performance results among the subjects involved[7]. Thus, the implementation of a cardiorespiratory assessment instrument in RAL would be a simple and effective way to monitor the effect of this program[6,7].

Maximum oxygen consumption (VO_{2max}) is considered the best indicator of cardiorespiratory fitness[1]. Its direct measurement is obtained through maximum tests carried out in laboratories and requires specific[8] and expensive equipment, which prevents its use in public policies[9]. However, VO_{2max} can be calculated indirectly through field tests performed with submaximal exertion, a more accessible and applicable method for large populations[10].

In this context, the objective of the present study was to construct, validate and verify the reliability of a protocol for assessing the cardiorespiratory capacity of older people attending RAL, called the Outdoor Circuit Test (OCT).

METHODS

The present study adopted a cross-sectional approach, as it evaluates an instantaneous section of a population by means of sampling[11], in which the accuracy of the Outdoor Circuit Test (OCT) was determined by evaluating its validity and reliability. Validity was determined by comparing the data from the maximal cardiopulmonary exercise test (CPET) and the OCT, while reliability was defined through the reproducibility of the OCT measurements.

The sample consisted of all 50 older people (70.6±6.3 years) who attended the RAL center of the Universidade Federal do Estado do Rio de Janeiro (the State University of Rio de Janeiro) (UERJ), of both sexes and who performed different levels of physical exercise. The following exclusion criteria were adopted: a) presence of musculoskeletal problems that could impair exercise performance; b) lack of medical clearance to perform physical activities.

The study was carried out in accordance with Resolution 466, dated December 17, 2012 and approved by the Ethics Committee of the Hospital Universitário Pedro Ernesto (Pedro Ernesto University Hospital) of the Universidade do Estado do Rio de Janeiro (opinion No. 1,359,995).

Data collection was carried out by a single evaluator and took place at the Physical Activity and Health Promotion Laboratory (or LABSAU), of the UERJ Institute of Physical Education and Sport from March to July 2016. Data collection for the total sample was carried out in two visits, separated by intervals of 48-72 hours. On the first visit, an Informed Consent Form was signed; and anamnesis (where information was collected about the diagnosed diseases and the use of medicines) was carried out; height, body mass and waist circumference were measured; and the CPET was performed; on the second visit the OCT was performed. To determine the reproducibility of the OCT measurements, seven days after the second visit, a third assessment was performed with 20% of the sample, who repeated the test. As all the research subjects were active participants in RAL and their medical clearance was obtained via the CPET, they were already familiar with the data collection procedures of the present study.

The body mass and height measurements were performed following the standardized protocols of Gordon et al.[12], using a digital scale with a stadiometer with precision of 0.1 kg (Filizola, São Paulo, Brazil), while Body Mass Index (BMI) was determined by the quotient body mass (Kg) / (height, m)^2. Waist circumference, measured at its widest point, was measured in centimeters with an anthropometric measuring tape (Sanny, São Paulo, Brazil).

The CPET was performed on a cycle ergometer (Inbrasport, Porto Alegre, Rio Grande do Sul, Brazil) using an individualized ramp protocol[8]. Although this ergometer is considered unsuitable by some authors, as it induces greater peripheral fatigue[13], some studies support its use with older adults, since treadmills do not consider changes in gait, reduced levels of cardiorespiratory capacity, balance and strength, in addition to presenting a greater risk of falls, which accompany the aging process and influence its results[13-15].

The maximum ramp load was estimated from a non-exercise model to predict VO_{2max}[16]. The reason for the increase in loads was to allow a duration of the tests between 8 and 12 minutes. During the application of the tests, the temperature was between 18ºC and 22ºC and the relative humidity was between 50% and 70%, measured through a digital hygrometer HM-01 (São Paulo, Brazil). The test was considered to have reached maximum levels based on three of the following criteria: a) maximum voluntary exhaustion; b) obtaining a plateau for oxygen consumption with the evolution of loads at the end of the test; c) R>1.1; d) a Heart Rate (HR) greater than 95% of that predicted for age or the stabilizing of peak HR with the evolution of loads at the end of the test; e) a subjective perceived exertion scale (SPE) value greater than 9[17]. The gas exchange variables were measured by an Ultima gas analyzer (Medical Graphics, USA) and HR by an electrocardiogram (Welch Allyn, USA). For safety, the test was performed in the presence of a cardiologist.

The OCT consists of the performance, in the shortest possible time, of a mixed circuit[7] of aerobic and resistance exercises performed on RAL devices, at all facilities.

Figure 1 shows the division of the circuit into seven stations: four aerobic exercises (AE) - 1st, 3rd, 5th and 7th, and three resistance exercises (RE) - 2nd, 4th and 6th. The AE stations had a fixed time of five minutes each. The RE stations were performed alternating the upper and lower limbs. In the 2nd and 4th stations, six RE were performed with one series of 15 repetitions. The 6th season consisted of three exercises with two sets of 15 repetitions to balance the number of repetitions. The 2nd and 4th station REs were: vertical bench press, chair extension, pulley, free squat (sit and stand up from a bench), shoulder press, and flexor chair. Those from the 6th season were: seated leg press, seated rowing, calf leg press.

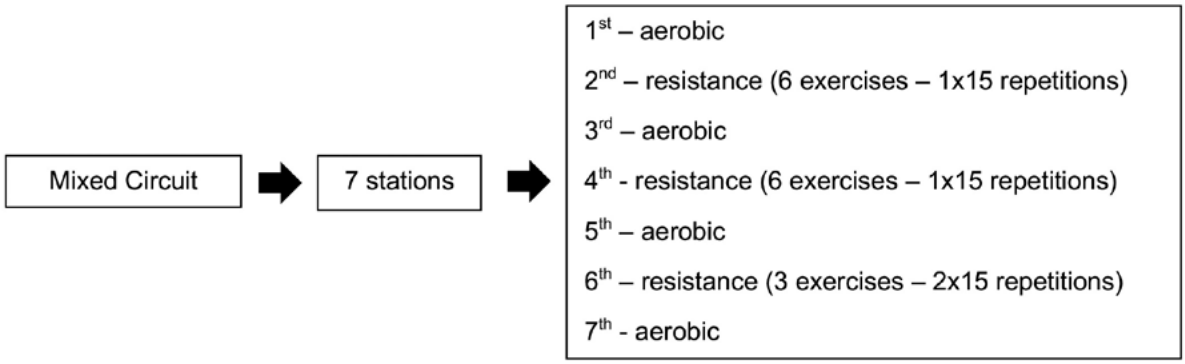

Figure 1. Mixed circuit carried out in Open Air Rio in the city Rio de Janeiro, RJ, 2014.

The circuit variables collected for possible inclusion in the predictive model were: a) Circuit Execution Time (CET) in seconds; b) Heart rate during final 30 seconds of the circuit (HR_{30s}) in beats per minute; c) SPE; d) Mean Heart Rate (HR_{mean}); e) Maximum Heart Rate (HR_{max}). These were chosen as they are easy to measure, since the predictive model developed is aimed at meeting government policy.

The SPE was identified using the Borg-Adapted Scale 0-10[17] at the end of each aerobic station (1st, 3rd, 5th and 7th) on the circuit. HR and CET were measured using the Polar V800 monitor (Polar, Kempele, Finland).

The normality of the variables was confirmed by the Kolmogorov-Smirnov test and its data was described by mean and standard deviation, minimum and maximum value. The reproducibility of the CET, HR and SPE was assessed by the Intraclass Correlation Coefficient (ICC), which considers R values above 0.90 as high; from 0.80 to 0.89 moderate; and below 0.80 questionable for physiological data[18]. Student's t test for independent samples was used to test differences between older people who used beta-blockers and those who did not.

To evaluate the predictive capacity of the circuit in relation to VO_{2max}, the stepwisefoward method of multiple linear regression was used. The variables were included in the model according to the significance of their contribution to the estimate and redundancy. The regression equation was calculated after testing for bias due to the potential presence of outliers and extreme cases. The final stability of the model was tested by analyzing residuals and calculating Cook distances. A value of $p \leq 0.05$ was adopted for statistical significance.

RESULTS

The characterization of the sample is shown in Table 1. Men represented 34% of the sample, while women made up 66%. The HR_{max}, HR_{mean} and HR_{30s} achieved during the circuit were 86±12%, 75±11% and 76±12% of the HR_{max} of the exertion test, respectively. The variation in terms of the HR_{max} during the circuit was 65 to 138%; the HR_{mean} variation was 55 to 120% and the HR_{30s} variation was 56 to 129% of the HR_{max} achieved in the exertion test.

In the CPET, no significant difference was observed between the VO_{2max} index of older adults who used beta-blockers and those who did not (16.2±1.9 *vs.* 16.1±4.0 ml/kg/min, respectively; $p=0.92$), while the HR_{max} of those who used such medication was lower (118±15 *vs.* 140±18 bpm, respectively; $p=0.003$). Likewise, in the OCT the HR was lower in the beta-blocker group (HR_{max}: 101±11 *vs.* 119±14 bpm; $p=0.001$; Average HR: 90±10 *vs.* 103±12 bpm; $p=0.006$; HR30s: 89±9 *vs.* 105±14 bpm; $p=0.003$).

Table 2 shows the reproducibility of the CET, HR and SPE measurements during the OCT. Reproducibility was satisfactory only for the variables CET, HR_{max} and HR_{30s}, as no significant differences were found between the average test and retest values (p-value) for these variables, and their ICC values were equal to or above 0.90.

The model generated the following prediction equation ($R=0.64$, $R^2=0.41$, SEE=2.86 $ml.kg^{-1}.min^{-1}$, $F(5.43)=5.90$, $p<0.001$): VO_{2max} ($ml.kg^{-1}.min^{-1}$)=38.77 - 4.11 (sex; M=0, F=1) - 0.12 (age, years) + 0.19 (BMI, $kg.m^2$) - 0.13 (CET, min) - 0.13 (waist circumference, cm), according to the results shown in Table 3. In summary, our model was able to explain 41% of the variance in VO_{2max} (moderate association - r=0.64), with an approximate error of 3 $ml.kg^{-1}.min^{-1}$. After testing for outliers, only one case was excluded (female, 72 years old, 54.4 kg) to achieve maximum stability and precision of the model (final n=49).

Beta coefficients demonstrated that the relative contribution of each variable ranged between 7% and 56% (Table 3). Despite the minimal contribution of CET, the maintenance of this variable in the model is justified by the fact that it was able to increase R^2 and reduce SEE (Table 3).

Table 1. Sample characterization (n=50; M=17; W=33). Rio de Janeiro, 2020.

Variable	Mean (+sd)	Minimum-Maximum
General characteristics		
Age (years)	70.6±6.3	60-88
Body Mass (Kg)	69.3±11.2	45.6 – 99
Height (m)	1.59±0.08	1.45 - 1.77
Body Mass Index (Kg/m2)	27.2±3.9	19.0 - 36.1
Waist (cm)	95.7±10.2	79 - 119.5
Heart Rate (bpm)	68±11	41-98
Maximum Exercise Cardiopulmonary Test		
VO_{2max} ($ml.kg^{-1}.min^{-1}$)	16.2±3.7	10 - 30.6
HR_{max} (bpm)	137±20	94 – 170
SPE	6.8±1.5	5 – 10
Outdoor circuit testing		
CET (min)	27.8±2.0	25.1 - 34.4
HR_{max} (bpm)	116±15	85 – 148
HR_{mean} (bpm)	101±13	78 – 132
HR_{30s} (bpm)	103±14	79 – 138
SPE	4.7±0.8	3.6

Source: author. Characterization based on mean, standard deviation, minimum and maximum values; M=Men; W=Women; VO_{2max}=maximum oxygen consumption; HRmax=maximum heart rate; SPE=subjective perception of exertion scale; CET=circuit execution time; HRmean=mean heart rate; HR30s=heart rate of the last thirty seconds of the circuit.

Table 2. Reproducibility of the circuit execution time (CET), maximum heart rate (HR_{max}), mean heart rate (HRmean), heart rate during the last thirty seconds of the circuit (HR_{30s}) and subjective perception of exertion (SPE) when performing the OCT (n=10; M=17, W=33). Rio de Janeiro, 2020.

Variables	Measurement 1 Mean (+sd)	Measurement 2 Mean (+sd)	p-value	ICC (95% CI)
CET (min)	27.6±1.2	27.4±1.2	0.25	0.93 (0.72 - 0.98)
HR_{max} (bpm)	118±15	116±14	0.55	0.90 (0.60 - 0.97)
HR_{mean} (bpm)	101±11	104±13	0.41	0.62 (-0.51 - 0.90)
HR_{30s} (bpm)	103±17	99±13	0.10	0.93 (0.72 - 0.98)
SPE	5.3±0.5	4.8±0.7	0.20	0.24 (-1.90 - 0.88)

Source: author, 2020. Reproducibility performed using the intraclass correlation coefficient (ICC) and paired t test for difference between means of test and retest measures; M=Man; W=Woman; 95% CI=confidence interval; CET=circuit execution time; HRmax=maximum heart rate; HRmean=mean heart rate; HR30s=heart rate of the last thirty seconds of the circuit. SPE=subjective perception of exertion.

Table 3. Predictive model of VO_{2max} in older adults (n=50; M=17; W=33). Rio de Janeiro, 2020.

Predictor variables	Nonstandard Coefficients		Standardized Coefficient	t(43)	*p*
	B	Standard Error	β		
Intercept	38.76	7.66		5.06	<0.001 *
Sex (female)	-4.11	0.96	-0.55	-4.27	<0.001 *
Age (years)	-0.12	0.07	-0.22	-1.79	0.08
BMI (Kg/m²)	0.18	0.17	0.21	1.07	0.29
Waist Circumf. (cm)	-0.13	0.06	-0.38	-2.12	0.04*
CET (min)	-0.13	0.22	-0.07	-0.58	0.56

Source: author. *Statistical significance (*p*-value<0.001); Multiple linear regression model – stepwise forward method; BMI=body mass index; CET=circuit execution time.

The adequacy of the predictive model was performed by testing residuals and calculating Cook distances; the model produced small residuals and low amplitude Cook distances.

DISCUSSION

The present study proposed the construction of an instrument to assess the cardiorespiratory capacity of older adults, considering the specific characteristics of the RAL project. This process consisted of testing the accuracy and reliability of OCT.

VO_{2max} can be accurately predicted from field tests, when a determined number of independent variables is used through multiple linear regression procedures[10]. However, previous studies with older people used step or walking protocols that have little specificity in relation to the exercises proposed in RAL[10,19-22].

The predictive model developed, based on age, sex, waist circumference, BMI and CET, explained 41% of VO_{2max} variance, with a standard error of the estimate of 18.5%, and exhibited adequate reproducibility.

However, although the model is significant for predicting the VO_{2max} of older adults, the multiple correlation coefficient (R=0.64) and the associated common variance (R2=0.41) suggest that, although valid, the percentage of explanation of the VO_{2max} of the model is low, compared to previous studies[14,19-23]. A probable explanation for this may be the use of a cycle ergometer to determine the direct measurement of VO_{2max}, as this equipment can induce greater peripheral fatigue[13]. However, its use is defended here as treadmills do not consider that changes in the gait of older adults, and their reduced levels of cardiorespiratory capacity, balance and muscle strength, influence results[13-15].

Another important fact that may have influenced the results is that the OCT involves performing combined, not just aerobic exercises. However, in view of the ideal of developing an assessment tool approximate to the reality of RAL, this proposal represents an option for professionals working in the project, despite its limitations[6,7,9].

It should be noted that there are VO_{2max} prediction protocols that do not involve exercise, but use information about the level of physical activity of older adults, which offer reasonable estimates about their cardiorespiratory fitness, and are widely accepted in this area[24]. However, they are not closely suited to the specific characteristics of RAL[10].

One positive point of the OCT prediction model is that the standard error of estimate observed (2.86 $ml.kg^{-1}.min^{-1}$) was lower than those observed in other proposed field tests[20-23], but the mean VO_{2max} of the sample represented 18.5% of the measured average, unlike other studies, which observed values from 9 to 15%[21,23]. Inaccuracy values close to 20% were also observed in older people in a bench test, in which the sample was similar in size to this study[14].

The variables sex, age, BMI and CET were also used in previous studies with older adults, which proposed VO_{2max} prediction equations based on submaximal bench tests[19] and walking[20-22]. The variables sex, age and BMI are also very common in VO_{2max} prediction equations which do not involve exercise, although models that contain information on the level of physical activity of the individuals provide more accurate estimates[24].

Among the studies included in the systematic review by Venturini et al.[10], only that by Jetté et al.[19] presented explanatory coefficients for each variable in the model. In the present study, it was found that the variables with the greatest explanatory power were sex and waist circumference. The variables: age, BMI and CET were added to the final model to provide a better fit.

In relation to the sample, 66% of the subjects were women, 16% used beta-blockers, and the average VO_{2max} values were 16.2 $ml.kg^{-1}.min^{-1}$, ranging from 10 to 30 $ml.kg^{-1}.min^{-1}$, representing low cardiorespiratory fitness. In previous studies, mean VO_{2max} values between 24-26 $ml.kg^{-1}.min^{-1}$ and 29.5-35.7 $ml.kg^{-1}.min^{-1}$ were observed[21]. It therefore cannot be stated that the present equation applies to older adults with higher levels of physical fitness. The study by Oja et al.[21], for example, found that the VO_{2max} prediction equation from the 2km walk test was not valid for highly active individuals.

It should also be noted that the regression model included both older adults who used beta-blockers and those who did not, as no significant differences were observed in their VO_{2max} levels in the maximum exertion test. A priori, this does not seem to be a problem, given that in the cross-validation sample of the study by Petrella et al.[23], no difference was observed between hypertensive and post-hip arthroscopy patients and healthy individuals.

The reproducibility analyzes found that the scores of the variables measured in the OCT were closely correlated in the two attempts made, presenting an intraclass correlation coefficient of between 0.62 to 0.93. Variables with ICC values above 0.90 were included in the model, as this was considered high for physiological data[18]. The variables that showed the highest reproducibility were CET and HR_{30s} (ICC=0.93). In addition to being valid, tests must be reproducible, as it is important to have stability in their measurements, helping to minimize measurement error. Tests with high reproducibility are important in studies involving interventions, as they provide confidence about their real effects[25].

Among the variables of the predictive model, CET is notable as it is an easily measured variable, which does not require specific equipment, keeping the cost of the test low. The CET reproducibility coefficient is similar to those observed in other studies with older adults, such as those that used the 6-minute walk test (r=0.88)[22] and the 2-km walk test (r=0.90)[21]. HRmean and SPE did not exhibit consistency in the measurements. A possible explanation for this is that the predictive relationship between SPE and HR in older adults has not been clearly defined. Even in the study by Oja et al.[21], SPE was not considered a predictor of VO_{2max} in the 2km walk test.

Limitations of the present study include the lack of sample calculation, the lack of a cross-validation step to verify the external validity of the OCT, the generalization of the model in terms of sex, and possibly the use of the cycle ergometer in the execution of the CPET. In the present study, we chose to form the sample only with the regular users from the UERJ hub, as this had the status of an Academy School at the time of data collection, the objective of which was precisely to develop studies to scientifically support the project. However, a sample calculation would have been important to guarantee the representativeness of the older adult population using RAL. Likewise, cross-validation could show whether the OCT has external validity[18], which is important considering that the project covers different regions of Rio de Janeiro. Furthermore, a gender-specific model could increase the explanatory power of VO_{2max} of older people attending RAL[18], considering the biological differences between men and women. Finally, the use of the treadmill in the performance of the CPET, while it also represents limitations in the case of older adults, could provide greater coefficients for explaining the variance of VO_{2max}[8].

CONCLUSION

The present study constructed a valid and reliable assessment tool for predicting the cardiorespiratory capacity of older adults attending RAL.

As a field test, the OCT has the advantage of being simple, easy to apply and specific to the RAL project. It may be a viable alternative when direct measurement of VO_{2max} is not possible. Thus, it is understood that the OCT can be used to obtain results capable of comparing and classifying the conditioning of the participants of the RAL project, which is essential for improving the effectiveness of the training provided. It is not enough that a practice is guided, but, especially, that such guidance should be based on the real physical conditions of each practitioner.

Another advantage that should be highlighted is that the OCT serves especially to motivate participants and monitor their physical condition from the moment when the reduction in the time needed to execute the circuit implies an improvement in their physical condition, which may impact on the behavioral change of the older adults, in order to optimize the performance of the exercises to increase their physical conditioning. In this sense, this study has great potential for practical application.

A suggestion for future studies is to include the level of habitual physical activity as a possible predictor of VO_{2max} in older adults in new models, as it is known that the nature and intensity of daily physical activities influence the cardiorespiratory fitness of individuals.

Finally, it is emphasized that the implementation of the RAL project already represents, in itself, a major advance in terms of public health for the older population of the city of Rio de Janeiro, and the undertaking of studies that seek to contribute in some way to improving the project is important to give it a scientific basis, making the practice of physical exercises in these spaces more effective and safer for older adults.

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The Rio Health Gym Program: Daily life, leisure and health of older adults

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Abstract

Objective: to identify the activities performed by older adults as part of the Rio Health Gym Program in their daily lives, and analyze the contributions of these practices to their health and quality of life. *Method*: a qualitative, exploratory and descriptive study was conducted using interviews with 30 older adults who attended a health center in the city of Rio de Janeiro (RJ). Lexicographic analysis was performed using the Alceste software program. *Results*: five lexical classes were generated. Physical and leisure activities comprised classes 2 and 3. The statements that made up the lexical classes showed that older adults carried out their daily activities with autonomy and independence. According to their assessment, the activities promote the integration of participants, increase social participation and benefit health and quality of life. They attribute their proactivity to participation in the social group. *Conclusion*: the activities bring diversity to daily living, increase socialization and leisure opportunities, and consequently improve the health of older people by facilitating social relationships.

Keywords: Health of the Elderly. Quality of Life. Leisure Activities. Motor Activity. Public Policy.

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INTRODUCTION

The Active Aging Policy (AAP) promotes opportunities for health, participation and safety, with the aim of improving the quality of life (QOL) of people in the process of aging. The AAP stimulates the perception of physical, social and mental well-being during the course of life, participation in society according to people's needs, desires and capacities, and provides protection, safety and adequate care, when necessary. Advanced age does not imply dependency, and therefore, the concept of active aging must be integrated into public health policies[1].

Economic, political and social crises affect social policies and public institutions with consequences for several sectors, especially social security and health. However, in order for the AAP to achieve the objective of promoting healthy aging, health services need to provide qualified care to the population, through prevention and health promotion. Thus, it is essential that over the course of life, the individual accumulates social, intellectual, financial and health capital, with this being the responsibility of both the individual and the state[2].

Lifelong, wide-ranging strategies can provide a solid basis for countries to respond to the challenges of population aging[3]. The actions of the state have an important role in population health, ensuring that people have opportunities to live in dignity and access to goods and services that allow them to make healthy choices. In this sense, in addition to the social determinants of health, public policies must consider social determinations, which affect the QoL of the population.

Research carried out in a city in the northeast of the USA with people aged 19-63 years showed that those who took part in leisure activities were more good-humored and had more interests, less stress and lower heart rates than those who did not practice leisure activities, demonstrating the effectiveness of leisure in improving health and well-being[4].

A study carried out in Japan identified an inverse response between the amount of physical activity performed in one's leisure time and the risk of disability with dementia in men, concluding that a higher level of physical activity should be recommended for younger older adults to prevent disability with dementia[5]. Another study showed an association between higher levels of leisure-time physical activity and a more positive assessment of memory in middle-aged and older adults[6]. In view of this, physical and leisure activities have been recommended for promoting the health of older adults.

In 2011, the *Academia da Saúde* or Health Gym Program (HGP) was created, one of the strategies articulated with the National Health Promotion Policy (or PNPS), with one of its axes addressing bodily practices and physical activities. This program effectively operates in conjunction with primary health care[7], which is why its importance in the field of the health of older adults should be highlighted, in line with the objective of promoting active aging.

The HGP operates in public spaces created for leisure and physical activities, among other actions such as health education, the production of care and healthy ways of living[8]. Encouraging people's participation in these programs is paramount, as they are committed to health promotion and encourage the acquisition of new habits of healthy living[9].

Linked to the HGP, in the city of Rio de Janeiro, there is the *Academia Carioca da Saúde* (the Rio Health Gym) Program (RHGP), linked to the Municipal Health Centers and Family Clinics, offering activities to users of the Brazilian National Health Service (or SUS). The RHGP has a strategic role in the comprehensiveness of health practices and in the expansion of opportunities for users to participate in community-based activities, which serve as an incentive to practice physical activities. There is an increasing number of older participants in the RHGP[10], which indicates that this is an important field of care, but also of research in the area of health and care for older adults.

The motivational factors for older adults to attend public leisure spaces are related to the search for healthy habits and social interaction[11]. Research carried out with older people in southern Brazil concluded that social support from family and friends are predictors for the participation of older adults in physical activities, and recommends encouraging family members and friends to provide social support

to older adults to participate in physical activities with a focus on the joint practice of the activity[11].

Therefore, studies that show the effects of inserting older adults in groups and joint practices of activities as a strategy for healthy aging are highly relevant.

The objectives of this investigation are to identify the activities performed by older members of the Rio Health Gym Program in their daily lives and to analyze the contributions of such practices to health and QoL.

METHOD

A qualitative, exploratory, descriptive study was carried out from December 2015 to June 2016. Older adults from a Rio Health Gym (RHG) of a Family Health Strategy Clinic (FHSF) in the city of Rio de Janeiro (RJ) participated. The main focus of this program is to promote health and prevent diseases, through the adoption of a healthy lifestyle. It covers the community linked to the FHS, with activities from different sectors of society and the participation of health and physical education professionals. The RHG Program at this FHS Clinic was established in 2011 and provides various activities such as: physical exercises with and without equipment, lectures, craft groups, walking, ballroom dancing, home visits, cultural tours and socializing for member's birthdays.

There were 819 people enrolled in this RHG, 445 of whom participated in one or more activity and of those, 374 were 60 years of age or older. Those aged 60 years or older, who maintained verbal communication skills and cognition, and who had frequented the activities of the RHG for at least 30 days, took part in the study. Older adults with irregular attendance at activities and those who were absent on the days of the study were excluded. Cognitive state was not assessed by the researcher, but was taken from medical records. The sample was selected by convenience, and the sample size was decided upon through the preliminary analysis of the content of 30 interviews, which showed saturation of data[12] through a panoramic mapping of the contents that allowed the evaluation of the outline of the empirical framework of the research, according to the proposed objectives.

The researcher entered the field to establish links with the participants, publicize the research, invite them to participate verbally and also through the delivery of a letter of invitation, in addition to consulting the records of older adults registered at the gym. For those who accepted, a date was arranged for the application of a questionnaire with closed-ended questions to characterize the participants (sex, age, marital/conjugal status, education, retirement, residence and length of time of taking part in the activities), and a semi-structured interview script about: daily habits, health care, leisure, establishing relationships between their actions and QoL, activities performed in the RHG, perceptions and assessments. This script was previously tested with three older people from the RHG to verify the clarity of the questions and functionality for achieving the research objectives. The test interviews were discarded and the interviewees were not included in the research sample. After the test, there was no need to change the instrument. The interviews were recorded using an app installed on the cell phone of the researcher, who personally conducted the interviews, at the RHG, with privacy and an average duration of 60 minutes.

The identification data were calculated in percentages and the interviews were transcribed and submitted to the Alceste 2012 software for lexicographic analysis. This software divides the text into elementary context units (ECU) and organizes lexical classes composed of the reduction of the main words used in the discourses to their roots, distributed in frequencies and associations, according to the similarities and/or oppositions of these lexicons, arranged in hierarchical classifications.

After processing the corpus of data formed by the interviews, Alceste divided the text into 1,391 ECUs, made up of 4,447 different words or distinct vocabulary units. The words were reduced to their roots giving rise to 859 analyzable words (nouns, adjectives, verbs) and 266 supplementary forms (articles, pronouns). Five lexical classes were generated. Class 1 deals with the older adults' knowledge of quality of life; Classes 2 and 3 deal with physical and leisure activities provided by the RHG; and Classes 4 and 5 deal with the physiological aspects of health and therapy applied in primary health care. In order to meet the objectives of this article, classes 2

and 3 and their ascending hierarchical classifications (AHC) were selected, the analysis of which shows the dynamics of class formation by the relations of proximity between lexicons. The ECUs were selected to understand the object in the light of the context and the linguistic traits of the participants.

The study was approved by the Research Ethics Committee in compliance with Resolution No. 466/2012, under opinion number 1.201.027. The participants signed an Informed Consent Form and their identity was preserved by codes: male (M), female (F), a sequential number and age (a).

RESULTS

A total of 25 women (83.3%) and five men (16.7%) participated in the study; the age range ranged from 60 to 82 years, with a predominance of those between 60 to 65 years (16, 53.3%). In terms of marital status, 16 (53.3%) were married, six (20%) were divorced, six (20%) were widowed, one (2%) was single and one participant did not define herself in any of these categories as she was in a stable relationship but was not married or in a civil union; 27 (90%) lived with family members and three (10%) alone; 18 (60%) were retired.

Lexical Class 2 is composed of 192 ECU, about 20% of those processed by the program. The words in this class express meanings attributed to leisure activities related to affective relationships (family, friends and co-workers).

According to the AHC (Figure 1), the words: I see, television, watching, visiting and friends, describe actions in the routine of older adults, to enhance friendships. These words are linked to: end, week, see and grandson, which represent an important family relationship.

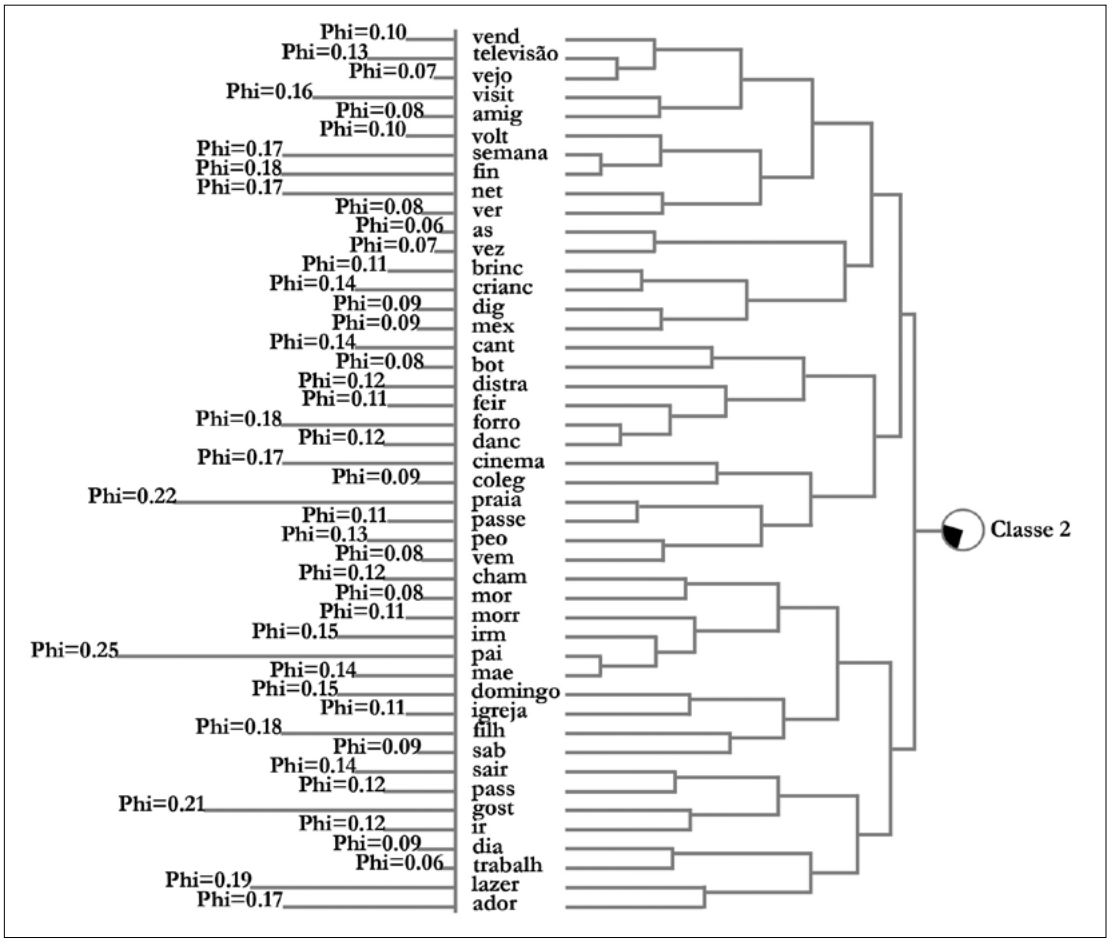

Figure 1. Ascending Hierarchical Classification, Class 2.

Source: Alceste report, 2016.

The family predominates in the discourses, through the nouns: father, husband, husband, wife, sister, son, daughter, grandson, granddaughter, nephews and nieces, mother. The family arose emerged from the speeches when the older adults were asked about their leisure and routine activities in relation to a satisfactory QoL.

> "My daughter lives there in front of the mall. It's hard to get to her house. She says: mom, let's go for a walk in the mall, come over" (F27, 74a).

The lexicons father and mother showed high proximity and frequency, and are linked to the word brother, while both are linked to the term *morr* (from the verb "*morrer*", meaning "to die") which represents the death of these people. These terms are linked to living and calling, representing the coexistence of older adults with their parents and siblings.

The ECUs produced by Class 2 suggest that leisure activities for older adults occur in family environments, in contact with and through living with grandchildren and nieces/nephews, in their daily lives and at parties and birthdays of relatives.

> "My routine is just rushing about. Only on weekends do I have free time, I go to the São Cristóvão market, I travel. Sometimes there are relatives' birthdays, everyone gets together and goes. There's food and drinking, dancing. My whole family loves to dance" (F11, 65a).

> "We barbecue and have a lot of fun. All the nieces and nephews. When I go to visit my grandson, I lie on the floor with him, I play" (F26, 63a).

Leisure is also characterized by walks, trips to the mall, the cinema, the beach, in the company of family members or by invitation and encouragement from the older adults' children and spouses. Religious practice emerges as a leisure activity, carried out with family members. The AHC shows the connection between the words church and Sunday, both linked to the lexicons son and Saturday, demonstrating the company of children.

> "Sometimes, when I have nothing to do, I improvise. I call my sister, I agree to meet in the city, just to get out of the house" (F7, 70a).

> "I like to go to church on Sundays, I go in the morning and at night, my son takes me" (F10, 65a).

The ECUs address friendships in the workplace, socialization and contact with friends. It is observed that the right to a free transport pass makes it possible to expand these leisure and other daily activities:

> "Where I worked I left a lot of friends behind and sometimes we meet. Some of them say: come over here. I like that, I go to their house, we drink a beer, chat, laugh, have fun. That's how I like it" (F1, 62a).

> "My wife and I go a lot, with our senior travel pass, we take the bus and we go out downtown, we went to the museum, to the beach, we really enjoyed it" (M12, 70a).

Violence and a lack of company emerged in the ECU as the main obstacles to leisure activities:

> "I don't have a lot of leisure activities, I don't go out a lot because, due to the violence, sometimes we don't have company to go with us" (F1, 62a).

The AHC highlights the proximity of the words: *forró* (a type of dance), dancing and the market, which are linked to distraction, representing leisure activities for the enjoyment of older adults. Such words are associated with: cinema, colleague, beach, walking, which are also activities that occupy their time.

In the AHC, the terms I like and go are linked to the lexicons walking and going out, which represent the satisfaction of older adults with their outings. The words: I love, leisure, day and work are connected, highlighting the pleasure, satisfaction and transformation in performing leisure activities and participation in the RHG.

> "I don't have much leisure. I try to do more things to distract myself and not spend an empty day. I like to go to relatives' birthdays, I go to the market, I have a beer, I watch people dancing" (F11, 65a).

> "I love going out on the street because I distract myself. I like going out. My leisure, I love to listen to *forró*, I love a beer. My health is fine" (F29, 70a).

> "I like my activities a lot. The days when I don't go, I get bored. I really like it, don't take it away from me [referring to the RHG], otherwise I get bored. I like to walk, when I can, I go. My leisure is sometimes to meet friends "(F30, 60a).

Lexical Class 2 is composed of 192 ECU, about 20% of those processed by the program. The words in this class characterize the routine activities, actions, tasks and responsibilities that older adults perform in their daily lives, as shown in Figure 2.

Class 3 highlights the RHG as part of the daily lives of older adults, whose routine is described by activities performed early in the day, using the lexicon *acord* (from the verb *acordar,* or wake up), which represents the beginning of the day.

The words: coffee, I drink, bath/shower, I wake up, I arrive and work represent the beginning of daily activities before and after activities at the gym. This class was composed of ECUs that predominated in the discourses of women, revealing their daily lives to involve domestic chores, represented by the word work.

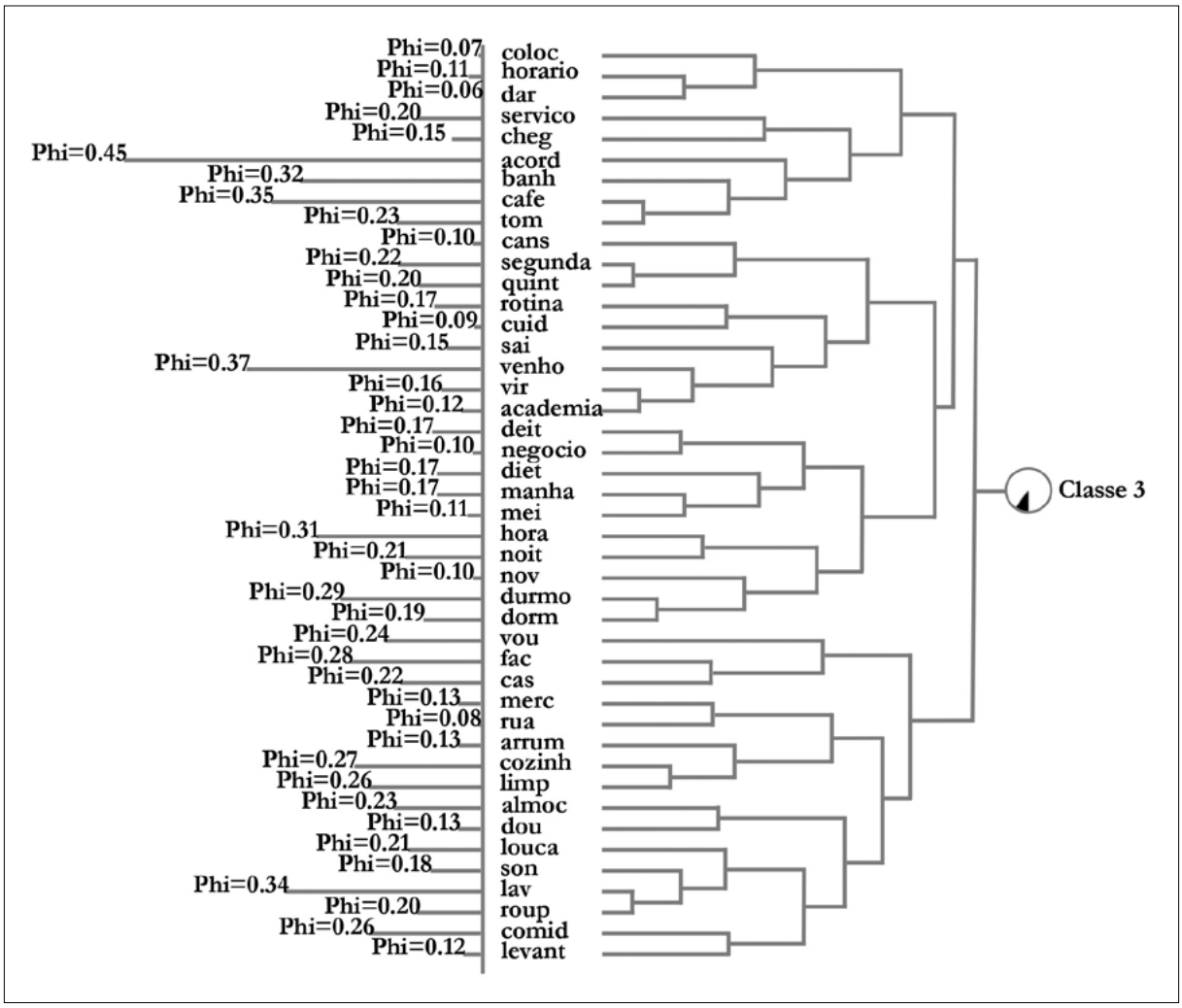

Figure 2. Ascending Hierarchical Classification, Class 3.

Source: Alceste report, 2016.

In the AHC, it was identified that the words come and gym are connected to I come, I go out, I take care of myself, routine, Monday, Thursday, which together with the word get tired, describe the routine of activities carried out in the RHG, for four consecutive days. There is a predominance of words about the daily practices of caring for oneself, the home and the family:

> "I wake up early, have coffee, feed my turtle. I come to the gym, I make lunch, I do handicrafts when there's something for me to do" (F17, 61a).

> "I like to come here. I come, get up, drink coffee, come here to the gym, do the activities. I go home, clean, make food. I cook, I get tired" (F13, 79a).

The AHC shows the relationships between the words sleep, wash, clothes, I get up, food, which reflect the need for daytime rest. The words: I sleep, sleep, new, night and time refer to the importance given to sleep and rest. And there is also evidence of the older adults as the caregiver of family members:

> "I sleep half an hour after lunch, get up, wash the dishes and do some cleaning somewhere, inside the house. I sit and watch television" (F1, 62a).

> "I get up at five in the morning, make coffee, come to the gym, come back home, make lunch, give food to the children and in the afternoon I usually lie down on the couch for a while" (F3, 62 years old).

> "My routine is a rotation, it's a rush. I come to the gym, leave and do aqua aerobics. I get home, take care of my mother until about three o'clock" (F30, 60a).

DISCUSSION

The activities of older adults involve family members, friends and the RHG environment, which can be beneficial for promoting their health and well-being. Such results indicate the transformations that have occurred in the daily life of retired older people, due to the time available for other activities, in addition to the usual tasks of taking care of their home and family, typical of women who make up the majority of participants in this research. For those who were part of the labor market, participation in different activities of their new daily life shows the transition from the social life of the worker to that of the retiree and its impacts on behavior. Participation and engagement in occupational activities allow older adults to have a purpose in life, maintaining their functionality and independence in activities of daily living[13].

A study that described the perception of the transition from worker to retiree identified that older adults exhibit, at this stage, issues related to the readjustment of life, whether personal or family, social and economic losses, and psycho-emotional and QoL gains. This transition process may be influenced by factors prior to retirement[14].

The quality of adaptation to retirement can vary according to personal health, emotional, family, social and economic factors. A review study conducted in Brazil concluded that retirement need not be a risk factor for health in all stages of life, nor need it represent a risk factor for depression in older adults[15]. In Sweden, research with a representative sample of the general population, but with a higher level of education, showed in the cross-sectional findings of the first stage of the survey that retired people exhibited better psychological health than those who still worked, and the longitudinal studies of the first and second stages showed that those who retired between the stages of the survey exhibited more positive changes in psychological health than those who still worked or were retired[16].

Retirement has positive aspects, related to freedom and more time available for relationships and social and leisure activities[17]. The use of time is evident when older adults emphasize the importance of family members in this new routine. The lexicons refer to such members and the activities they demand.

The ECUs indicate that interactions with nieces and nephews, grandchildren and children and the maintenance of bonds with siblings provide older adults with a sense of belonging to the family. Contact with the family allows older adults to socialize and feel valued, in addition to providing relaxation and joy which are good for their health. These family relationships influence well-being.

People who receive family support develop greater self-esteem that impacts on optimism, affection and mental health[18]. Considering these benefits, good relationships are important, especially when people get older, therefore, strengthening family relationships and interpersonal bonds are confirmed as important for the QoL of older people.

On the other hand, changes in family structure, such as divorce, widowhood, the marriages of children or births of grandchildren, make many older people experience loneliness, as seen in cases where company is absent. Good health and financial independence enable older adults to shoulder their responsibilities and manage their lives. Many are providers for their family nuclei and are satisfied, with a feeling of reciprocity through receiving attention and help from family members in exchange for financial assistance, as compensation for their dedication[17].

A study carried out in Austria on the importance of intergenerational contact for the health and QoL of older adults states that the proximity and frequency of the coexistence of older adults with grandchildren, children and relatives are important sources for QoL in old age[19]. The leisure activities mentioned by the participants of this study are walking, going to the mall and cinema, and going to church, and they are mostly carried out in the company of family and/or friends, and contribute to emotional balance and socialization. Research in southern Brazil concluded that greater participation in different leisure activities is associated with a good perception of QoL among the older adults investigated[20], which reinforces the incentive for this group to increase such activities.

The engagement in socialization and leisure activities involving family and friends is influenced by the actions to promote interaction that are carried out in the RHG group environment, such as trips to theaters, museums, cinemas, parks and beaches. These activities positively affect people, promoting improvements in their physical and psychological well-being. The coexistence in the group creates bonds and when inserted in the daily life, the activities of the RHG transform habits, promoting an active and positive attitude towards life.

The activities carried out in the group environment are part of the daily life of older adults, are motivational and allow them to perceive themselves as useful and feel pleasure in what they do. This positive influence avoids the social isolationism of older adults, which is strongly associated with physical and mental health and presents itself as a major concern for the health of such individuals and also for social policies[21,22].

Coexistence in groups is important for the contact and establishment of bonds between humans, social belonging, favoring QoL. This impact is seen in the evaluation of the relationship between types and quantity of social activity and QoL, according to sex and age group, with a positive association between an increase in the number of social activities and an increase in QoL[23].

The present study revealed a greater number of women involved in the activities of the RHG, explained by the fact that older men tend to practice a greater number of physical activity modalities than women, but older women tend to be more adept at physical activities such as gymnastics and water aerobics in public or outdoor environments[24], as is the case of the location of this study. This shows the need to rethink the architecture of public environments, leisure areas, museums and squares and to redesign them in order to facilitate the insertion of older adults in such places and allow their use for coexistence, leisure and physical activities. Investing in security and other means of making access for older adults feasible, such as transportation, repaving and other works that prepare these places for the practice of physical activities in order to meet the needs of all.

The predominance of actions that represent the domestic daily life shows that women have an active daily life, divided between the practice of physical activities and the domestic chores that, for the most part, do not constitute limitations for carrying out their activities of daily living, even though they report tiredness after the tasks. Keeping oneself able to perform duties at home can be considered as one of the benefits of undertaking physical activities in RHG.

The aging process directly interferes with basic activities of daily living, and the practice of physical activities contributes to the autonomy and functional independence of older adults[25]. Independence and autonomy are achievements to be persevered with and, in this sense, the physical activities performed in the RHG, with or without equipment, generically described by older adults in the ECU by terms such as activity and gymnastics, seek to develop the ability to balance and qualities of flexibility, endurance, agility and strength, which are important skills for maintaining activities of daily living[26].

Busy routines with many tasks and the undertaking of various responsibilities make older adults feel socially valued. Taking care of the family increases their self-perception of usefulness and affects their well-being and the way they deal with old age[17]. On the other hand, it also shows that the task of caring remains strongly linked to the female figure, reaffirming the gender issues involved in the direct care of the home and of people, which can affect women in terms of their social life and physical and mental health.[27]. This may explain, in part, the significant presence in the results of sleep and daytime naps.

The citizenship of the older adults was expressed in the use of the free travel pass to get around the city and for leisure activities. The use of gratuities and discounts on leisure activities indicates awareness of one's rights, an aspect that is also the subject of discussion during activities at RHG.

The Statute for Older Adults guarantees the participation of such individuals in cultural and leisure activities through discounts on tickets and free public transportation for those over 65 years of age, extended, subject to the discretion of local authorities, to older adults from 60 to 65 years[28].

Mobility and leisure opportunities are impacted by the fear of violence that affects the feeling of security in everyday life and prevents older adults from carrying out leisure activities as they would like. These data can be justified by the fact that the research was carried out in a large urban center, especially in the context of the city of Rio de Janeiro.

Conditions and lifestyle are important factors in the social determination of health and in the promotion of care[29]. In view of this, the discourses that reflect daily actions denote affect and attitudes and reveal feelings, and the way which one lives generates evaluations, therefore, liking what one does helps to maintain motivation and proactivity, contributing to adherence to the promotion of activities of health.

The recurrent use of the verbs like and adore by older adults characterize the affect mobilized to maintain a life full of activities, including participation in the gym. Hence the importance of professional evaluation and counseling, which help older adults to express their opinions and participate in decisions about care, together with professionals, who can assist them in meeting their needs and desires.

The present study was carried out in a space conducive to the establishment of relationships between health and physical activity, a context that affects the discursive production of its cohabitants. Regarding this incidence, it is observed that the formation of a group social identity can be a powerful determinant of behavior related to physical activity[30].

Brazil is not yet prepared to deal with its aging population, and needs to adapt its health system and provide public policies aimed at comprehensive care and QoL[31]. However, it was observed that the Health Gym is part of the National Health Promotion Policy, is aligned with the National Policy for Active Aging, and reflects initiatives to meet the health needs and maintain the functionality of older adults. A review study showed that participation in the activities of the RHG generated positive results in people with chronic diseases and comorbidities[10], indicating that the program is an ally of health promotion and treatment, in addition to the various initiatives encouraged by gerontology, which excels in the comprehensive approach to health and integrality of the human being.

In this mission, institutions, clinics, hospitals and health professionals themselves must be more committed to putting into practice values that are incorporated by older adults to promote healthy habits and maintain health conditions. The performance of this study in only one field in a large urban center limits its results. It is recommended that it is expanded to other spaces and groups of older people to deepen the debates and introduce analyzes by gender, age group and varieties of living conditions and daily living. Nevertheless, the contributions reveal the RHG to be a space for promoting health and care, individual and collective, in compliance with the provisions of the active aging policy[8], therefore, due to the wide range of activities it provides, the program is a fruitful field for interdisciplinary action. In addition, studies have shown that participation in physical activity and leisure programs promoted by the Brazilian government are important factors in the promotion and maintenance of health conditions suitable for QoL in old age[32].

CONCLUSION

Daily physical activities, social participation, socializing and interaction with friends in social groups, religious practices, carrying out daily activities with independence and autonomy, support and family contact, the importance of sleep and rest, as well as leisure activities in the company of friends and family, are the main activities performed by and which integrate the daily life of older adults, contributing to their health and QoL.

The RHG represents a public policy that promotes people's health and quality of life through various activities, thereby encouraging active aging, diversifying daily activities, increasing socialization and leisure opportunities for older adults, through which it allows the expansion of social relations, constituting an important public policy for promoting the health of older adults.

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Action plan for tackling violence against older adults in Brazil: analysis of indicators by states

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Abstract

Objective: to analyze the indicators of the action plan for tackling violence against older adults in Brazil, through temporal and spatial trends. *Method:* all nine indicators that form the plan were taken from the *Sistema de Indicadores de Saúde e Acompanhamento de Políticas do Idoso* (the Indicators of Health and Monitoring of Policies for Older Adults System). Time trend analysis was applied by Joinpoint Regression (CI95%), spatial distribution by states and clusters by Ward's hierarchical agglomerative method, using quadratic Euclidean distance. *Results*: the study indicated a significant trend of an increase in notifications of cases of violence against older adults, of the hospitalization of older adults because of abuse, of the hospitalization of older adults because of femur fractures, of the mortality rate of older adults because of falls and of the hospitalization of older adults because of falls. Five clusters were formed, with two cluster formations standing out: that of the states of Rondonia, Roraima and Tocantins, because of their high levels of hospitalization and mortality by traffic accidents and high levels of mortality by abuse; and that of the states of Espírito Santo, Goias, Mato Grosso do Sul, Parana, Rio Grande do Sul, Sao Paulo and Sergipe, because of their high levels of hospitalization and mortality by falling and fractures, as well as their high level of violence against older adults. *Conclusion:* records of violence against older adults are increasing in Brazil, with specific types of violence concentrated in specific regions of the country.

Keywords: Older People. Health of the Elderly. Violence. Health Evaluation. Situational Diagnosis.

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INTRODUCTION

Violence is considered a phenomenon of complex causality, involving authority, power and domination. Among older adults, it assumes three main general forms: violence directed at older adults, violence directed at the self and collective violence[1,2].

Factors such as low levels of education, degree of financial dependence, fragility of the social support network, access to compromising information and fear of breaking family ties are associated with the phenomenon of violence in this group, along with morbidities, which lead to a decrease in functional and cognitive capacity and the valuation of older adults, who are often relegated to the margins of society[3,4].

Evidence suggests that abuse and the mistreatment of older adults is a global health problem, and related to the diversity of regions, cultures and socio-political situations, ranges from 2.2% to 44.6%[3]. The combined prevalence rate of general abuse is 15.7%, with 11.6% for psychological abuse, 6.8% for financial abuse, 4.2% for neglect, 2.6% for physical abuse and 0.9 % for sexual abuse[4].

In Brazil, women are the main victims of abuse in the older adult population (64%), with physical (28%) and psychological (28%) violence being the most frequent forms, in which there is, in a large number of cases, a relationship of proximity between the victim and the aggressors. This is especially true for children of the victim (28%), with the victim's own home being the main location of the abuse (60%), and a tendency for cases to increase over the years[5].

The epidemiological profile, however, may vary between regions, due to the inequalities related to the process of demographic transition in Brazil, which is, in turn, marked by significant differences between regions. The north and northeast regions exhibit a slow evolution in this transition process, while the south, in contrast, presents accelerated growth, corroborating the historical inequalities experienced in Brazil[6,7].

Therefore, the State has an important role in combating the impact of the structural inequalities that result in the violence suffered by the older population[8], meaning it is important to carry out sets of actions to maintain a state of social well-being, which translate the objectives of governments into the realization of the rights of the population[8].

Brazil has also undergone a transformation in the concepts of care for the older population, moving from a state of segregation to the recognition of their rights by the Federal Constitution. As a legal framework for health policies for older adults in Brazil, the creation of the Statute for Older Adults and the National Health Policy for Older Adults (or PNSPI) stand out, being responsible for legitimizing rights and guiding the prevention, recovery and preservation of the health of this population[9].

Other strategies have been incorporated by the State, such as the Action Plan to Combat Violence Against Older Adults, which has the objective of combating social exclusion and all forms of violence against this group, establishing indicators for monitoring the proposed guidelines and highlighting the need to evaluate the plan[10], a phase inherent to the Public Policy Cycle. In the field of health, evaluation is essential for planning and preparing interventions, as well as reorienting ongoing and future actions[11].

The indicators are grouped according to the objectives of the plan. To incentivize the adaptation of domestic spaces for older adults, hospitalizations of older adults due to falls and fractures of the femur, the proportion of older adults with difficulty walking at home alone and the mortality of older adults due to falls are evaluated. In order to verify the need for State protection for families, with a view to preventing intrafamily violence, hospitalizations and mortality of older adults due to mistreatment and reports of violence are evaluated. Finally, the evaluation of hospitalizations and mortality of older adults due to traffic accidents aim to promote necessary adaptations to the public space[12].

Evaluating indicators of violence, therefore, contributes to the understanding of this phenomenon throughout Brazil, taking into account historical regional inequalities and the impact of the demographic transition in the country, allowing the State to provide adequate care in the aging process. Thus, the present study aims to analyze

the indicators that make up the Action Plan to Combat Violence Against Older Adults in Brazil, in an attempt to understand this phenomenon from temporal and spatial trends.

METHOD

The database used was compiled from data available in the Health Indicators and Policy Monitoring System for Older Adults (or SISAP-Idoso)[13], a joint initiative of the Health Coordination of Older Adults (or COSAPI) of the Ministry of Health and the Health Information Laboratory of the Institute of Communication and Scientific and Technological Information (or ICICT) of the Fundação Oswaldo Cruz (the Oswaldo Cruz Foundation, or Fiocruz), during the month of February 2020.

The construction of the model variables consisted of calculating the average of the values recorded over three years, when available, in order to reduce the influence of annual random variability. The plan consists of four action proposals, namely: collective cultural space; public place; family space; institutional space. Each proposal contains actions aimed at each item, and from these proposals, for the evaluation of health indicators, there are the family space and public space items. SISAP-Idoso is therefore regrouped in three pillars for the evaluation of health indicators, to identify:

- **Improvements to Family Space** (encourage older adults and their families to make spaces of residence more suitable in order to guarantee a "healthy home" with better accessibility and less risk of accidents and falls) - Rate of hospitalizations for older adults due to falls in at least one of the causes (2016-2018 average); Rate of hospitalizations of older adults due to femur fractures (2016-2018 average); Proportion of older adults with difficulty walking at home alone (2013); Mortality rate of older adults due to a fall in at least one of the causes (2016-2018 average);

- **Improvements to the Family Space** (Training of family caregivers, and State protection for families who are unable to care for their older relatives as mechanisms for preventing intrafamily violence) - Rate of hospitalizations for older adults due to mistreatment in at least one of the causes (2016-2018 average); Mortality rate of older adults due to mistreatment in at least one of the causes (2016-2018 average); Rate of notifications of violence against older adults (2015-2017 average);

- **Improvements to the Public Space** (as traffic accidents and violence are the biggest specific external cause of death in this age group, it is necessary to better prepare equipment and signs on streets and crossings in cities) - Rate of hospitalizations for older adults due to traffic accidents (2016-2018 average); Mortality rate of older adults due to traffic accidents (2016-2018 average).

Initially, a descriptive analysis was carried out to summarize the data set. This summary was presented through colour-themed maps by quintiles, revealing the situation of each variable by Brazilian state (or Federal District). For the production of the thematic maps, the cartographic base was obtained from the website of the Brazilian Institute of Geography and Statistics (https://ibge.gov.br/) and the Terraview 4.2.2 software package (INPE, 2011, Tecgraf PUC-Rio / FUNCAT, Brazil) was used.

For the analysis of time trends, the annual percentage change (APC) was estimated for each indicator for Brazil, with a 95% confidence interval (95% CI), for each available period. The final model selected was the most adjusted model, with the APC based on the trend of each segment, estimating whether these values are statistically significant ($p<0.05$). The significance tests used are based on the Monte Carlo permutation method and on the calculation of the annual percentage variation of the ratio, using the logarithm of the ratio[14]. Statistical analyzes were performed using the Joinpoint Regression Programs, version 4.5.0.0. The exceptions to these analyzes, due to the lack of cases in the historical series, were for the variable "Proportion of older adults with difficulty walking at home alone" for which data were only available for the year 2013, and "Mortality rate of older adults due to mistreatment", for which data were only available for the period 2015-2017.

A cluster analysis was conducted to determine the level of proximity between the states (or Federal District) in relation to the analyzed indicators. Cluster analysis is a multivariate analysis technique that allows the gathering of objects and/or variables according to their common characteristics. The objective of this technique is to reduce the number of objects, which are inserted in an observation matrix, grouping them in clusters, or in other words, groups of objects according to their similarities, through previously determined similarity criteria[15]. For this case, a cluster analysis with a 27x9-sized matrix was used, where the objects were grouped (27 states (including the Federal District)). The matrix contained the nine indicators of the Action Plan for tackling violence against older adults provided for in SISAP-IDOSO, in order to support the grouping by states.

Based on the standardization of the variables in Z score, Ward's agglomerative hierarchical method was used. The basic procedure of this method is to compute a distance or similarity matrix between the states (or Federal District), from which a process of successive mergers begins, based on the proximity or similarity between the units. As a measure of similarity between the observations, the square of the Euclidean distance was used and the results are presented in the dendrogram, a tree diagram that shows the groups formed by grouping observations in each step and based on their similarity levels[16].

To analyze the composition of the clusters and characterize the profiles of violence, the values of each variable were divided into quintiles, and were classified into: 1st quintile (very low), 2nd quintile (low), 3rd quintile (medium), 4th quintile (high), 5th quintile (very high). The difference between the groups was verified using the Kruskal-Wallis test, considering $p<0.05$. For cluster analysis and the Kruskal-Wallis test, the Statistical Package for the Social Sciences software package version 25.0 (SPSS-25) was used.

This research used secondary data extracted from official sites open to public consultation. Thus, there was no need for appreciation by the Ethics and Research Committee as recommended by Resolution 510/2018 of the National Health Council (or CNS).

RESULTS

The temporal trend analysis showed that there is a significant trend towards an increase in the number of reports of violence against older adults, hospitalizations of older adults due to mistreatment, hospitalizations of older adults due to fractures of the femur, mortality of older adults due to falls and hospitalizations of older adults due to falls. In relation to traffic accidents, from 2007 there was an increase in hospitalization rates and from 2012 there was a significant reduction in mortality rates due to this cause (Table 1).

Table 1. Temporal trends in the Action Plan indicators for tackling violence against older adults in Brazil: APC, Confidence Interval and JoinPoint Year.

Indicator	Data available	APC	CI95%	Year Joinpoint	APC	CI95%
Hospitalizations of older adults due to falls	2000-2018	1.12*	0.6-1.6	-	-	-
Hospitalizations of older adults due to femur fractures	2000-2018	0.70*	0.3-1.1	2015	4.2	-0.8; 9.3
Mortality of older adults due to falls	2000-2017	6.62*	5.8-7.4	-	-	-
Hospitalizations of older adults due to mistreatment	2000-2017	15.31*	10.1-20.8	2008	1.77	-2.1; 5.8
Notifications of violence against older adults	2009-2017	61.4*	50.5-70.3	2012	10.2*	6.8-13.6
Hospitalizations of older adults due to traffic accidents	2000-2018	-5.58*	-9.5; -1.5	2007	2.95*	0.8-5.1
Mortality of older adults due to traffic accidents	2000-2017	1.53*	0.9-2.2	2012	-6.95*	-9.3; -4.6

Source: SISAP-Idoso, 2020. *Statistical significance $p<0.05$; APC: annual percentage change; CI 95%, 95% confidence interval.

Figure 1 shows the spatial distribution of variables by Brazilian states. It can be seen that there are higher accident mortality rates in the midwest region and higher rates of hospitalizations due to falls and reports of violence in the south and southeast. In general, there is no formation of patterns among the variables, and each variable presents particularities in its distribution (Figure 1).

The analysis of the dendrogram shows the formation of five clusters for the characteristics of violence against older adults (Figure 2). The states that made up cluster 1 had low rates of violence, hospitalization and mortality; Cluster 2 had high hospitalization and mortality rates due to traffic accidents and high mortality rates due to mistreatment, and was formed by the states of Rondônia, Roraima and Tocantins; in Cluster 3, formed by the states of Alagoas, Mato Grosso, Minas Gerais, Paraíba, Pernambuco, Piauí and Rio Grande do Norte, the main characteristic was the high proportions of older adults with mobility difficulties and hospitalizations due to falls; Cluster 4 grouped states with high rates of hospitalization and mortality from falls and fractures and a high rate of violence against older adults; finally, cluster 5 was formed exclusively by the state of Santa Catarina, and had high rates of hospitalization for falls, fractures and mistreatment and high rates of violence (Table 2).

Figure 3 shows the comparison of the values of each analyzed variable between the clusters formed. There was a significant difference between the clusters for the variables proportion of older adults with difficulty walking at home alone, hospitalization rate of older adults due to traffic accidents, hospitalization rate of older adults due to femur fractures, hospitalization rate of older adults due to mistreatment and hospitalization rate of older adults due to falls, showing that these variables best discriminated against clusters (Figure 3).

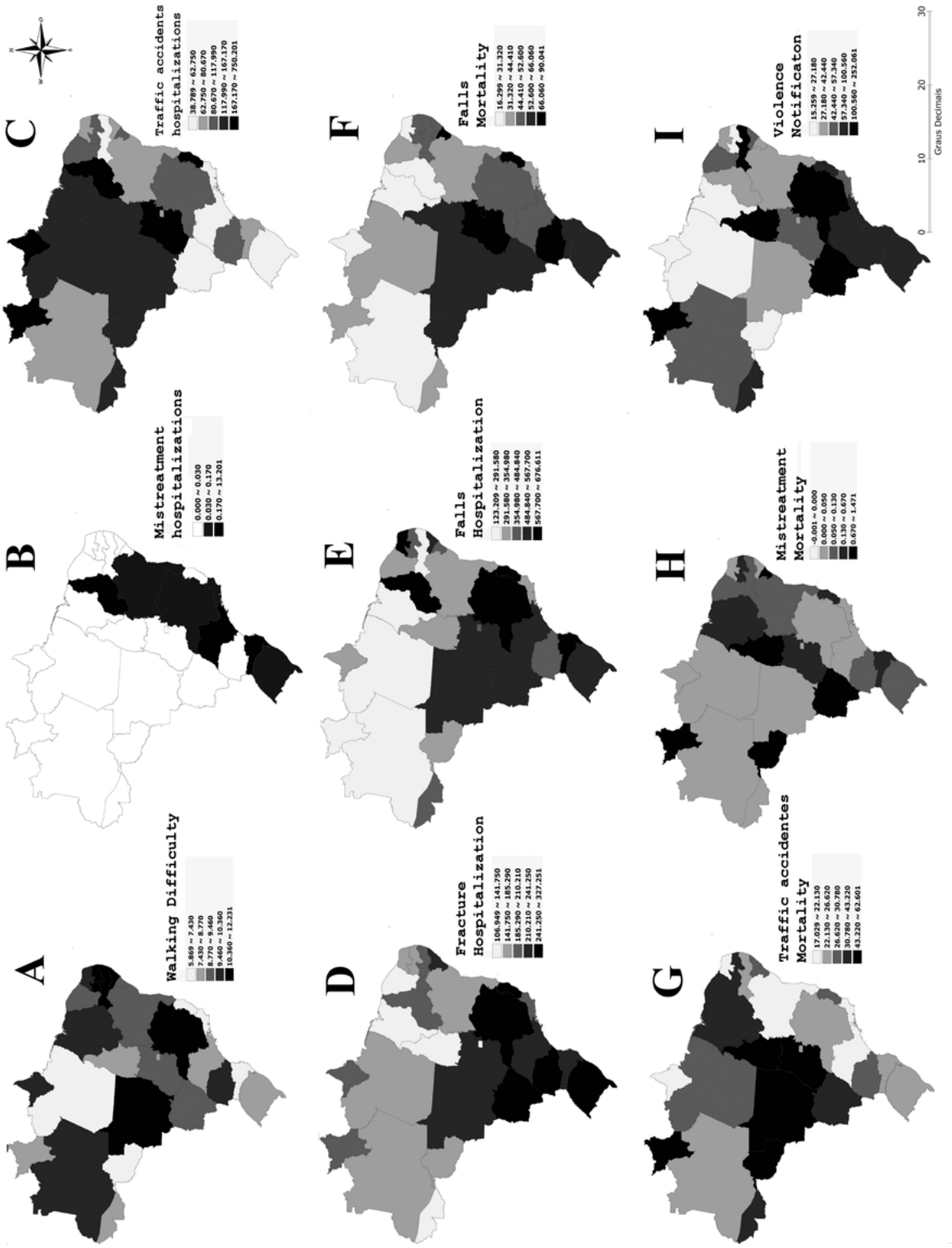

Figure 1. Spatial distribution by state (including the Federal District) of the indicators that make up the Action Plan for tackling violence against older adults in Brazil.

Figure A: Proportion of older adults with difficulty walking at home alone; Figure B: Rate of hospitalizations for older adults due to mistreatment; C: Rate of hospitalizations of older adults due to traffic accidents; D: Rate of hospitalizations of older adults for fractures of the femur; E: Rate of hospitalizations of older adults due to falls; F: Mortality rate of older adults due to falls; G: Mortality rate of older adults due to traffic accidents; H: Mortality rate of older adults due to mistreatment; I: Rate of notifications of violence against older adults.

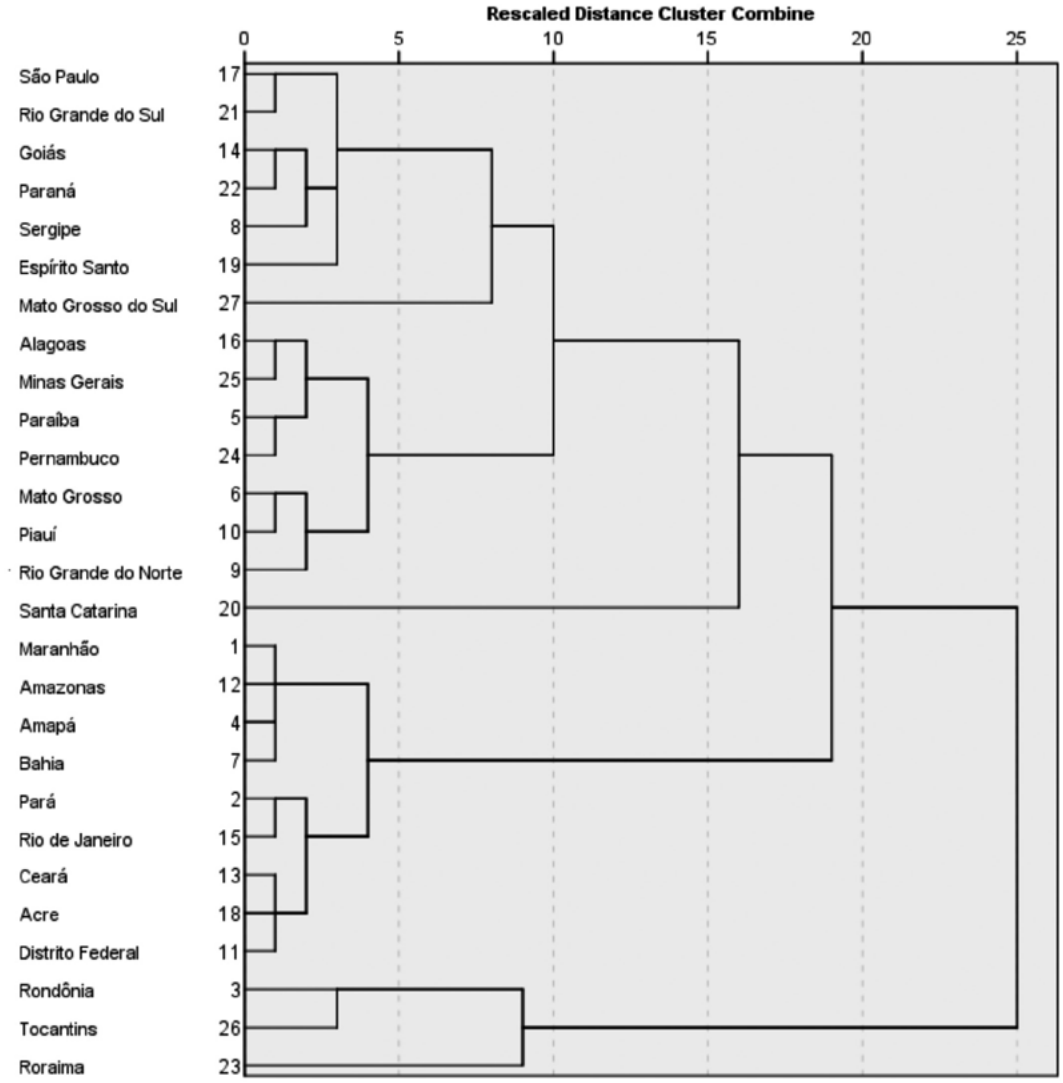

Figure 2. Dendrogram representing the Cluster analysis based on the variables that make up the Action Plan for tackling violence against older adults in Brazilian states (including the Federal District).

Table 2. Analysis of the cluster profile of states (including the Federal District) based on the indicators of the Action Plan for tackling violence against older adults in Brazil.

State	Cluster	Proportion of older adults with difficulty walking at home alone	Hospitalization rate of older adults due to traffic accidents	Mortality rate of older adults due to traffic accidents	Hospitalization rate of older adults for fractures of the femur	Hospitalization rate of older adults due to mistreatment	Mortality rate of older adults due to mistreatment	Rate of hospitalizations of older adults due to falls	Mortality rate of older adults due to falls	Rate of notifications of violence against older adults.	Type de profile
Acre	1	Low	High	High	Very Low	Very Low	Low	High	Low	High	
Amapá	1	High	Very High	Very Low	Average	Very Low	Very Low	Low	Very Low	Very Low	
Amazonas	1	High	Low	Low	Low	Very Low	Very Low	Very Low	Very Low	Average	
Bahia	1	High	Low	Very Low	Low	Average	Average	Average	Low	Low	Profile of low rates of violence, hospitalization and mortality
Ceará	1	Average	High	High	Very Low	Very Low	Average	Low	Low	Average	
Distrito Federal	1	Low	Low	Average	Very Low	Very Low	Very Low	Average	Very High	Average	
Maranhão	1	High	High	High	Very Low	Very Low	High	Very Low	Very Low	Very Low	
Pará	1	Very Low	High	Average	Low	Very Low	Low	Very Low	Low	Very Low	
Rio de Janeiro	1	Very Low	Very Low	Very Low	Average	Average	Low	Low	Low	Average	
Rondônia	2	Very Low	High	Very High	Low	Very Low	Very High	Low	High	Very Low	Profile of traffic accidents and mortality due to mistreatment
Roraima	2	Low	Very High	Very High	Average	Very Low	Very High	Very Low	Average	Very High	
Tocantins	2	Low	High	Very High	Very Low	Very Low	Very High	Low	Very High	Very High	
Alagoas	3	Very High	Average	Average	High	Very Low	Very Low	High	Average	High	
Mato Grosso	3	Very High	Very High	Very High	High	Very Low	Low	High	High	Low	
Minas Gerais	3	Very High	Average	Low	Very High	Average	Average	Very High	Average	Very High	Profile of mobility difficulties and hospitalization due to falls
Paraíba	3	Very High	Average	High	Average	Very Low	High	Average	Average	Very Low	
Pernambuco	3	Very High	Very Low	Low	High	Very Low	High	Very Low	Average	Very High	
Piauí	3	High	Very High	Very High	Average	Average	High	Very High	Very Low	Low	
Rio Grande do Norte	3	Very High	Low	Very Low	Low	Very Low	Very Low	Very High	Very Low	Low	

to be continued

Continuation of Table 2

State	Cluster	Proportion of older adults with difficulty walking at home alone	Hospitalization rate of older adults due to traffic accidents	Mortality rate of older adults due to traffic accidents	Hospitalization rate of older adults for fractures of the femur	Hospitalization rate of older adults due to mistreatment	Mortality rate of older adults due to mistreatment	Rate of hospitalizations of older adults due to falls	Mortality rate of older adults due to falls	Rate of notifications of violence against older adults.	Type de profile
Espírito Santo	4	Very Low	Very High	Average	Very High	Very Low	High	Very High	Very High	High	Profile of falls, fractures and violence
Goiás	4	Average	Very High	Very High	High	Very Low	Very High	High	Very High	Average	
Mato Grosso do Sul	4	Average	Very Low	High	Very High	Very Low	Very High	High	High	Very High	
Paraná	4	High	Average	High	Very High	Very Low	Average	Average	Very High	Very High	
Rio Grande do Sul	4	Average	Very Low	Low	Very High	Average	Average	High	High	High	
São Paulo	4	Low	Very Low	Very Low	Very High	Average	Low	Very High	High	High	
Sergipe	4	Average	Average	Average	High	Very Low	Very High	Average	Very High	Low	
Santa Catarina	5	Very Low	Low	Low	High	Very High	High	Very High	High	High	Profile of falls, fractures, violence and mistreatment

SOURCE: SISAP-Elderly, 2020.

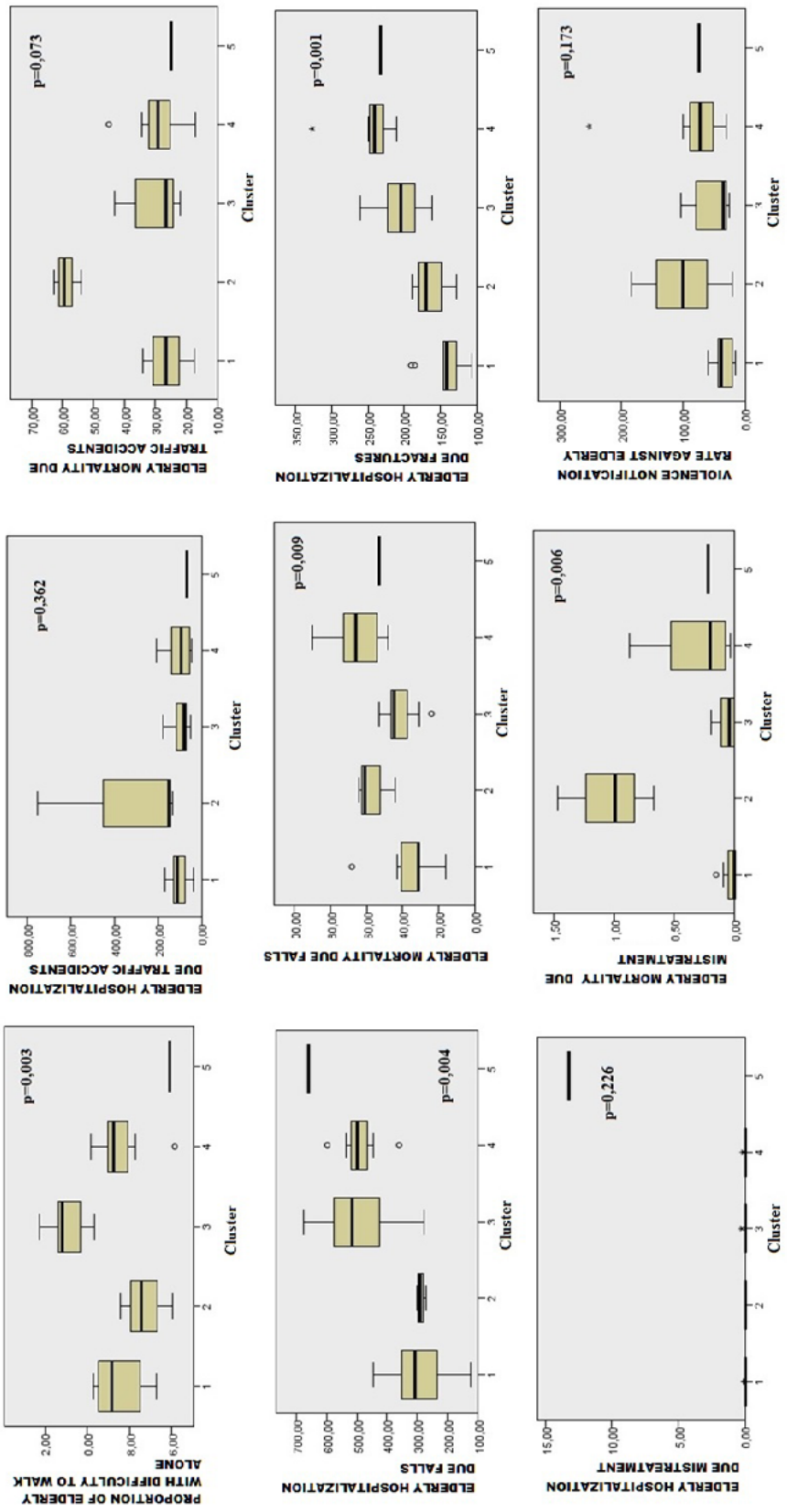

Figure 3. Box Plot and statistical significance of the comparison between the clusters for the values of each variable that make up the Action Plan for tackling violence against older adults in Brazil.

DISCUSSION

The socio-historical identity of old age has been constructed across different eras. There are records of violence and mistreatment dating back to Ancient Greece, but it was at the beginning of the 20th century when there was a (re)emergence of the social devaluation of old age, the result of phenomena such as industrialization, urbanization, technological advancement, patriarchy, neoliberalism, among other factors, contributing to the creation of a "social statute of dependence in old age"[17].

From the analysis of the results, it was observed that there is an increasing trend in the number of reports of violence against older adults, hospitalizations of older adults due to mistreatment, hospitalizations of older adults due to fractures of the femur, mortality of older adults due to falls and hospitalizations of older adults due to falls. To understand this phenomenon, it is necessary to understand the factors that are related to violence against older adults, which have already been described in studies with this population. Older adults who are dependent for instrumental activities of daily living such as home care and management of their environment, are frequent victims of violence[18]. In this sense, the more dependent on their caregiver they become, the more susceptible to violence older adults can be[19].

Violence against older adults has begun to be understood as a public health and criminal justice problem in contemporary times[20]. In addition to the increase in notifications of violence, it is also necessary to assess the growing trend of hospitalizations for abuse. The actual incidence and prevalence of hospitalization for the mistreatment of older adults is unknown, as most cases are underreported. However, this upward trend may be associated with more effective reporting, also linked to the existence of legal mechanisms that establish its necessity[21], such as the Statute for Older Adults and the Policy to Tackle Violence Against Older Adults. Estimates reveal that there are approximately 450,000 new cases of violence against older adults each year in the USA, with an overall prevalence of 10%. These values are alarming if it is considered that for each accounted case, there are five that are not reported[22].

In the context of Latin America, the countries with the highest rates of violence are: Colombia, Brazil and Panama, respectively. In Argentina and Chile, the problem is also growing, as more than 30,000 older adults were victims of mistreatment in 2009 alone[23].

A study published in 2018 evaluated the time trend of hospitalization and mortality from falls in older adults in Brazil, finding that in the period from 1996 to 2012 there were 66,876 deaths from falls and 941,923 hospitalizations with secondary diagnosis associated with such accidents in older adults in the country. In addition, the authors found that 32.3% of these deaths and 21.2% of these hospitalizations in the historical series occurred in Brazilian state capitals. The mortality rate of older adults due to falls in Brazilian capitals increased 200%, from 1.25 to 3.75/10,000 older adults, with an increase of 15% per year, between 1996 and 2012[24]. The increase in these indicators within the historical series evaluated is justified by the authors by the increase of 8.5 million people aged 60 and over, with a greater increase in the southeast, northeast and midwest, followed by the south and north regions[25].

The upward trend identified in this study is also associated with the demographic transition that exists in Brazil. Population aging is a phenomenon that occurs worldwide, and falls are among the diseases that most affect the older adult population[26]. Mortality from falls among older adults has also increased in other countries, with emphasis on developed countries, such as the USA[27].

Types of violence, however, have a heterogeneous distribution, as do the factors associated with them, depending on the social, political, cultural and geographic space in which they are inserted. In one study, different prevalence rates were estimated across continents, with a prevalence of 20.2% in Asia, 15.4% in Europe and 11.7$ in the Americas. The authors stated that rates may vary by type of violence, and depending on the country, state or municipality[4].

In the present study, the spatial distribution of the rates of each specific type of violence showed that there is a regional distribution pattern of

the indicators analyzed. It was observed that the highest rates of notification for violence, as well as hospitalizations for falls, fractures, difficulty walking alone, and hospitalizations for mistreatment were found in the southeast region.

Researchers evaluated hospitalization and mortality from falls among older adults in Brazil, and found that the midwest region had the highest average rates in the period for mortality and hospitalization. This finding corroborates the results of the present study[24]. Some questions are raised about these differences in rates of hospitalization and mortality due to falls among Brazilian regions, as external environments are directly associated with the occurrence of falls, through poor street paving, signs and high sidewalks, and poorly organized public transport does not facilitate its use by older adults[28]. In addition to these factors, the authors also associate the environment around older adults, such as staircases without support, uneven or unpaved floors, slippery surfaces, non-fixed rugs and poorly lit environments, with the problem of falls[29].

A study that analyzed the rates of hospitalization and mortality due to aggression in patients over 60 years old, identified that the southeast region presented the highest rates of hospitalization for this reason and the second highest mortality rate due to this cause. The authors argue that these results suggest the need for greater investment in social and health issues, but it must also be considered that the population of the southeast has the highest density of individuals in Brazil, including older adults[30].

When explaining these regional differences it is important to consider the characteristics of the social conformation of each region, highlighting the intra-individual dynamics, the intergenerational transmission of violence, the levels of dependency between older adults and their caregivers, external stress and social isolation. These are theories already widely reported in literature to try to explain the factors with the potential to lead to violent practices against older adults[31].

The present study identified the relationship between the types of violence through the clustering of indicators, evidenced by the construction of the dendrogram (Figure 2) and the classification of indicators for each state (Table 2).

The analysis of national-level indicators related to violence corresponds to the first of the steps to redesign the service for older individuals, the results of which are reflected in the assessment of declining needs and capacities. The following steps suggest the definition of objectives, the implementation of hospital care plans, ensuring a referral pathway for different levels of health care and involving communities and caregivers in the care and attention process[32].

Government strategies to tackle this phenomenon have been implemented in developed countries since the 1980s[33]. In Brazil, the theme began to appear on the public agenda with the advent of the National Policy for the Reduction of Morbidity and Mortality due to Accidents and Violence, in 2001, and the Statute of Older Adults, in 2003, and was incorporated in the National Health Policy for Older Adults, the National Policy for Emergency Care, the National Policy for People with Disabilities, and the Pact for Health[9].

Due to the particularities related to reports of violence in older adults, which are often related to family members and caregivers[7], health indicators are considered strategies for planning and managing health policies.

These indicators are mostly related to hospital care, and it is therefore suggested that the topic in question is also a subject related to Primary Care, the gateway to the Health Care Network.

Given the regional distribution of the care network of Brazilian health services, as well as the cultural variables closely linked to the prevalence of violence, it is important that Primary Care effectively coordinates prevention actions according to local realities. There is evidence of the potential for interventions within the scope of Primary Care in this sense[34].

Limitations of the present study include the characteristics inherent to the methodological design, such as the impossibility of generalizing the aggregated

results to an individual level, and the underreporting of records of violence against older adults.

CONCLUSION

The temporal trend analysis showed that there is a significant trend of an increase in the number of reports of violence against older adults, hospitalizations of older adults due to mistreatment, hospitalizations of older adults due to fractures of the femur, mortality of older adults due to falls and hospitalizations of older adults due to falls. This trend accompanies the development of the demographic transition in Brazil and around the world. This increase, however, does not exhibit a spatial pattern among Brazilian regions.

Despite the absence of a spatial relationship, the formation of clusters provides support for states to rethink the shaping of their policies in an intersectoral manner, since the phenomenon of violence against older adults is related not only to variables connected to the individual, but also to the context, demanding articulation between different sectors.

Notification strategies should also be intensified, with a view to reducing possible weaknesses in complaints and notifications of violence against older adults in Brazil, thus improving the shaping of statistical models to support government decision-making and reduce morbidity and mortality related to such traumas.

At the national coordination level, plans and programs dedicated to older adults should take into account the multiple approaches to violence, as well as their regional trends, especially in the context of developing countries, which are experiencing different phases of the demographic transition.

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Care for frail older adults in the community: an integrative review

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Abstract

Objective: to identify scientific evidence regarding the care of frail older adults in the community, from the perspective of the older adults themselves. *Method*: a descriptive, integrative review study was performed. The search for articles was carried out in the Medline, Lilacs, Web of Science, Scopus and SciELO databases. The inclusion criteria were complete available articles; published between 2014 and 2019; written in Portuguese, English, Spanish or French; which had older adults as participants. *Results*: four categories of analysis emerged from the results: frailty from the perspective of frail older adults; priorities from the perspective of the older adults; the older adults' perspectives on care by services; and interpersonal relationships in the care of frail older adults. The perception of the older adults has specific characteristics, has maintaining their independence as a focus of care, signals the need to maintain interpersonal relationships, improve communication, and for actions of health education and people-centered services. *Conclusion*: these points demand the attention of care providers and policy services to improve care delivery and provide actions that are welcomed by this public.

Keywords: Health of the Aged. Frailty. Review Literature as Topic. Culturally competent Care. Perception. Frail Elderly.

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INTRODUCTION

The worldwide demographic phenomenon of population aging is a complex and heterogeneous process that, at an individual level, involves the interaction of multiple aspects[1], including the possibility of aging with or without frailty[2-4]. Frailty is a polysemic, multidetermined and multidimensional concept[3-5] related to increased susceptibility to unfavorable health outcomes: illness, functional decline, falls, hospitalization and mortality[5]. In old age, biomedical knowledge assumes frailty to be a vulnerability to biopsychosocial and environmental stressors[2,3,5], correlated with a decrease in functional reserve, limitations in activities of daily living, an increased need for care[6], as well as lower satisfaction with health and quality of life[4].

Frail older adults make up the majority of those in need of formal, informal and health service care[2,7]. Therefore, this syndrome is a public health concern, as it requires integrated care[2], and can be prevented and recoverable through appropriate interventions[5]. Care is a human condition that depends on the point of view of the individual receiving it[8,9] Furthermore, care models centered on acute treatment are inadequate for the frail older population, as they usually disregard the specific configurations of this phenomenon in the community, its support systems and the individual involved[3].

In addition, studies on this topic focus mainly on the association between the frailty syndrome and adverse outcomes[10]. Studies on the experience of frail older adults are rare and limited[4,11,12], from the perspective of the population receiving care[8] and at the community level[13]. Thus, while fundamental, the perspective of frail older adults is relatively unknown[14]. Research that considers the opinions, values, attitudes, understandings, and coping strategies of frail older adults in planning and defining resources, care and interventions in the context of frailty[2,4,7,15] are relevant to improving care and health care, and to adapting services and policies to the demands of this public[5,16] to help achieve integrated care[9,16,17]. Thus, the experience of frail older adults in care is of vital importance to improvements in care[18].

Therefore, the present study seeks to identify the scientific evidence regarding care for the frail older person in the community, through the perception of older adults via an integrative review. The article aims to contribute to the synthesizing of evidence[19] and improving the care of this population[20,21].

METHOD

To obtain a synthesis of current literature, an integrative review was carried out. This method, performed in a systematic, orderly and evidence-based manner, allows the combination of several theoretical and empirical methodologies (experimental and non-experimental) regarding a particular phenomenon. It starts with a guiding question, used to obtain a comprehensive and relevant picture of health care[19-21]. This integrative review was based on the following steps: identification of the study problem; establishment of the literature search strategy; study selection based on inclusion and exclusion criteria; critical reading; content evaluation and categorization; analysis and interpretation of results; and presentation of the review[19,20].

The guiding question was: *what scientific evidence is there about the care process for frail older adults in the community, from the view of such individuals?* The Medline, Lilacs, Web of Science, Scopus and SciELO databases were searched. The terms were matched with the use of the Boolean operator *"and": frail elderly, standard of care, culturally competent care, care; elderly, care, frailty; older adults, care, frailty; frail older people, care; frailty, old, care.* It was decided to keep the descriptors and keywords relevant to approximate the search to the researched subject. The perception of frail older adults living in the community about care was surveyed from reading the abstracts. The survey, carried out by three researchers, was performed in October and November 2018 and updated in December 2019.

Inclusion criteria were: full and freely available articles; publications from 2014 to 2019; works in Portuguese, English, French or Spanish. The flowchart of the article selection steps is shown in Figure 1.

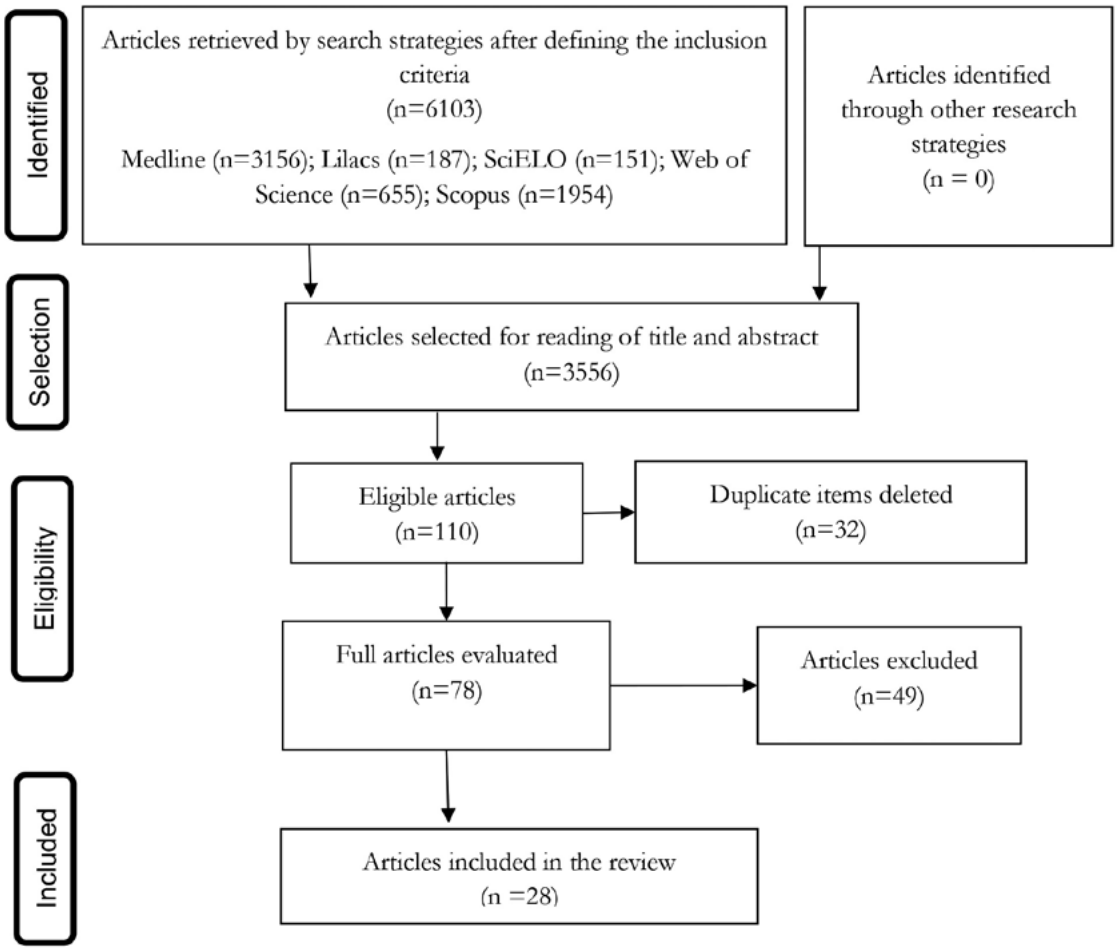


Figure 1. Flowchart of article selection based on the Prisma model. Belo Horizonte, Minas Gerais, Brazil.

In the screening, carried out by two researchers, articles that dealt with: validation of instruments and protocols; prevalence, interventions/programs and costs assessment; care models; association of frailty with specific symptoms and studies that dealt with the perception of the hospitalized or institutionalized older person. Those that included other participants, but where it was possible to distinguish the perception of older adults person in the community, were considered.

The selected articles were classified according to the levels of scientific evidence as proposed by Stetler et al.[21], which comprise: level I - meta-analysis of multiple controlled studies; level II - individual experimental studies; level III - quasi-experimental studies; level IV - non-experimental studies such as descriptive correlational research, qualitative studies or case studies; level V - case reports and level VI - opinion of recognized experts.

The articles were categorized by compiling: title; authors; year; periodical; country; language; method; sample; data collection and analysis procedure; key words; objectives; recommendations; limitations and the view of older people on care for frail older adults living in the community.

RESULTS

After reading the 3,556 abstracts, 110 articles were selected. After excluding the duplicate articles found by the different search strategies, 78 articles were found, which were read in full. Of these, 28 were incorporated into this review. The selected articles

were all written in English (n=28); mainly from Europe (n=25). Fourteen articles exclusively studied the perception of older adults, and 15 publications included other participants.

Regarding the measurement of frailty, five articles used the Clinical Frailty Scale[11,15,22-24], four used the Frailty Phenotype[14,23,25,26], three used the Tilburg Frailty Indicator[27-29], two used the Comprehensive Frailty Assessment Instrument[10.30], five defined frailty without an instrument or objective measurement[4.14.31-33], one article used Prisma-7[6] and one the Edmonton Frailty Scale[34]. Of these, in two articles[14,23] there was the combination of more than one instrument. In nine articles, the measurement of frailty was not explicit[18.35-42].

The evaluated articles predominantly had an evidence level of IV (27 articles), being qualitative, descriptive and cross-sectional studies, and one article corresponded to level III, quasi-experimental. Thus, the evidence level of the articles incorporated in this review is considered reasonable. Among the selected articles, 75% (n=21) used qualitative methodologies, listed in Chart 1. Of these, 90.48% used an interview as an instrument for data collection; one article used observational data and seven used a focus group. Explicitly thematic analysis and category coding was the most recurrent type of analysis (n=12), and the *Nvivo* (n=7) software package was the most used in these qualitative analyzes, followed by Atlas Ti (n=3).

The use of quantitative methodologies represented 17.86% (n=5) of the articles, as summarized in Chart 2. In general, the authors of these articles used questionnaires, health screening instruments and scales to collect data. Four studies were cross-sectional and one quasi-experimental. The SPSS software package was the statistical analysis tool mentioned in all the studies analyzed.

Of the quantitative-qualitative articles (n=2), one collected data on the association of interviews and health screening instruments and one used a semi-structured questionnaire, listed in Chart 3.

Chart 1. Qualitative articles analyzed, 2014-2019. Belo Horizonte, Minas Gerais, 2019.

Objective	No. of older adults	Sex	Mean age
Explore the influences on care preferences of frail older adults with recent acute illnesses[22].	17	10W and 7M	84
Explore the experiences of frail older adults with depression and anxiety and their views on seeking help and ways in which services can be adapted to better meet their needs[31].	28	19W and 9M	80,71
Explore opinions to determine whether there are effective daily strategies that can be adopted to reduce, reverse or prevent frailty[32].	9	6W and 3M	73-89
Explore how slightly frail older people perceive health promotion and the factors that affect behavior change[23].	16	13W and 3M	80
Explore health, health management and behavioral factors that contribute to enabling high-risk patients to avoid unplanned hospitalizations[35].	21	19W and 12M	58-96
Investigate how people have managed to remain resilient as they age in remote places, despite the gap in formal support services[37].	14	Not reporter	61-80
Explore the perceptions of behaviors undertaken by older adults with mild frailty and the components for new health promotion services at home[24].	14	8W and 6M	75-94
Contrast the frail experiences of older adults with the perceptions of others about existential loneliness[33].	15	7W and 8M	86
To explore how frail older patients experience daily life one week after discharge from acute hospitalization[29].	14	7W and 7M	80.6
Explore the perceptions of older adults about frailty and their beliefs about its progression and consequences[11].	29	17W and 12M	66-98

to be continued

Continuation of Table 1

Objective	No. of older adults	Sex	Mean age
Explore access to health and social care services for frail older adults to determine the prospect of developing more accessible services[36].	9	Not reported	> 2
Explore the experiences, understandings, meanings and malleability of frailty for individuals; and describe the development of viable interventions in clinical practice[15].	25	16W and 9M	> 2
Explore how older people with complex health problems experience frailty in their daily lives[38].	10	7W and 7M	84
Examine perceptions and knowledge about frailty among older adults[25].	29	21W and 8M	76.3
Describe how existential loneliness was narrated by frail older adults[26].	22	10W and 12M	76-101
Examine how older people deal with frailty in a transitional care program and discuss the implications for improving service delivery[18].	20	13W and 7M	80
Explore how older people living in disadvantaged neighborhoods deal with aging issues[40].	20	13W and 7M	72.5
To investigate the concept of perceived control related to health care from the point of view of frail older adults[14].	32	19W and 13M	65–84 = 17 ≥85 = 15
Explore the experience of frail older people and case managers in a complex case management intervention[41].	14	10W and 4M	83
Develop an interpretative structure based on older adults' understanding of independence and autonomy for receiving specialized care[42].	91	68W and 23M	80.8
Explore the experience of meaning in life, as well as the loss of meaning for socially frail older adults[30].	56	34W and 22M	79.3

W = women and M = men; * or age range, in years.

Chart 2. Qualitative articles analyzed, 2014-2019. Belo Horizonte, Minas Gerais, 2019.

Objective	No. of older adults	Sex	Average age
Examine whether the perspectives of frail older adults living in the community on the quality of primary care according to the dimensions of the Chronic Care Model are associated with the productivity of patient-professional interactions[27].	464	336W and 128M	82.4
Examine loneliness, health-related quality of life and health complaints regarding the use of outpatient health care among older adults living at home[39].	153	102W and 51M	81.5
Analyze the explanatory power of the variables that measure health strengthening factors for self-rated health among frail older adults living in the community[4].	161	89W and 72M	82
Describe care needs perceived as met and not met by frail older adults using a multidimensional assessment tool and explore associations with sociodemographic and health-related characteristics[6].	1,137	760W and 377M	80.5
Examine the health needs of older residents in the community living in Porto, Portugal, diagnosed with moderate or severe dementia, associated with functional dependence, cognitive decline, limitations in activities of daily living and levels of frailty[34].	83	55M and 28H	79.95

W = women and M = men; * or age range, in years.

Chart 3. Quantitative-qualitative articles analyzed, 2014-2019. Belo Horizonte, Minas Gerais, 2019.

Objective	No. of older adults	Sex	Average age
Obtain insights into the lived experiences of frailty among older people to determine which forces can balance the deficits that affect frailty[10].	121	76W and 45M	78.8
Identify the risks that could threaten the independent life of frail older adults[28].	29	22W and 7M	83.6

W = women and M = men; * or age range, in years.

DISCUSSION

In response to the guiding question: "*what scientific evidence is there about the care process for frail older adults in the community, from the view of such individuals",* it was noted that the literature covers different areas and dimensions of care. Self-, family, community, social and intersectoral care is addressed. The results were organized into four categories of analysis: frailty from the perception of the frail older person; priorities from the perception of older adults; perspectives of older adults regarding care services; interpersonal relationships in care for frail older adults.

Frailty from the perception of the frail older person

This category addresses how older adults perceive frailty. The older adults' view of frailty is recurrent as a negative, harmful, rejected and associated label, with worsening health conditions, reduced participation and increased stigmatization[11,15,25,32]. A qualitative study on the perception and attitude of older adults towards frailty identified a discrepancy between operationalization in clinical contexts and the understanding of older adults[11]. Older adults did not identify themselves as frail even when they met the objective diagnostic criteria, and this classification did not always coincide with a feeling of frailty[11]. For older adults, frailty was identified based on health levels and participation in physical and social activities, resulting from isolated events, temporary disabilities, old age and physical limitations[11].

Frailty was described as a negative physical and psychological condition, close to disability, and reflective of common stereotypes of old age[11]. For many older adults, frailty was inevitable, permanent and irreversible due to aging, and composed not only of physical elements proposed in the phenotypic definition, but also mental and psychological aspects[25]. Thus, for older adults, changes in health could be the cause or result of self-identification as frail, so that the diagnosis was not only information, but also a determinant for their health[11]. The most frail participants accepted the diagnosis more easily, as they lived with more symptoms than less frail individuals[25]. Even among frail older adults, there is a preference not to use the term to describe their health condition, so programs should innovate to find a form of communication that is acceptable[25] and pay attention to the negative effects of the label of frail for this population[15].

It was also found in literature[4,5,15] that the malleability of frailty is little known among older adults, requiring health education to raise awareness of the reversibility of frailty and modify health behaviors. Older adults, who live in deprived neighborhoods, seemed to be resourceful when dealing with adversities, and were happy with their abilities. This behavior, for the authors, could mask deficits in knowledge, revealing the potential of health education to tackle the difficulties related to aging[4].

Another study addresses the understanding of frailty by older adults as a dynamic state that combines factors of balance within the scope of the individual, the environment and macrosocial factors, which influence the maintenance of a good quality of life[10]. Therefore, control in the area of health is multidimensional, and external factors are just as important as the active attitudes and cognitive processes used by the subjects themselves[14]. In contrast, there are also reports that being frail can

facilitate obtaining assistance, care, support and benefits from others, and may function as a means to seeking improvements in care and services[11].

Priorities from the perception of older adults

Identifying evidence of the priorities perceived by older adults is important[28]. This category shows the interest of frail older adults in remaining at home[28] and as independent as possible, with autonomy, quality of life and the ability to deal with daily activities[23,28]. From the perspective of older adults, declining physical health is revealed as an accepted aspect of the aging process[28,40], with the condition of remaining independent and not disturbing others[28]. Preserving their capacity for self-care, remaining active social networks, not feeling lonely, manifesting fewer symptoms, as well as maintaining their autonomy, participation in the community and accessing essential services, are listed as priorities[4,10,28].

Even the most frail older adults display engagement in daily activities as a subsidy for building resilience against frailty[32]. The perspective of frail older adults also demonstrates the experience of anxiety, insecurity, uncertainty and fear regarding frailty, when daily life becomes precarious and challenging[18,38]. Thus, the sense of control is reduced, and individuals seek support to adapt to their new levels of frailty[18], to maintain their independence and the continuance of their personality[38].

Studies have shown that many frail older adults are reluctant to ask for help or support from their social network for fear of disturbing others or concluding that receiving help is impossible[28]. After experiencing an acute illness, the desire remains to remain independent, to 'return to normal' and, if necessary, to find one's new normal according to preferences in one's own social context[22].

From this perspective, priorities from the perspective of the frail older person are not only medical problems, but also include factors that support the maintenance of the ability to take care of oneself[4,38]. Through a logistic regression, in the bivariate analysis, frail older adults who were satisfied with their ability to take care of themselves were about eight times more likely to rate their health as good than those who were not satisfied with their ability to care for themselves[4].

Among the factors that modulate the perception of control of health care among older adults, the following stand out: self-confidence in the organization of professional and/or informal care and in health management in the home environment; the clarity of the care available; as well as the perceived support of the individual's social network, health professionals, health organizations, infrastructure and services[14]. In contrast, a lack of interest in self-care can be a consequence of the loss of skills, causing expectations to be lowered in this area[14]. The perception of impaired independence is associated with the clarification of its different dimensions: relative, special and social[42].

Perspectives of older adults regarding care services

From the perspectives of frail older adults living in the community, important points can be made about the care provided by health services, indicating the need for more heterogeneous responses[18]. The articles reviewed highlight the focus on the independence of the frail older person, person-centered care and personalized assistance on topics important to the daily life of each individual to maintain their autonomy, despite their disabilities[15,18,24,38]. The integration of services to minimize fragmentation in the provision of services, improve communication, socialization and mobility are necessary[15,18,24,34]. Emotional aspects to produce comfort and well-being; the adoption of psychosocial and spiritual approaches; and the assessment of care needs and comprehensive geriatric assessments are also essential[34].

The multidimensional concept of frailty requires that the subjective perspectives of older adults be considered. One article highlights the salutogenic approach in care planning as beneficial to frail older adults, based on the narratives of this population group about their daily life, in order to support the individual in their living context, allowing them to remain in their social network and to maintain satisfaction with their ability to manage everyday life[4].

Frail older adults need a wide range of services over a long period of time due to the complex health situation and changes they experience[36]. In Poland, the perspective of frail older adults revealed the inadequacy of services for the needs of this population. Among the difficulties encountered when accessing health and social care were: the lack of knowledge about the existence of some services; shortages in the provision of care, lengthy waiting times and the geographical location of the services; the lack of an adequate and trained professional in the area of older adult health, the low operational level for the most vulnerable people, among others[36].

The screening of frail older patients by health services must be accompanied by support interventions for older adults and their caregivers[15]. In primary care, studies have shown the need to invest in the interaction between patients and professionals to improve the quality of care[27]. In this context, the perception of the demand for care provides important information about the real care needs of frail older adults - however, more attention is often paid to physical and environmental issues than those in the psychosocial domain[6]. In the United Kingdom, older people evaluated the care received positively, affirmed their confidence in and the continuity of health care to avoid unplanned hospitalization by including medication, physical aids, adaptations to the home, the adoption of a healthy lifestyle and psychosocial practices[35].

Scientific evidence suggests that interventions should focus on the multidimensional perspectives of frail older adults discharged from hospital, be cautious during transition care and reorganize the integration between the primary and secondary care sectors[29]. The involvement of the frail older person in their care, in decision making, in the transition of care from the hospital to the home requires improving communication and information[29]. For patients, the type and amount of help, access to and administration of medications, failures in communication, fear of being sick alone and concerns about activities of daily living are relevant[29]. In transition care, the desire also emerges that the care is individualized, integrated, centered on the needs of the client, with the patient's involvement in decision-making so that they feel supported when dealing with increased levels of frailty[18]. Conversely, it can be seen that the transition of care can be impaired due to fragmentation in the provision of services, the loss of control over the process in a scenario of reduced functionality, adaptation and uncertainties surrounding future support[18].

For frail older adults, satisfaction with the ability to take care of oneself, having ten or less symptoms and not feeling lonely, had the best explanatory power for the frail experiences of older adults in good health due to the possibility of managing and maintaining their daily lives.[4]. Frail older adults with more limitations report more need of care, whether received or not received, in all domains. One study found that a younger age and a higher educational level were associated with the presence of unmet needs, a presumed cohort effect as this population is likely to have a higher expectation of health services[6].

Interpersonal relationships in care for frail older adults

This category introduces the various relational aspects that modulate the care of the frail older person in the community. Interpersonal relationships, social contact, intervention in community contexts were particularly valued by this group[14,23,31,35,36] as fundamental for prevention, adherence to interventions and the reduction of frailty[23].

Having a goal in life, feeling useful and remaining socially active can lead to fewer medical interventions – a perspective desired by this public[23]. The studies highlighted the importance of being interested in the experiences of frail older adults; offering home visits, listening and providing psychosocial support in the community[23]; and recognizing the incidence of anxiety and depression in this population[31]. Similarly, another study maintains that the family support network, relatives, neighbors and friends reduced anxiety, hospitalization, and were recognized as fundamental to well-being[35]. There is a correlation between social support and resilience, contributing to a better quality of life for older adults[35,37]. Social and community life is expressed as a possibility for compensating for losses[42]. Likewise, social ties with family members, neighbors, caregivers, local authorities emerge as an important source of

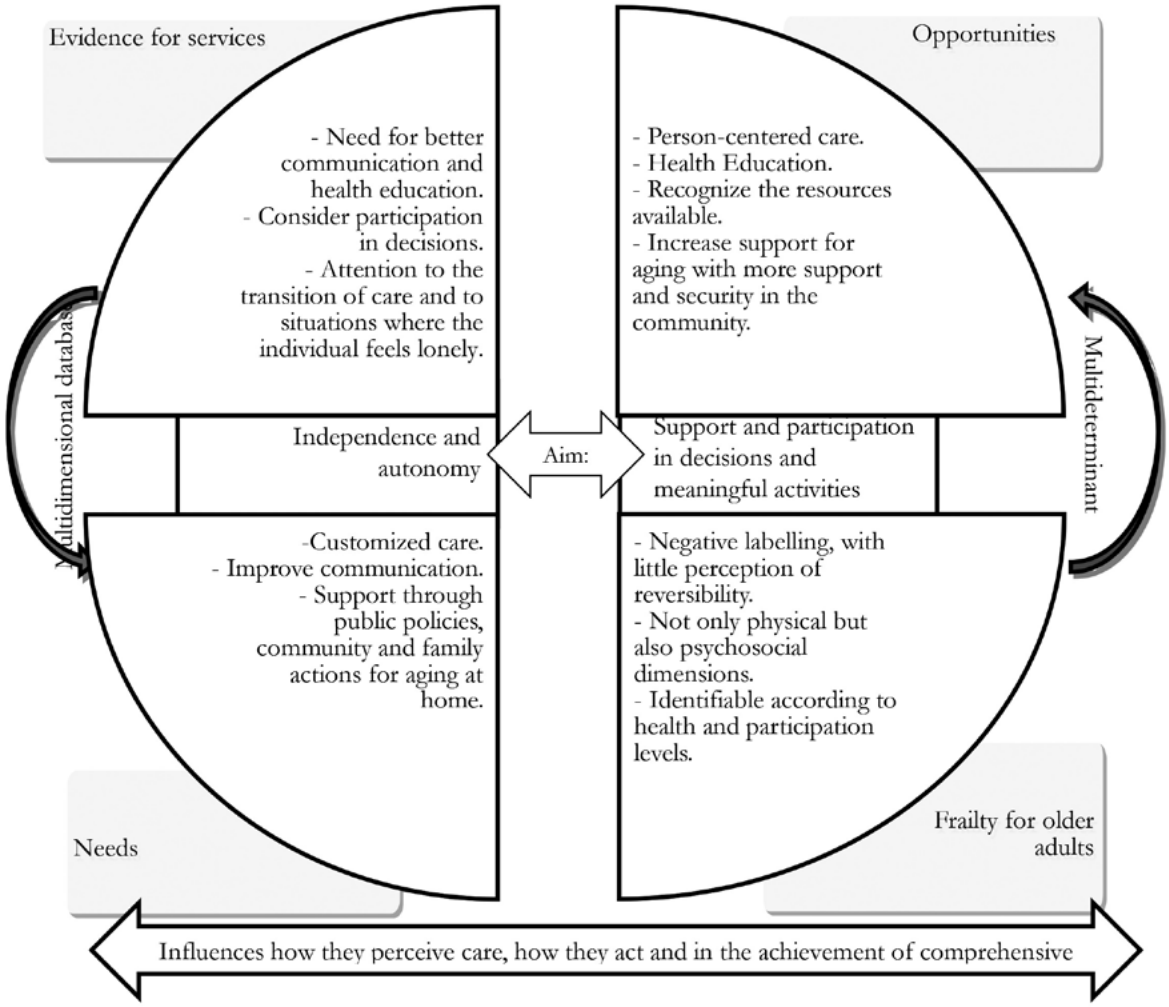
meaning[30]. The social roles played by older adults and their social networks change over time, with frail older adults tending to maintain a small network because of the difficulty of establishing a new network due to frailty and being selective in the search for relationships[30].

Another factor is to recognize loneliness as a potential clinical problem for the frail older adult, who uses health services more often[39]. One study addresses the perception of frail older adults about existential loneliness based on the Emmy van Deurzen theoretical model. In this model the life of older adults is characterized by waiting, experiencing different loss processes: in their social environment, social roles, and in their body, among others[33]. In this article, the scientific evidence on the care process for the frail older adult indicates that, in the older person's view, being connected through social relationships does not mean a great number of contacts, but rather deep conversations about significant issues, while, on the other hand, a feeling of existential loneliness arises when the choices made disregard the opinions of older adults[33]. Similarly, the literature recognizes that a feeling of depersonalization can occur when older people are not involved in decisions[2].

Another study shows that the significant union with relatives, friends and the health team (through person-centered care), as well as the experience of living a meaningful life and of having their feelings recognized, relieve existential loneliness and contribute to the process of care[26]. The prevalence of feelings of loneliness in the frail older population is similar to that of other older adults. However, more frail and lonelier older adults had worse general physical and psychosocial health conditions and used health services more than non-lonely individuals[39].

The meanings of life for frail older adults may still be within the scope of their different needs. In the light of Derkx's theoretical model, the needs for the frail older person were: to continue their daily activities, to have a purpose for the future, to pursue hobbies, to maintain a connection with their children and grandchildren; to evaluate their way of life as morally worthy; to maintain the level of control and autonomy in their lives; to value themselves, to be recognized and respected by others; to realize the continuity of their identity; to maintain a connection to relatives and friends as a support to others despite being frail, or a connection in the spiritual realm; feelings of excitement through transcendence via art, culture, nature and the events of life[30]. Thus, the loss or scarcity of meaning manifests itself as a result of aging or a restricted connection network, which may occur due to a lack of purpose, coherence or connection, thus, the importance of the social environment is evident in maintaining the meaning of life[30]. The results and discussion are summarized in Figure 2.

Limitations of the present review include the fact that it does not address the perspectives of other actors involved in the care settings for frail older adults in the community. However, it contributes to considerations of the point of view of frail older adults, which is little known[11,18] when planning health actions and public policies aimed at such individuals. Thus, considering the psychosocial needs of frail older adults[6] provides insights into the risks that this population group perceives as a priority[28] and their coping strategies[40].



Source: Prepared by the authors.

Figure 2. Scientific evidence about the process of care of frail older adults residing in the community, from the perspective of the older adults. Belo Horizonte, Minas Gerais, 2019.

CONCLUSION

In this review, most studies revealed frailty from the perspective of older adults with various specific characteristics, ranging from clinical operations to influence in care. Frailty appears as a predominantly negative label for the frail older person with little perception of reversibility. Scientific evidence on care from the perspective of the frail older person in the community shows that the focus of care is to maintain their capacity, functionality and participation in decisions. However, this condition also depends on the availability of the support network, community resources and public policies. Thus, the comprehensive care model, support for older adults and their caregivers is necessary to increase assistance for aging with more support and security for the longest possible time.

The review revealed that services need to offer personalized, person-centered assistance, which also includes psychosocial aspects and the narratives and life contexts of the older adults, with special attention to transition care and preventing loneliness among frail older adults. It was also observed that, for the frail older person in the community, it is necessary

to improve communication, considering the choices based on the interests of this public. Thus, attention should be paid to the fact that the meaning of life for this population also focuses on communication, and so an ethical posture in caring for the frail older person involves listening to such individuals.

The articles examined in this study reflected the lack of consensus regarding the measurement of frailty. The publications are concentrated in developed countries which have been experiencing the aging process for a longer time, thus focusing on the greater challenges in developing countries. The demand for care for the frail older population is emphasized in the articles that comprised this review, an increasingly important perspective in the current scenario in society. A review of related topics, such as the analysis of interventions with frail older adults in the community, is suggested.

The current knowledge if care for the frail older person from the perspective of care recipients in the community supports decisions and improvements that favor the quality of life of this population. In this way, health professionals and public policies can carry out actions in line with the needs of this public. Furthermore, the meanings and senses of the experiences of frailty and care influence the way older adults perceive and act when dealing with this process, in order to achieve comprehensive care and ensure the quality of life of this population.

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Spatial analysis of traffic accidents involving older adults in a city in the northeast of Brazil

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Abstract

Objective: to describe the epidemiological characteristics of traffic accidents involving older victims, responded to by the Mobile Emergency Service (or SAMU), and to analyze the spatial distribution of these events in the city of Olinda, Pernambuco, Brazil, from 2015 to 2018. *Method:* a composite cross-sectional study was performed, using SAMU service records as a data source. Descriptive statistics were applied, based on frequency distribution. For the mapping and detection of spatial clusters, the Kernel intensity estimator was used. *Results:* SAMU responded to 137 traffic accidents with older victims. The most affected age group were older adults aged 60 to 69 years (81; 59.1%), and there was a predominance of male victims (90; 65.7%). The day of the week when most accidents occurred was Wednesday (29; 21.25%), and the highest number of accidents occurred in the morning (46; 33.6%). As for the nature of the accident, accidents involving pedestrians (80; 58.4) predominated over collisions (57; 41.6%). The Kernel intensity estimator identified a significant focus in the Peixinhos neighborhood, with other foci distributed throughout the coastal area. *Conclusion:* the study identified the characteristics of older victims of traffic accidents and areas of greatest risk for their occurrence in the city studied. This information can be useful when planning environmental engineering measures to be carried out in the regions identified, in order to reduce the frequency of accidents and injuries.

Keywords: Accidents, Traffic. Health of the Elderly. Prehospital Care. Emergency Medical Services. Spatial Analysis.

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INTRODUCTION

The development of human societies has been accompanied by an increase in life expectancy and in the number of older adults. Between 2000 and 2050, the proportion of the world's population aged over 60 years will double from around 11% to 22%, with the number of people in this age group expected to increase from 605 million to two billion in the same period[1]. In Brazil, projections by the Brazilian Institute of Geography and Statistics (or IBGE) indicate that, in 2060, the percentage of the population aged 65 or over will reach 25.5% (58.2 million older adults). In 2018, this proportion was 9.2% (19.2 million)[2].

With population aging, there has been a corresponding increase in the total number of older users of roadways, either as vehicle occupants or as pedestrians[3]. A number of challenges associated with natural aging, including sensory, perceptual, cognitive and motor declines, can affect reaction time and the ability to drive[4,5]. Older adults are therefore a vulnerable group of road users, with high mortality and morbidity from traffic accidents[3,6].

Geographic Information Systems (GIS) are commonly used to analyze traffic accidents[7], allowing accident data to be presented visually, and the locations of such events to be analyzed[8]. By identifying the most common locations and/or sections of roads with high accident rates, traffic authorities can adopt preventive measures and apply regulations to reduce the frequency of accidents, deaths, injuries and financial losses[7]. The Kernel intensity estimation method, meanwhile, allows a simple assessment of data relating to the density of points or clusters of sites of accidents involving older adults[9,10].

As traffic accidents represent one of the most important current public health problems, the analysis of the geographical distribution of such accidents involving the older population can help policy makers devise measures aimed at reducing them. The present study aimed to describe the epidemiological characteristics of events involving older victims of traffic accidents, responded to by the Mobile Emergency Service (or SAMU), and to analyze the spatial distribution of these events in the city of Olinda, Pernambuco, from 2015 to 2018.

METHOD

A cross-sectional study was carried out in the city of Olinda, Pernambuco, Brazil (Figure 1). The city has a territorial extension of 41,681 km^2, with an estimated population of 389,494 inhabitants, distributed over 31 neighborhoods. Its demographic density rate is 9,360.236 inhabitants/km^2, the highest in the state of Pernambuco and the fifth largest in Brazil[2].

The study included SAMU responses to traffic accidents (collisions and being run over), the victims of which were 60 years of age or older, between January 1, 2015 and December 31, 2018. The data source was SAMU the response forms, which are filled out by the teams at the time of the call-out. These data were analyzed from September 2017 to January 2018. The variables analyzed were: demographic (sex and age group) and those related to the accident (type of accident, day of the week, time of occurrence and place of occurrence). The variables duration of call-out and type of vehicle involved in the accident were excluded due to the high non-completion rate: 25.5% and 35.8%, respectively. Descriptive statistics were used for data analysis, using the R program (version 3.6.1).

For spatial analysis, the responses were categorized according to the neighborhood of occurrence and geocoded. The QGIS program, version 2.18, was used to map and detect spatial clusters with the Kernel intensity estimator. This is a non-parametric method used to identify spatial patterns, which calculates the density of events around each point, weighted by the distance from the point of each event[11]. Thus, peaks represent the presence of clusters or hot spots in the distribution of events, while low values represent events that occur less frequently in the area[10,12]. In the present study, a radius of 500 meters was adopted.

The project was approved by the Research Ethics Committee of the Complexo Hospital da Universidade de Pernambuco (the University of Pernambuco Hospital Complex), Hospital

Universitário Oswaldo Cruz (HUOC) (the Oswaldo Cruz University Hospital), and the Pernambuco Cardiological Emergency Unit (or PROCAPE) under CAAE nº 83723618.3.0000.5192.

RESULTS

During the study period, 137 SAMU responses to traffic accidents with older victims were recorded. Most of the victims were male (90; 65.7%), while the average age was 70.4 years (±0.7), and ranged from 60 to 98 years. The highest frequency was for the group aged from 60 to 69 years (81; 59.1%)

Regarding the characteristics of the responses, the highest frequency was in the morning, from 6 am to 11:59 am (46; 33.6%), followed by the afternoon, from 12 pm to 5:59 pm (44; 32.1%), on Wednesdays (29; 21.25) and Fridays (28; 20.4%). The months of October (20; 14.6%) and January (18; 13.1%) had the highest number of call-outs. As to the nature of the accident, those involving pedestrians (80; 58.4) predominated over collisions (57; 41.6%) (Table 1).

The spatial analysis, performed using the Kernel density estimator, showed that traffic accidents involving older adults responded to by SAMU in Olinda were concentrated in the neighborhoods of Peixinhos (the main focus), along Avenida Presidente Kennedy. Medium intensity areas were identified on the coast, located in the neighborhoods of Casa Caiada and Bairro Novo, intersected by the avenues Governador Carlos de Lima Cavalcanti and Getúlio Vargas, respectively, while there were less significant areas in the neighborhoods of Carmo, Varadouro, Fragoso, Bultrins and Salgadinho (Figure 2).

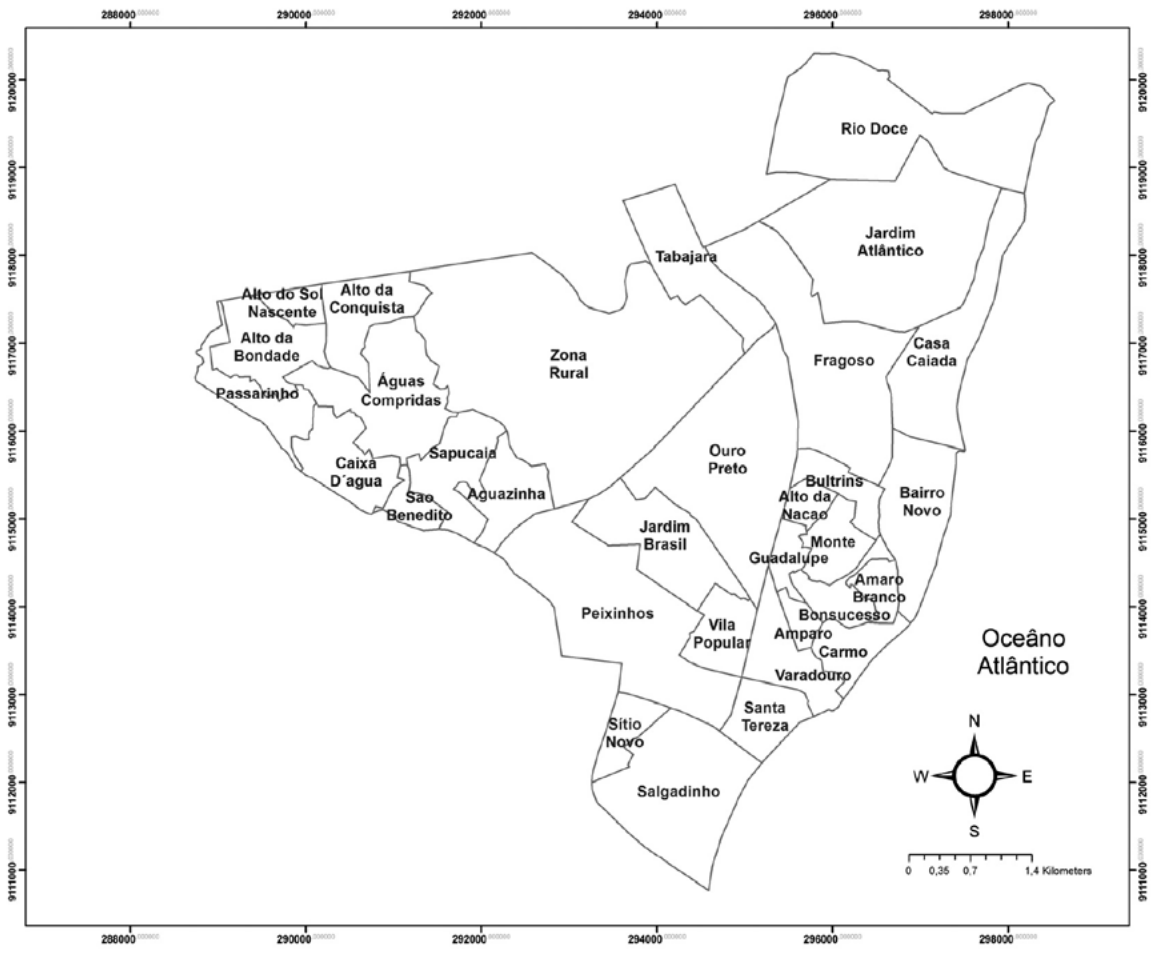

Figure 1. Location and divisions of neighborhoods in the city of Olinda, Pernambuco, Brazil.

Table 1. Epidemiological characteristics of older victims of traffic accidents responded to by SAMU 192, between 2015 and 2018 in the city of Olinda, Pernambuco, Brazil, 2018.

Variables	n(%)
Sex	
Female	47(34.3)
Male	90(65.7)
Age group (in years)	
60 to 69	81(59.1)
70 to 79	35(25.5)
80 and over	21(15.3)
Time of occurrence	
00:00 to 05:59	7(5.1)
06:00 to 11:59	46(33.6)
12:00 to 17:59	44(32.1)
18:00 to 23:59	40(29.2)
Day of the week	
Sunday	16(11.7)
Monday	16(11.7)
Tuesday	9(6.6)
Wednesday	29(21.2)
Thursday	20(14.6)
Friday	28(20.4)
Saturday	19(13.9)
Month	
January	18(13.1)
February	10(7.3)
March	15(10.9)
April	7(5.1)
May	5(3.6)
June	10(7.3)
July	8(5.8)
August	10(7.3)
September	12(8.8)
October	20(14.6)
November	10(7.3)
December	12(8.8)
Nature of the accident	
Run over	80(58.4)
Collision	57(41.6)

Source: Prepared by the authors based on data from SAMU. Olinda, Pernambuco.

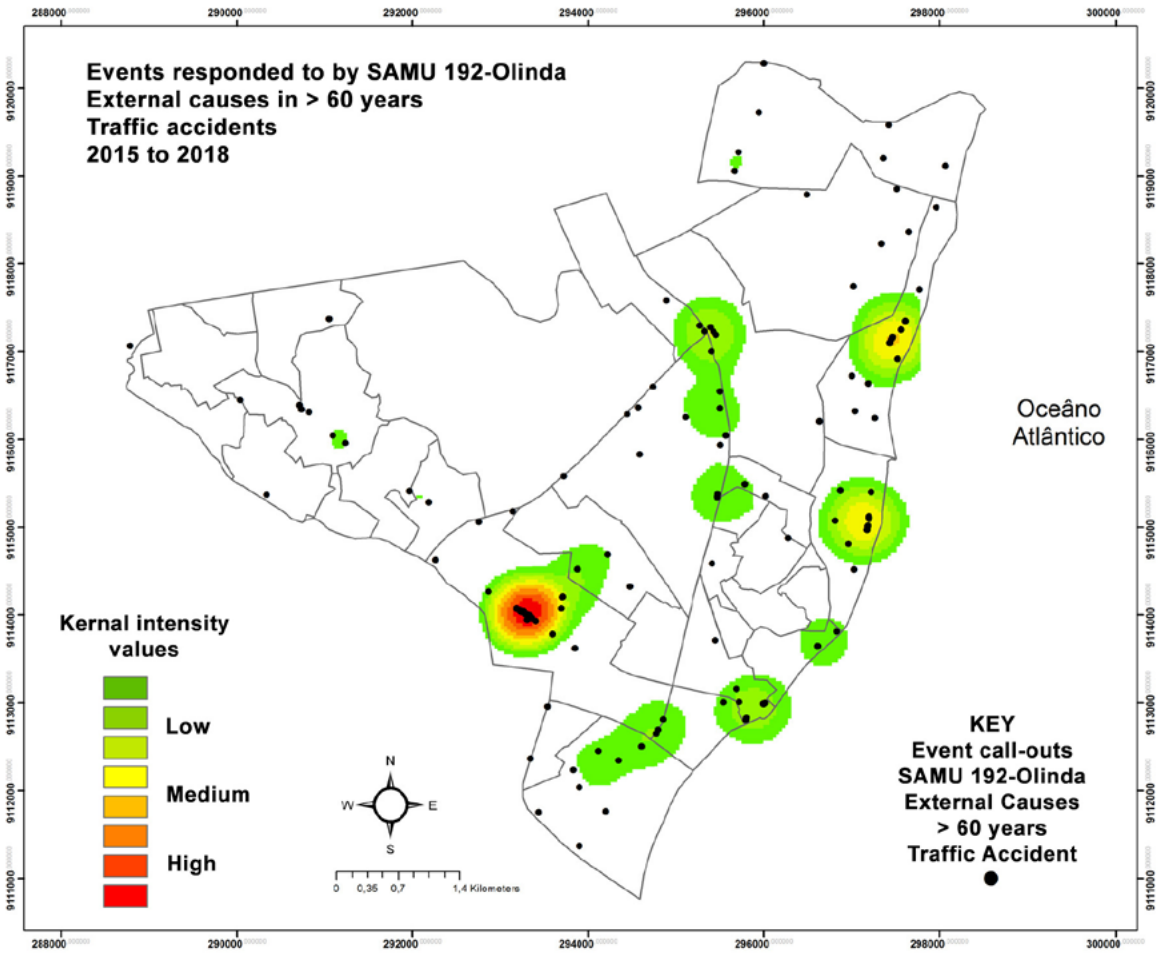

Figure 2. Spatial distribution and intensity of traffic accidents involving older adults responded to by SAMU from 2015 to 2018, Olinda, Pernambuco, Brazil.

DISCUSSION

Older adults account for a substantial number of hospitalizations and deaths caused by traffic accidents[6]. The present study investigated the demographic and occurrence profiles of pre-hospital emergency care in accidents involving older adults. Individual characteristics, such as sex, health conditions and socioeconomic status can provide a better understanding of individuals' vulnerability to old age, in combination with urban infrastructure and traffic conditions[13].

The demographic characteristics of the present study demonstrated that the highest frequency of call-outs involved older adults, aged 60 to 69 years old. A recent review study on traffic accidents involving such older adults identified, as a demographic profile, the male sex and the age group from 60 to 69 years[14]. The fact that younger older adults are the most affected shows is most likely because such adults have a more active life, with independence and autonomy, and activities outside the home form part of their daily routine[15]. A study[16] that aimed to estimate the burden of traffic accidents and mortality among older adults found that the highest occurrence was in the 60 to 74 year old age group, among men, and involved mild trauma. In terms of mortality, older adults over 75 years old and pedestrians had a greater chance of death.

In accidents of equal severity, the morbidity and mortality of older adults are higher than those of young adults[17,18]. A study in Chile identified greater vulnerability among older adults, with a 0.5 times higher rate of suffering a traffic accident, a 0.6 times higher rate of suffering an injury as a result of such accident, and a 1.3 times higher rate of mortality as a result of said accident, than young adults[19]. In Brazil, in 2017, the Mortality Information System recorded 6,030 deaths from traffic accidents among people aged over 60 years[20].

The occurrences mostly occurred during the day, during the week and in the months of January and October. A study that analyzed the risk of collisions according to age, sex and time of day showed that the risk of fatal injury remained constant throughout the day for drivers over 70 years old, reinforcing the greater frailty of this population to this type of accident[21]. Older adults experience a decline in driving skills and other body functions, increasing the likelihood of dying as a result of a traffic accident[22]. In Sweden, the spatial-temporal analysis of accidents involving older adults found that they occur on weekdays, during the day and in the coldest months of the year[13]. In a review of accidents involving older adults[14], it was observed that such adults use self-regulatory behaviors, that is, those involving the self-reported decision to protect oneself, with the adoption of strategies such as reducing exposure to traffic, driving at a reduced speed and avoiding driving at night.

Being knocked down was the main type of accident found. Literature highlights the significance of being run over as a result of traffic accidents involving older adults[9,14,15]. This can be explained by declining reflexes, a loss of hearing and vision, a loss of strength and agility, the presence of chronic diseases and the use of polypharmacy to treat comorbidities, which can negatively affect older adults when crossing public roads. Being run over is the main cause of morbidity and mortality from traffic accidents in this population group[14,16,23].

When accidents were analyzed by the type of occurrence, it was observed that older pedestrians can be up to seven times more likely to die from traffic accidents than other age groups[6,24], which can be explained both by the functional conditions of the older adults, by the traffic conditions in cities and, most of all, by poorly educated and reckless attitudes among drivers and motorcyclists[14,22].

Improving services for pedestrians, urban traffic systems and hospital care are potential areas of intervention, especially in the health sector, with the aim of reducing the burden of traffic deaths among this population[14-16]. The need to establish comprehensive trauma management guidelines, adapted for and largely aimed at older adults, has been observed, considering the mortality rates among this population[16].

Spatial analysis revealed that the areas with the highest concentration of accidents were those where most activities occur, and where the population is concentrated during the day. This seems to be a pattern of traffic accidents among older adults[13,15].

The Kernel intensity map identified the Peixinhos neighborhood as a hot spot, in other words, an area with a greater number of accidents. This neighborhood has a dense commercial area, predominantly located on Avenida Presidente Kennedy, the main access road to the neighborhood, and is one of the main corridors in the city for buses and other vehicles, as well has having a poorly maintained road surface. The other hot spots, according to the Kernel density estimator, were Avenida Governador Carlos Lima and Avenida Getúlio Vargas, both of which have shops, banks, stores and a large flow of people, contributing to the occurrence of accidents, including those involving older adults. Inspections should be performed in these areas and preventive interventions carried out, including signaling for pedestrians and the installation of traffic lights with an audible warning and more time to cross, to allow the safe passage of older adults. Traffic education campaigns should also be promoted, and traffic speed reducers, improved lighting and pedestrian crossing layouts should be installed.

The implementation of preventive and corrective measures, based on studies using the Geographic Information System, provides spatial analysis through the surveillance of land transport accidents and allows the planning of preventive and protective measures for the affected populations in a timely

manner[9,25]. In a spatial analysis study of deaths from traffic accidents in the micro-regions of the state of São Paulo, it is possible to identify the places with the highest mortality rates, allowing inspection actions to prevent accidents[26].

Therefore, the potential of studies that use data georeferencing in urban centers can be seen, in order to identify the critical points for health promotion and accident prevention interventions.

The s study has certain limitations: a) the source of data used does not cover the totality of occurrences, and call-outs by the Fire Department are not included, nor victims rescued by third parties and referred to health services, or those who refused emergency care; b) the outcome relating to pre-hospital care could not be described due to the lack of communication between SAMU and hospital care, and so this information is not included in the database; c) in relation to secondary data, incompleteness and flaws in the completion of forms are inherent, and some variables could not be analyzed due to the high non-completion rate; and d) the limited number of observations made it impossible to carry out more robust statistical analyzes. Despite these limitations, the results of the present study confirm that a large number of accidents involving older adults occurred in certain areas of the city, which can assist in carrying out integrated preventive actions between the health sector and urban planning.

CONCLUSION

The present study showed that the age group with the highest frequency of accidents was younger older adults, with a predominance of men, and that most occurrences occurred on Wednesday, in the morning. Being knocked down was the main type of accident and the Kernel density estimator identified a highly expressive focus in the Peixinhos neighborhood, and other foci distributed throughout the coastal area. This is important information for health surveillance actions and for planning the emergency care network. Such information is also useful for urban planners, who may consider implementing environmental engineering measures in the regions identified to reduce the frequency of accidents and injuries.

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The middle-aged adult and their own old age: a structural approach to social representation

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Abstract

Objective: characterize and analyze social representations of middle-aged adults over their old age. *Method*: Qualitative research supported by the Theory of Social Representation. The field of study was the marginal urban jurisdiction of the Toribia Castro and San Martin Health Centers, in the Lambayeque district, in Peru. Two hundred people between 40 and 59 years old were participants in the study, 50% males and 50% females. Data was collected using the Free Word Association Technique, with the inductor term "my old age". The data was analyzed with the EVOC 2003 software. *Results*: middle-aged adults generated a similar representation of their old age with the use of the following elements: disease, family, uselessness, loneliness. The concepts of protection and fear only appeared in the probable central nucleus of the representation of men, while in that of women, sadness was the one that appeared the most. *Conclusion*: The probable central nucleus of old age shows negative representation overall and, depending on how the person copes with it in the course of their life, the meanings assigned to it will vary. Health promotion policies that highlight self-care and communicate a positive and autonomous image of old age can contribute to reconfigure such representations.

Keywords: Adult. Health of the Elderly. Aging. Psychology, Social. Health Police.

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INTRODUCTION

The aging process as it is among Peruvian population has encouraged the local government to come up with a normative framework and the *Ley de la Persona Adulta Mayor* (older people's law), which takes care of its political duties towards aging among the national population; however, very little has been effectively done to look after this age group. Of even lower interest to the government is the middle-aged adult group, who are left as second choice, given the prioritizing of other age groups by the present government. Up to recently, the adult phase of one's life – if we consider that this phase finishes when we reach 60 years old – would correspond to an average of 40 years. However, if today we are living up until 80, 90 and even 100, it becomes evident that developing programs that could support the quality of life of people who are going to live 40 or 60 years more would make much sense.

It is evident that there is massive presence of adults everywhere and that they deserve different levels of attention. The middle-aged adult group (40 to 59 years old) represent 21% of the general population, a very important group within the demographic pyramid. In addition, they will be the ones to start the old age stage sooner, thus, becoming the elderly people of the future[4,5]. Such situation is of concern in developed countries, where some changes have already taken place. However, in developing countries, where higher levels of growth can be observed, not all adults are able to age in a positive manner. A great number of people reach old age under circumstances of inequality and imbalance, which affects their quality of life and social wellbeing.

Aging is a multidimensional process, which involves looking after different domains, like maintenance of physical and cognitive capabilities as well as maintenance of social commitment and participation, including participation in productive activities in situations that can change throughout life so that one is able to reach old age smoothly[6]. In order to be successful in that regard, it is necessary to pay attention to predicting and determining factors as well as understand the impact caused by extrinsic factors. Thus, implementing effective promotion strategies will be possible if done in a holistic fashion and if those strategies cater for the role of changes in an adult's lifestyle along the way[7].

Old age as a phase of life within a population group is a well-known reality. Differently, the middle-aged adult situation is not so visible, even though it is an important phase as well. In order for one to age properly, it is necessary to be assisted by implemented strategies and care throughout one's life[6]. It is a fact that people in this age group will be able to use 10 to 20 years to restructure their lifestyles. That fact *per se* forecasts the need for permanent assistance so they can make the most of this phase of their lives in order to work preventively towards a healthy situation during old age. Then, they will be capable of living with autonomy and independence and will have to cope with very little frailness, limitations and other physical or mental problems[8,9].

The overall increase of longevity around the world has required a reassessment of the concept of old age in itself. Depending on the social, economic, cultural and ideological context, old age definition has been changing substantially in the past decades. The general sense regarding the concept of old age is now influenced by the way people themselves take concrete action towards their own wellbeing, their lives and their aging processes.

Aging is a dynamic, multifactorial, heterogeneous, irreversible process which is inherent to every human being. Notwithstanding being a natural phenomenon, it is not always captured as an innate reality. The concept allows for imprecisions within the limits of its definition since it is understood according the cultural environment and stratum where it takes place.

Such sociocultural influence provides a diverse meaning and sense to old age as it absorbs conceptualization based on the social imaginary, which brings along stereotypes, myths and preconceptions and could even foster antagonistic perceptions. In some cases, these perceptions are related to life experience and knowledge, whereas in other cases they are related to assumptions such as illness, vulnerability, limitation and/or incapability. In a modern and productive world as we know it, these sociocultural influences tend to promote

behaviors that are adopted by people regardless their level of awareness about them[11,12].

Identifying someone as old differs among gender and social groups. This reality is reflected in public policies, but in practice, one same person or society might display discriminatory behavior even before reaching old age. Under such perspective, the construct that is formed around the idea of old age becomes a product that reflects different imaginaries molded within a particular society. Common sense knowledge allows for the understanding of how people elaborate, transform and interpret old age [11.]

Middle-aged adults are aware of the fact that they are within a transition phase about which the social imaginary is strongly negative and that they influence the construction of social representations. Those constructs about such representations within group interactions build meaning to objects or phenomena prone to be integrated into their social practices. Therefore, there is the generation of behaviors that translate their participation in a set of social relations[13].

Our objective is then to characterize and analyze all elements that contribute to these social representations of middle-aged adults in what refers to their old age.

METHODS

This study is of qualitative descriptive nature. It makes use of the structural approach based on the Social Representation Theory[14]. Two hundred people were participants in this study and they were selected under the following criteria: middle-aged adults (40 to 59 year old) and residents in the *Departamento Lambayeque*. This area comprises three districts: *Chiclayo* (capital), *Ferreñafe* and *Lambayeque*. More specifically, the urban zone of the *Lambayeque* district, in Peru, was the setting for the study. The district hosts two health centers that provide care according the age range of the patient. Moreover, they provide sanitary strategies as well as total primary health care. These urban zones we referred to can count on basic services like electricity, water and sewage systems but they do not have roads, sidewalks or sanitation structure.

Those people in the neighborhood who had cognitive or other problems that could hinder their comprehension in general or their reading ability were not part of the study. These conditions were documented in the clinical history of potential participants and which were read by the researchers so they could select the group of participants. The convenience sample was made of 100 females and 100 males. It is important to mention that the number of participants was the one recommended for the prototype recall analysis needed in research based on the Social Representation structure for verbal data [15].

Data was collected from January to April 2018. Participants were invited to be part of the study when in the waiting room before their medical appointment. After their acceptance to be in the study, an interview was scheduled to happen in their homes. As an average, each interview took 25 to 30 minutes.

Participants responded a questionnaire so personal data could be collected: age, marital status, occupation, education level, number of elderly people living at respondent's home. Likewise, the free word association technique was applied during the session. Such projective technique allows for access to elements that are part of the semantic universe belonging to the represented object in a very spontaneous fashion. Respondents had to write down the first four words that came to mind when they thought of their own old age. Afterwards, they had to circle the word that was more important and explain why so a later interpretation of the responses would be easier to be done.

Data analysis was done with the software *Ensemble de programmes permettant l'analyse des evocations (*EVOC), 2005 version. It receives data and then distributes the recalls in quadrants, taking into consideration the average frequency while presenting the ranges of more or less frequent words. It also figures out the amount of average order of recall, building on a four-quadrant table[14].

Within the left upper corner quadrant are the words forming the probable central nucleus, the most frequent and the most important ones. Those words characterize the representation persistent part, which is more consensual and less sensitive to change due to external contexts or subjects' daily

practices. Such words are directly related to collective memory and the group's history, thus, defining homogeneity[14]. The central nucleus functions are: generating, organizing and stabilizing. From this nucleus, the meaning of other elements are created or transformed. It also determines the links among the meaning of all the elements. It is, therefore, the stabilizer of the whole representation[14].

Within the other quadrants are the peripheral elements of representations, which are more sensitive to changes due to variations in context. Within the left lower quadrant (contrast zone) are the words enunciated by a lower number of subjects, referred as very important ones. On the right upper quadrant are first periphery elements, considered as more relevant, more frequent, but less important. On the right lower quadrant are the second periphery elements, the least frequent and less important ones.

Compliance with ethics principles were guaranteed by this researcher, assistants and members of the thesis committee. All participants signed the consent form voluntarily and were guaranteed anonymity.

RESULTS

The majority of participants were married or living with a companion, 66.5%. Single participants amounted to 24% and widowers amounted to 9.5%. As per occupation, 47.5% are construction workers or small business owners, 26.5% take care of their own homes and 26% are qualified workers on either the technical or the university level. A larger percentage of the group of participants, 74%, mentioned not living with an older adult, whereas, 26% confirmed that they do.

The results related to the applying of the free word association technique generated 800 words, distributed throughout two four-quadrant tables. The distribution by gender shows females in Table 1 and males in Table 2.

Table 1. Four-quadrant table based on the results after the inductor term "my old age" was presented. Responses from a group of 100 middle-aged females. Lambayeque, 2018.

	Central Elements			First periphery elements		
	Range < 2.5			Range > 2.5		
	Recalled Term	Frequency	OME	Recalled Term	Frequency	OME
	Left upper quadrant Central Nucleus			Right upper quadrant First periphery		
≥20	Illness	44	2.409	Concern	29	3
	Family	26	2.472	Fear	28	2.786
	Uselessness	23	2.435			
	Loneliness	31	2.358			
	Sadness	30	2.867			
	Left lower quadrant Contrast elements			Right lower quadrant Second periphery		
	Nostalgia	6	1.667	Abandonment	16	2.625
	Companion	11	2.273	Trust	11	3.364
	Health	14	2.357	Money	14	2.571
	Tranquility	13	2.077	Death	16	2.563
				Protection	12	3
				Quiet life	12	2.75

Source: Report from Evoc software OME (Spanish): Recall average order.

Table 2. Four-quadrant table based on the results after the inductor term "my old age" was presented. Responses from a group of 100 middle-aged males. Lambayeque, 2018.

	Central Elements			First periphery elements		
	Range < 2.5			Range > 2.5		
	Recalled term	Frequency	OME	Recalled term	Frequency	OME
	Left upper quadrant Central nucleus			Right upper quadrant First periphery		
≥20	Illness	55	2.418	Death	22	2.727
	Family	45	2.444	Concern	22	2.4545
	Uselessness	24	2.417	Sadness	22	2.5
	Protection	21	2.476			
	Loneliness	26	2.423			
	Fear	24	2.458			
	Left lower quadrant Contrast elements			Right lower quadrant Second periphery		
	Self-care	9	2	Abandonment	11	2.727
	Money	8	2.25	Strength	19	2.579
	Health	15	2.133	No work	14	2.786
	Quiet life	8	2.4	Nostalgia	9	2.889
				Companion	12	3
				Tranquility	15	2.667

Source: Report from Evoc software. OME (Spanish): Recall average order.

For women, the meaning of old age is strongly evidenced by negative meanings, indicated by words placed in the left upper quadrant. Those words characterize a possible representation central nucleus.

The word *illness* presents one functional dimension of human body and denotes the aging process vulnerability. The element *uselessness* reveals the stigma that still exists around the phenomenon. It triggers feelings of *sadness* and *loneliness*, thus, indicating that women have a crystalized negative representation of old age. Such elements might be connected to negative experiences lived in society, within own family and/or with an elderly adult with whom they share ties of kinship.

Among the terms within the first periphery, words like *concern* and *fear* were found. Within the second periphery, among contrast elements, we see the reinforcement of a negative image, memories of old age as *abandonment*, *death* and *nostalgia*. However, at the same time, we found elements that could trigger positive functionalities and attitudes towards old age: *protection, money, trust* and *quiet life*.

Table 2 shows a uniform distribution of the elements in each quadrant, very similar to the female group. Consequently, in the probable central nucleus we see the words *illness* and *loneliness*. The main difference between results is that in the women's group the word *sadness* is placed in the right upper quadrant. However, due to its value (2.5) close to the OME value (2.5), this word could be put together the central nucleus, which reinforces the permanent part of the representation.

As part of the central nucleus, the recall word *uselessness* could be related to a crisis during a loss of role, exclusion from the work group or loss of any physical capability that affected social linkage. Within the male group, the word *protection* is placed as a central element. Even though it is less frequent, it clearly shows one of the expected roles within a male group. Such situation, in many cases, highlights

the social pressure males suffer in order to continue in their social role of breadwinner within the family.

It is important to stress that the representations by males denote a greater negativity since in the first periphery we see *death* and *concern* as elements, which corroborates the hypothesis of an old age negative representation for males. This is probably due to their social responsibility of protecting their families and, likewise, they feel vulnerable to the threat of an illness that can cause death. All these elements that revolve around the social environment lead middle-aged adults to consider old age as a period and a process of losses. Certainly, this represents a deep-rooted and unfavorable social imaginary, which interprets old age in a negative way.

The elements within the second periphery disclose norms developed within the family and are translated by the words *abandonment*, *no work*, *and nostalgia*. At the same time, the second periphery presents contrast elements like *strength*, *companion* and *tranquility*. In both cases, it is possible to relate to feelings and attitudes belonging to family dynamics. Within the contrast zone, the elements *health*, *self-care* and *quiet life* come up in opposition to *illness* demonstrating proactive and positive behavior towards old age.

The structure of old age representation shows itself similar among males and females, except for the element *protection*, which shows up only within the central nucleus of males. The definition of centrality in both groups is evidenced by *uselessness* and *loneliness*, but especially by *illness* and *family*. This is due to their condition of being generating elements, which implies an organization apart from the other elements. Four dimensions are then defined: functional, evaluative, normative and social.

The functional dimension is an outcome of the words *health* and *illness*. Such dimension is related to the functionality of human body, considered vulnerable to events that might lead to *death*. Therefore, acknowledgment and sensitizing take place because this kind of event affects self and family as well as gives space to *fear*.

The evaluative dimension emerged from the word *family*, taken as central element in the representation of males and females. The word *family* also generates the normative dimension due to the dynamics of cohabitating, where socio-affective and ideological elements are in place in a positive or negative fashion. Positive practices are highlighted in the elements *companion*, *tranquility trust, protection, quiet life* and *strength*. Whereas negative practices are established through the elements *loneliness*, *sadness*, *nostalgia*, *abandonment* and *concern*.

Finally, the analysis part will be enriched by the social dimension, seen as the fulfillment of material and symbolic needs in the core of family and society. This dimension comprises the element *uselessness*, directly tied to the situation of *no work* and the limiting situation of earning or not earning *money*, determinant to the level of *protection* and *care* towards family and self.

DISCUSSSION

From the total population of Peru, 50.9% are made of females, even though this percentage might vary depending on the group age. Up to 44 years old, this percentage might be slightly below male population in every age group. From 45 years old on, the percentage increases and stays like that until old age[17].

In Biological Sciences, there is the belief that development is related to growth and aging is related to deterioration. Social and Behavioral Sciences reject the idea that aging is an indicator of loss and deterioration. To those sciences, aging is an active process that takes place throughout the course of life[1] and old age is another stage for development and a chance for renewing social, cultural and subjective experiences. It is also when earlier events influence later experience and trajectory.

This approach could bring many benefits to this specific age group, who is going through a challenging phase, if it triggers new behaviors and disposition to intervene in the framework of certain conditions. Moreover, if these changes happen at an earlier age, chances are that better results and cumulative results can be reached during the old age stage[19].

The old age representation based on negative elements like pain, illnesses and overall decline is a consequence, nonetheless it reinforces preconceptions and stereotypes which, when supported by the epidemiological reality of older adults, encourage the idea that many will be ill when reaching old age. Earlier, responses to a questionnaire by different age groups showed that males represent aging in a negative manner, bringing up constructs like illnesses and disabilities. They also associated this phase with retirement which, to them, would be the period of life where there would be losses related to health, social contacts and physical ability[20]. Differently, old age has also been considered the "best age", a gratifying period with potential to allow for the fulfillment of plans towards happiness and gains that deconstruct its association with illnesses, death and inactivity [21].

Aging is a phenomenon influenced by the course of life, which is impacted by various factors[7]. Research results emphasize ambivalent posture towards old age, with losses and gains[20-22]. Within such context, illnesses are not only a personal biological condition, but also a social and cultural construct, which induces each person to experience it according to one's individual characteristics and sociocultural construction. The perception of loss and closeness to illness is a representation owned by older adults as well as younger people[23-25], who also carry a negative idea about the aging process[23], loss of youth, vigor and strength.

The only few studies developed together with middle-aged adults have focused on losses along the process, identifying almost exclusively a stage marked by physical decline, dependency, loss and lack of social role. If those representations are not transformed, young people and adults will have very few chances for an active aging process in their future. If we think about middle-aged adults, who are naturally approaching that stage, such negative future is an expected reality towards self, family and society[25]. Hence, public policies geared towards middle-aged adults and which promote health in general have the potential to change such representations.

Within the negative context, the relationship which revolves around the expected reality is felt and reacted upon based on the context where older people are, which might involve the presence of parents, family members and/or neighbors who generally live with some sort of chronic disease. The closeness to this specific context leads to stereotypical images of ill elderly people. Consequently, middle-aged adults absorb the entire emotional and financial load tied to the elderly figures as they witness decline and death. The representation of their own old age stage is then reinforced when facing events linked to death and awareness of finitude.

Family is another element that rules the core of old age representations during the middle age stage. What is peculiar here is that middle-aged adults are in between two other generations (sandwich generation), being the link between aging parents and growing children. Progressively those children will be gaining independence but adults will still be pressured to care for aging parents who need attention, care and financial support.

To be placed between two generations and having twice the amount of responsibility makes the adult of the family to be forgotten. Almost no one think about this adult and their needs. It is assumed that middle age comes and develops without problems and that there is stability, fulfilment and positive reference.

Middle-aged adults feel the need to respond to social norms which determine that they have to have a companion and a quiet life as well as have to protect their own family members. In general, people try to meet those social requirements and feel that they have failed if they are not on top of those norms.

The so-called social clock is then questioned[28] because it presents a cultural recipe which requires obedience to a strict linear development model that ratifies old age as a sociocultural construct supported by social preconceptions. Representations forward group culture, language, logic, behaviors and practices towards a social object. Likewise, they rule our relationship with the world and others, steering and organizing social conduct and communication[29].

It would be ideal to rescue beliefs that praise an imaginary of productivity, maturity, wisdom and tranquility since reality would be organized

according to those constructs. Family becomes the core of human development and it is not exempt from negative or positive influences. It is within families that the most important dynamics and complex transitions towards old age take place. These dynamics and transitions bring to light all that we inherit when we are born, all that we take along our lives and all that we construct while living in society. In the process, we learn behaviors from what we absorb from the world and from the reality that is presented to us[3,28].

Due to those typical middle-aged episodes, this phase sets the stage for notorious disposition for the so-called mid-life crises. Such crises might trigger conflictive and complex situations among family members who might be experiencing the impact generated by the old age stage of a member. We are not isolated and in a social vacuum as we share our world with others who might be our support. Therefore, within the sharing of views and behaviors there might be conflict or not. Even so, this is the way we learn to understand, administer and cope with life experiences. Hence, this is why representations are social and so important in daily life[23].

Within this daily practice with social representations, middle-aged adults interpret, make decisions and eventually come across negative elements – loneliness, concerns, sadness or nostalgia – related to old age while trying to balance their lives. As such, loneliness is a present subjective experience, perceived as negative and that normally comes along sadness, bad temper or anxiety. Men keep a more objective relation with their surroundings, whereas women tend to be more affectionate and expressive[31].

Difficulty in accepting changes in aging parents and the feeling of being overwhelmed and pressured might trigger other negative states: anger, impotency, guilt and distress, which if expressed direct or indirectly can hinder the quality of relationships. If the middle-aged adult does not take responsibility towards leading their life in a gratifying fashion, they will have to cope with emptiness or abandonment as well as will have their social, family or couple lives affected.

Now, let us have a look at the social dimension. Differently from the other dimensions where the central elements were similar for both males and females, middle-aged males highlighted the term *protection*. It is a social norm the fact that males provide financial support as well as material and symbolic necessities to the family through productive work. Such representations become something natural through discourse, vocabulary or media images. They socially permeate thoughts, expressions and behavior and, consequently, conduct pressure towards social compliance.

Men and women perceive the aging process differently. On the one hand, women prioritize family social bonding. Men represent their old age beyond the individual dimension. They worry about the other members of the family and hope to be able to be the financial, material and structural provider for their families[32-34]. Society has assigned them the roles of protector, financial provider, and strong person instead of displayer of feelings. With the approaching of old age, they feel they might not be able to provide anymore and that protagonism and social position are lost.

According to cultural patterns, this absence of social roles make them feel symbolically useless and frustrated. Here we have the negative objectifying of old age, linked to the self-perception of useless and not able to protect. In this study, these beliefs, ideas and images construct the representation nucleus of old age for middle-aged males.

One aspect that should be brought up is that results showed the absence of the word *health* in the representations of both groups. That *per se* reinforces a representation of aging as a loss process, health being replaced by illness. It would be necessary, though, to expand this study to other social groups in order to investigate if this scenario is a trace of the social representations of this group, middle-aged adults who live in a marginal urban area or if is a social trace of old age.

The fact that the word *health* did not show up in the recalls could indicate a silent area of social representations. That is prone to happen when the object of a study involves moral values or social norms within a specific group. What respondents say might be what is politically correct or socially expected. However, the absence of such important

term to educate public policies towards proper aging deserves the expansion of research techniques through the replacement and displacement of the participant from the normative context which poses pressure[35]. It would be possible to weigh if the word *health* is a non-normative term.

The limitations of this study revolve around methodological options for the investigation object and the chosen field, the Lambayeque district periphery. Expanding this study to other zones will allow for results related to other personal and social profiles. In doing so, there will be contribution to a more ample debate about old age Social Representations and, consequently, about public policies.

CONCLUSION

The representation of old age was proven negative as it was supported by elements like *illness*, *uselessness* and *loneliness*. *Protection* and *fear* are present in the Central Nucleus of males' representations, whereas in women's *sadness* was found. All those elements are capable of influencing the way in which people hope to age and how they invest or not on personal care. Depending on how a person faces old age during their life, this person will chose the meanings they want to give to it. Being aware of the fact that middle age is a challenging stage due to the many expectations towards the future, while assuming a positive conduct about the aging process as early as possible, will bring better outcomes when old age actually comes.

Studies of Social Representation contribute to reveal the ideas and thoughts of social groups as well as their derived actions. Because of such studies, it is possible to add to the debates promoted by Geriatrics and Gerontology about proposals for strategies and actions that could feed public policies oriented towards aging. Health promotion policies that highlight self-care and communicate a positive and autonomous image of old age can contribute to reconfigure such representations.

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Older adults undergoing home enteral nutrition therapy: integration of national public policy and municipal programs

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Abstract

Objective: to verify if national public policies and municipal programs contain elements that contribute to ensure the Human Right to Adequate Food (HRAF) of older adults undergoing home enteral nutrition therapy (HENT) and to propose the integration of these elements. *Method:* a qualitative study was carried out based on the content analysis of the documents of the National Policy for Older Adults (or PNI), the National Policy for the Health of Older Adults (or PNSPI) and the National Food and Nutrition Policy (or PNAN). Analysis of the relationships (co-occurrences) in programs of the 29 cities of the 2nd regional health region of Paraná to provide care for people with special dietary needs (SDN), such as older adults undergoing HENT, was also carried out. For the analysis of the relationships, the keywords *older adult* and *right* were used. Furthermore, the integration of national public policies and municipal programs was proposed. *Results:* the PNI, PNSPI and PNAN contain converging principles, guidelines and actions, but they are not fully integrated into the programs. Only seven cities with programs that aimed to organize care involving SDN were identified, documented in five protocols and two decrees. A co-occurrence was verified in three of the analyzed documents, but a relationship between the keywords *older adult* and *right* was not verified in the protocols and decrees. In the integration proposal, a network was described, based around the goal of reaching the center, which represents the HRAF for older adults undergoing HENT. *Conclusion:* national public policies contain elements to ensure the HRAF of older adults undergoing HENT, but the municipal programs do not include all these elements. A proposal to integrate the elements was created.

Keywords: Public Policy. Health of the Elderly. Enteral Nutrition. Homebound Persons. Program.

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INTRODUCTION

Special dietary needs occur due to metabolic or physiological disorders, either temporary or permanent, which cause alterations in the biological use of nutrients or the food consumption pathway. Enteral nutrition is one type of nutritional therapy (NT), and is available at every health care point in the Health Care Network (HCN) of the Brazilian National Health Service (or SUS), including Primary Care (PC) and home care[1,2].

Home enteral nutrition therapy (HENT) can be recommended for clinically stable individuals at nutritional risk or suffering malnutrition who are unable to meet their nutritional needs through normal food intake, but have a functioning gastrointestinal tract. The goal of HENT is to improve or maintain nutritional status and functional capacity, as well as to increase quality of life[1,3,4].

A greater frequency of older adults undergoing HENT has been observed in the last twenty years due to the high prevalence of chronic diseases, such as neoplasms and neurological diseases[3,4]. In the SUS, the organization and provision of care related to food and nutrition in cases of special dietary needs (SDN) and the implementation of Food and Nutritional Security (FNS), with the aim to guaranteeing the Human Right to Adequate Food (HRAF), are guided by the National Food and Nutrition Policy (or PNAN). In addition to the PNAN, other public policies can contribute to ensuring the right to health and the HRAF of individuals, especially for older adults undergoing HENT, such as the National Policy for Older Adults (or PNI) and the National Policy for the Health of Older Adults (or PNSPI)[1,2,5-7]. Different policies must be adopted by public authorities to guarantee FNS, understood as the right of individuals, including specific population groups, to regular and permanent access to quality food, in sufficient quantities, without their access to other essential needs being compromised, with the aim of promoting health and nutrition[6].

Thus, actions aimed at ensuring the FNS of older adults with SDN and undergoing HENT must consider the specific characteristics of this group. Adequate food, which is a fundamental right (HRAF)[6], can be guaranteed by access to the foods required for the preparation of a diet administered via tube or commercial formulas for enteral nutrition[3]. In this sense, policies, such as the PNAN[1], PNI[5] and PNSPI[7], and related programs can collaborate both in isolation and in an integrated manner to guarantee the HRAF of older adults undergoing HENT.

Public policies can be implemented through programs. In Brazil, municipal districts can implement such programs aimed at the nutritional care of people with SDN, including older adults undergoing HENT. However, it is important to verify the extent to which these policies and programs have registered a specific concern for the rights of older adults and to propose the integration of their actions. Therefore, the objective of this study was to verify if national public policies and municipal programs have elements that contribute to guarantee the HRAF of older adults undergoing HENT, and propose the integration of these elements.

METHOD

A qualitative study was carried out, employing the document analysis tool. The documents listed for the production of the data were the PNI, PNSPI and PNAN, as well as programs that implement the PNAN in municipal districts in Paraná. The protocols or regulations referring to programs of the municipal districts of the 2nd regional health department of Paraná were analyzed, according to the divisions established by the State Health Department. In order to identify the provision of a program aimed at the nutritional care of people with SDN, a search was performed on a search engine and the official websites of the 29 municipal districts of the 2nd regional health department of Paraná between October 15th and 19th, 2019.

For searches on the electronic search site, the name of the municipal district was used together with the keywords: special food or special diets or nutritional formulas or enteral nutrition or nutritional therapy. On the websites of the Municipal Councils, a search by hyperlink was carried out to access the pages of the Municipal Health Departments (MHD), which, when available, were used to search for a

program, program protocol, program regulations or correspondent. The search tool was used and the keywords: food, diet, formula, nutrition, nutritional, home or home-based were inserted.

The analysis of the content of the PNl, PNSPI and PNAN was carried out to qualitatively evaluate the information. The content analysis technique considers that everything that is written is suitable for analysis in order to obtain indicators that allow the inference of knowledge of the conditions of production/reception of the messages in question[8]. The analysis technique considered fragments that contained the elements necessary to ensure the HRAF of older adults undergoing HENT, which were extracted from the text.

The technique used to analyze the content of the protocols and regulations was the analysis of relationships, based on the analysis of co-occurrences approach. The relationships between the parts of a message were extracted from the text of the documents. The procedural sequence for co-occurrence analysis was: (a) choice of keyword and categorization by theme; (b) cutting of text into fragments; (c) presence or absence of keyword in each text fragment; (d) calculation of co-occurrences; (e) representation and interpretation of results[8].

The keywords chosen were: *older adult* and *right*. The thematic categories of the study were established from the keywords. The text was cut in accordance with the presentation format of the document. For the protocols, two parts were considered for analysis: introduction and development. For regulations, the preliminary provisions and general provisions were considered. The co-occurrences were demonstrated quantitatively through the frequency of fragments that contained the two relevant terms. The qualitative interpretation of the results was performed considering the context, the document construction process and the definition of FNS and HRAF.

Based on the results obtained through documentary analysis, a proposal was developed to integrate the national policies and municipal programs. The extraction of the elements from the documents was carried out through content analysis using the older adult population as a guide and the definitions of the FNS and HRAF. This made it possible to locate and contextualize the information contained in the documents. The integration proposal was elaborated using the *Visual Paradigm Online*® program, in which the convergent elements identified in the documents were considered.

The documents referring to the programs are considered publicly accessible and their analysis does not require approval by the Ethics Committee for Research Involving Human Beings, according to National Health Council Resolution no. 510/2016[9].

RESULTS

The analysis of the content of the PNI, PNSPI and PNAN documents revealed converging elements in policies, such as the prioritization of health care in PC, including home care (HC), social participation, the continuous education of health professionals, articulation between different sectors and the participation of entities of the federation in the allocation of resources[1,5,7]. The integration of these elements, which can be implemented through programs, can contribute to ensuring the HRAF of older adults undergoing HENT.

Programs designed to care for people with SDN can be national, state or municipal. Most often, municipal districts are responsible for formulating and executing these programs. In the 2nd regional health department of Paraná, among the 29 municipal districts, seven (N=7; 24.1%) were identified as possessing a program aimed at organizing care for people with SDN. For five municipal districts, program protocols were identified, used to organize nutritional care for SDN in PC and HC, presented in the form of technical materials that guide the work processes of teams, while for two municipal districts, guidelines were identified, presented in the form of municipal decrees to establish programs, but which did not provide a detailed description of the team's work processes.

Through the analysis of the content of the protocols (n=05), it was found that only one mentioned the keyword *older adult* in its introduction, but all mentioned it in their development sections. The keyword *right* was mentioned by three protocols in the introduction and three in the development sections. For the protocols,

there was no relationship between the keywords. The analysis of the content of the decrees showed that in the preliminary provisions none mentioned the keyword *older adult*, the same result obtained for the general provisions, while the keyword *right* was observed in the preliminary provisions of one decree and in the general provisions of another. No relationship between the keywords was verified in the decrees. The number of citations of the keywords in the analyzed documents can be seen in Table 1.

Table 1. Year of implementation of the program or publication of the document, objectives of the programs, number of keywords and text fragments of the protocols and decrees of specific programs for the nutritional care of people with special dietary needs in the municipal districts of the 2nd regional health department of Paraná (N = 07). Curitiba, Paraná, 2020.

Year	Objectives	Document	Keywords	Fragments
2006	Promote nutritional and health care	Protocol	Older adult: Eight Right: Zero	... the general nutritional recommendations used in (program name) for the definition of the nutritional needs of children, adolescents, adults and older adults included in the program
2009	Monitor nutritional status and provide manufactured formulas for special purposes	Protocol	Older adult: Three Right: Three	Formula/Standard Supplement Adult/Older Adult ...adequate food is a fundamental human right, inherent to the dignity of the person and indispensable for the realization of the rights enshrined in the Federal Constitution...
2014	Meet requests for special diets and milks and monitor nutritional status	Protocol	Older adult: One Right: Three	Breastfeeding has a direct and indirect influence on the control of diseases such as hypertension, diabetes and obesity (health of the older adult) ... in this way it does not mean that the SUS should treat everyone equally, but rather respect the rights of everyone, according to their differences
2015	Provide/Dispense special diets, supplements/ food modules and infant formulas and perform patient follow-ups	Protocol	Older adult: Three Right: Two	Hypercaloric diet - For adult and older adult patients in related clinical conditions... ... of the Federal Constitution, states that "health is the right of all and the duty of the State, guaranteed through social and economic policies aimed at reducing the risk of disease and other diseases and access ...
2017	Contribute to assessment, guidance, clinical and nutritional monitoring and the provision of infant formulas, industrialized enteral diets, dietary supplements and nutrient modules.	Decree	Older adult: Zero Right: Two	Considering that adequate food is a basic human right, indispensable to ensure the provision of the rights enshrined in the Federal Constitution, it is up to the government to adopt policies and actions that respect, protect, promote and provide the human right to adequate and nutritional food for the population
2019	Assess the need for the use of food formulas and monitor and evaluate dietary treatment	Decree	Older adult: Zero Right: One	Registration for the receipt of Infant Formulas and Oral and Enteral Food Supplements, the products subject to this Program, will be evaluated by the Nutritional Support Commission, with the following categories of users having the right to register: Infants... premature babies...children and adults...
2019	Provide infant formulas, enteral diets and dietary supplements/ modules	Protocol	Older adult: Three Right: Six	Older patients (≥ 60 years old) will have an individual assessment with malnutrition considered to be BMI below 22 kg/m^2 Therefore, all citizens, equally, must have their rights to health guaranteed by the State

Created by the authors. Information for the chart obtained through content analysis of the documents (protocols and decrees) of the municipal programs for nutritional care for people with special food needs.

From the analysis of the content of the protocols and decrees, it was observed that the keyword *older adult* was mentioned up to eight times, while the keyword *right* was mentioned up to six times (Table 1). Co-occurrence was verified in three of the analyzed documents. The keyword *older adult* was identified as associated with nutritional assessment, nutritional recommendations, description of commercial formulas for enteral nutrition, inclusion criteria for dispensing commercial formulas for enteral nutrition and for remaining in the program. The keyword *right*, meanwhile, was associated with life, health and adequate food, information, registration in the program for dispensing commercial formulas for enteral nutrition and equity.

From the analysis of the number of citations of the keyword *right*, it was observed that the guarantee of the HRAF of people with SDN is not referred to in the objectives of the programs. Although not included in the objectives, food and nutrition were mentioned as determinants and conditions of health, as well as basic requirements for its promotion and protection. In addition, the allusion to health as a right for all and a duty of the State was included in the text of three of the documents analyzed (Table 1).

The existence or absence of government actions to ensure the right to health and food were observed, according to the manner in which the protocols and decrees were systematized. As for the rights of the older adults, no document had a specific flow or inclusion criteria for people over 60 years of age. In the flows and criteria, the standardization of guidelines and conduct for the dispensing of products, such as infant formulas, commercial formulas for enteral nutrition, supplements and modules, is notable. Thus, the prioritization of guidelines for the organization of the supply of products can be seen, while the establishment of guidelines for nutritional care is absent.

The analysis of the documents indicated that the programs include criteria for the supply of commercial formulas for HENT, as well as recommendations for diets prepared with food for HENT, combined with nutritional guidance and monitoring. The responsibility for purchasing the necessary food for the preparation of the diet remains with the user undergoing HENT and their family, and non-adherence to the recommendation of the diet with food does not include the provision of commercial formula by the municipal district.

For the acquisition of food and preparation of the diet, a variety of resources are needed, among which are financial resources. One of the protocols analyzed contained the recommendation that in cases of primary malnutrition, health service users and family members should seek the Municipal Supply Department for more information about the actions provided, such as the provision of FNS equipment. This is notable for being an intersectoral action that could help low-income families.

The importance of knowing the socioeconomic situation of users was observed in most of the documents analyzed. In terms of the criteria for inclusion and remaining in the program, family income appeared in three of the documents. In one program, family income was not considered. However, in two programs, the inclusion criteria took family income into account. According to the protocol and decree, to be included in the program, the user must have a family income of up to three times the minimum wage.

Considering the situations of social vulnerability and the need to ensure the FNS of people with SDN, this study proposes the integration of different policies and programs to guarantee the HRAF of elderly people undergoing HENT. The proposal presented in Figure 1 demonstrates the integration of the PNI, PNSPI, PNAN and specific programs for the nutritional care of people with SDN from seven municipalities in the 2nd regional health region of Paraná.

The elaboration of the integration proposal included 28 elements extracted from the documents submitted to content analysis. Four elements were extracted from the PNI, nine from the PNSI, twelve from the PNAN and three from the municipal programs.

The integration of these elements extracted from public policies and municipal programs can contribute to ensuring the HRAF of elderly people undergoing HENT. Interlocution was identified

in 24 of the elements, notably those that refer to integrated care, access to health, respect for the user's autonomy and the continuous education of health professionals.

There was little integration of the PNI, PNSPI and PNAN with the protocols and decrees. Following the identification of the limited incorporation of the principles, guidelines, objectives and actions of these public policies into the municipal programs, a proposal for the integration of their elements was elaborated, also aimed at the municipal programs analyzed, with a view to ensuring the HRAF of elderly people undergoing HENT.

The integration of different policies and programs was represented graphically by a network. The principles, guidelines, objectives and actions of the PNI, PNSPI, PNAN and the municipal programs were placed in circles, which are linked with the purpose of attaining the center, representing the HRAF of older adults undergoing HENT. Thus, in the presentation of the network integration, the necessary elements to ensure the HRAF of older adults undergoing HENT can be observed.

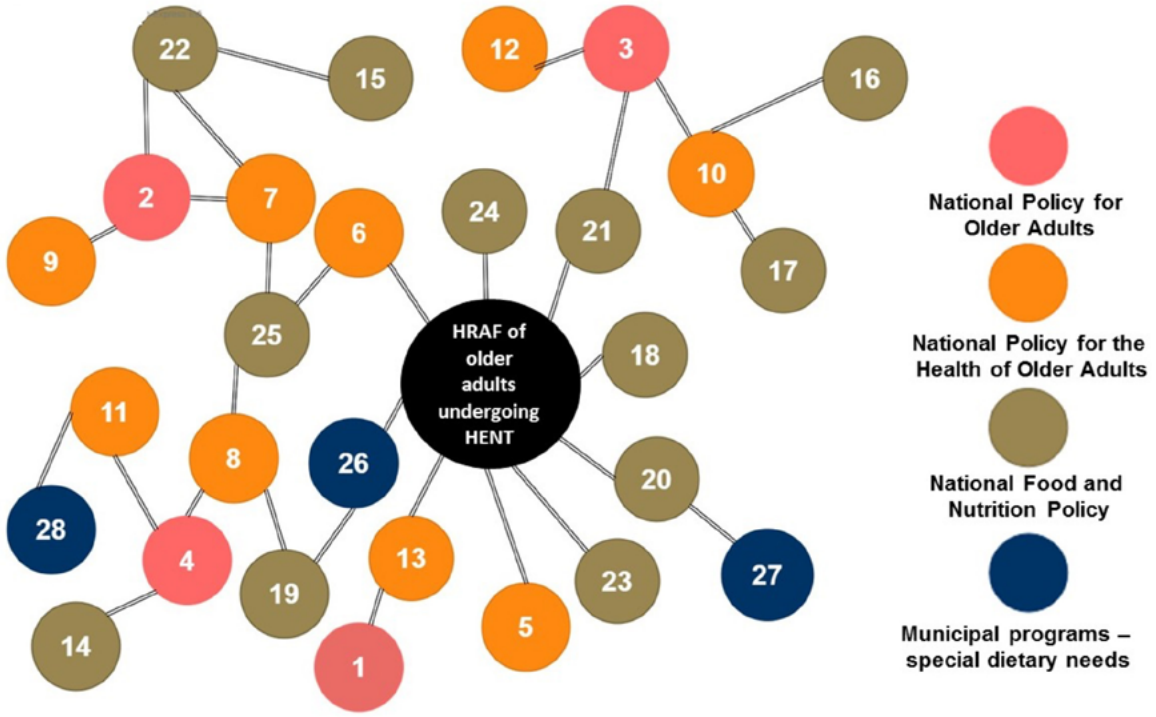

Figure 1. Proposal for the integration of the National Policy for Older Adults, the National Policy for the Health of Older Adults, the National Food and Nutrition Policy and the municipal programs of care for special dietary needs to guarantee the Human Right to Adequate Food (HRAF) of older adults undergoing Home Enteral Nutritional Therapy (HENT). Curitiba, Paraná, 2020.

Key: HRAF: Human Right To Adequate Food; HENT: Home Enteral Nutritional Therapy; 1. Duty of family, society and the State to ensure the rights of citizenship; 2. Human resources training; 3. Participation of older adult in policy cycle; 4. Health care for older adults; 5. Line of care and bidirectional flows - increase the quality and resolutive capacity of Primary Care; 6. Adequate physical infrastructure and supplies; 7. Technical skills; 8. Prevention, rehabilitation and recovery actions. Prevention and early intervention rather than curative interventions; 9. Multiprofessional care; 10. Wishes of older adults and their family; 11. Specific care for frail older adults; 12. Participation and strengthening of social control; 13. Social Security, Unified Social Assistance and Justice and Human Rights System; 14. Principles of National Health Service; 15. Food as an element of humanization; 16. Respect for diversity and food culture; 17. Strengthening of autonomy; 18. Social determination and the interdisciplinary and intersectoral nature of food and nutrition; 19. Organization of Nutritional Care, promotion of adequate and healthy food, food and nutritional surveillance. 20. Management of Food and Nutrition Actions; 21.Participation and Social Control; 22. Workforce Training; 23. Food Control and Regulation; 24. Research, innovation and knowledge in food and nutrition; 25. Ministry of Health, Municipal and State (including the Federal District) Health Departments; 26. Promote nutritional care and general health care for people with special dietary needs; 27. Provision of commercial formulas for enteral nutrition; 28. Conducting home visits

Source: authors.

DISCUSSION

The present study identified elements of the PNI, PNSPI, PNAN and municipal programs and proposed the integration of national public policies and municipal programs to ensure the provision of FNS in order to guarantee the HRAF of older adults undergoing HENT. The PNI, PNSPI and PNAN have converging elements which consider the rights of older adults. In the protocols and decrees of the municipal programs, fewer elements that contribute to guaranteeing the HRAF of older adults undergoing HENT were extracted than were taken from the PNSPI and PNAN, while there was also a low frequency of citation of the keywords *older adult* and *right*.

In the municipal programs, greater emphasis was placed on clinical conditions and diseases that affect children. The older adults and their possibly specific SDN were not explicitly mentioned in the texts, nor was there any mention of the Statute for the Elderly or the PNSPI. However, chronic non-communicable diseases (NCDs) commonly found in the population group aged over 60 years were mentioned, as well as the recommendation of NT due to their symptoms or sequelae.

The Ministry of Health recommends that each location (municipal location or service) must define its own care protocol for SDN, as it contributes to the efficiency and effectiveness of health management, in addition to functioning as a regulatory and equity tool in the dispensing of supplies[2]. The actions for the nutritional care of people with SDN, established through programs, are described in greater detail in the protocols than in the decrees.

The protocols provide transparency to the inclusion and exclusion criteria, as well as the line and flow of care, with a view to guaranteeing respect for the principles of the SUS and the reach of the HRAF. However, the protocols analyzed in the present study did not consider the circumstances of senescence and senility and the specific rights of the older adults when organizing the standardization of home care.

Most older adults in Brazil reside in private households, with their spouse, families or alone[10]. Older adults have specific care needs, which are due to the characteristics of the presentation, installation and outcome of health problems. Considering the high prevalence of NCDs in the Brazilian population aged over 60, as well as their sequelae, functional limitations and disabilities, the provision of health care, including HENT, at home may be necessary[7,11]. In this sense, the increase in the number of older adults undergoing HENT has been demonstrated by different studies carried out in Brazil and other countries[3,4].

In the international scenario, older Americans and Europeans have reported the need for more information about their health conditions and for clearer communication about proposed diagnoses and treatments[12]. As part of the communication process, health professionals must train informal caregivers to provide health care at home.

Support for informal caregivers for training in home care for older adults, especially after hospital discharge, can be carried out by telephone contact with nursing professionals to identify needs, provide guidance and information and answer questions about existing resources[13]. In the case of HENT care, in addition to training related to technical care, programs and their protocols must include periodic monitoring of older adults with a view to providing security and comfort through the establishing of a bond.

Bonding and effective communication between health service users and professionals help to improve health decision making. In communication, the health professional should avoid technical terms, divide information into stages and assess the understanding of users[14]. In PC, a bond is a condition for the proper functioning of the service in terms of accountability and the longitudinality of care, in addition to improving adherence to therapy and encouraging home visits[15]. During home visits, the discharge guidelines can be reinforced or reformulated, especially with reference to HENT[16].

For communication between health professionals and HENT patients, their caregivers and family members, professionals require technical and scientific training. In accordance with the Guidelines of the European Society for Clinical Nutrition and Metabolism (ESPEN) on HENT, all healthcare

professionals directly involved in patient care must receive education and training relevant to their roles on the different aspects related to HENT[3]. Staff education and training should be among the goals of health services.

An example of the training in HENT of nutritionists working in a nutritional care program for SDN was the hiring of a company specialized in courses and in the preparation of manuals/protocols by a MHD of the municipal districts included in this study. From the nutritional care manual, the municipal protocol was constructed. As part of the professional development strategy, a partnership was also formed with a university, for continuous education. However, training in specific care for older adults was not mentioned[17], even though it is recommended by the Statute for Older Adults[18].

In this sense, it is essential that health professionals are properly trained to provide health care for the older population. However, in order to overcome the logic of training, improvements and updates, Continuous Education in Health (CEH) must also be provided. CEH can occur in home visits, during case discussions, in operational groups, in the informal work routine and via the matrix [19].

Matrix support in health aims to ensure specialized assistance and technical and pedagogical support to the reference teams. The implementation process of Matrix Support in the Health of Older Adults in the city of Vitória, Espírito Santo, was reported in the study by Madureira and Bissoli[20], which showed that matrix support collaborated in the creation of flows and the organization of the HCN for the older population, in addition to increasing the safety of the PC teams in dealing with and resolving cases, improving care for older adults and providing interdisciplinary discussion[20].

Teamwork is interdisciplinary and multiprofessional and must ensure standardized and coordinated care for all people who need HENT[3]. The absence of a professional in a team hinders integral care in PC, compromising the resolvability of the care provided[3,21]. In this sense, since the integral health care for older adults in the SUS is guaranteed by the Statute for the Elderly[18], the nutritionist is key to achieving it.

The role of the nutritionist has been considered a reference in the process of matrix-based strategies in Food and Nutrition and can contribute to the organization of PC. Among the actions of nutritionists are those aimed at the training of teams with a focus on NCDs and promoting health at all stages of life. In addition, the actions of Food and Nutrition that seek integrality need to go beyond the biological and causal dimension[22,23], including in care involving HENT.

The act of eating through HENT is not only biological, with the sole objective of meeting nutritional needs, but is also socio-cultural. In this sense, the social characteristics, the food culture, the preferences and desires of older adults and the family, as well as the often stable clinical situation of the individual undergoing HENT are important for decision-making regarding health care and nutrition interventions in this treatment mode[24] and should be considered in programs aimed at the nutritional care of people with SDN.

The present study demonstrated that the municipal programs analyzed prioritize the use of food-based diets for HENT, unlike European guidelines, which claim that diets with food are less effective and less safe than commercial formulas[3]. However, the recommendation of the ESPEN emphasizes the biological dimension, without considering the social, cultural and economic aspects, which also form part of the effectiveness of the FNS. The protocols and decrees analyzed in the present study also prioritized the biological and technical aspects of food.

The principles of FNS should be considered in home-based health care models. To ensure the HRAF, the cultural meanings of diet for older adults undergoing HENT and their families and socioeconomic aspects must be respected in order to provide physical, psychological and social well-being, as well as quality of life[24], which should be evaluated periodically[3].

Different factors can influence the quality of life of people undergoing HENT, such as their clinical conditions and the duration of the administration of enteral nutrition. It has, however, been shown that enteral nutrition can improve the quality of life[25].

In order for the goal of maintaining or improving quality of life to be achieved, the early onset of NT is recommended, as soon as the nutritional risk is identified. Nutritional screening should be routinely implemented for the early detection of the risk of malnutrition. In HC, specific tools for the nutritional screening of older adults should be used[26], something which was not considered in the programs analyzed.

After nutritional screening, the nutritional assessment of older adults can be performed. Tavares et al.[27] highlighted the challenges for diagnosing and monitoring the nutritional status of people over 60 in PC. The procedures performed are those recommended by the Food and Nutrition Surveillance System, which emphasize the use of anthropometric measures. Other indicators of nutritional status should be used by health professionals in a critical and integrated manner, considering the specific characteristics of older adults[27].

Still, such individual characteristics of older adults undergoing HENT can make it difficult to apply techniques for nutritional assessment, especially those for anthropometric and body composition assessment, as it is common for older adults to be bedridden or suffer difficulties with mobility. These conditions increase the vulnerability of older adults, together with the consideration that vulnerable older adults have greater difficulty in performing activities of daily living[28].

Vulnerability is also associated with Food and Nutrition Insecurity (FNI). Thieme et al.[29] found that 50% of the homes of people undergoing HENT were classified as suffering FNI. To verify the FNI of households where older adults undergoing HENT live, validated instruments can be used, such as the Brazilian Food Insecurity Scale, which can be applied by health professionals in order to action other sectors.

Therefore, intersectoral articulation between the area of FNS and health is necessary. PNAN is considered an articulator between the two fields and the organization of nutritional care within the scope of the SUS. However, the predominance of the biomedical model is the main impediment to the effectiveness of the PNAN. To consolidate intersectoral articulation, strategies that go beyond sectoral programs[30] must be formulated, in order to ensure FNS and guarantee HRAF. In this sense, the expansion of coverage of care services and in the field of FNS can contribute to the guarantee of the HRAF of older adults undergoing HENT and their families.

Financial access to adequate food is one of the main aspects of the effectiveness of FNS. According to the analysis of the protocols and decrees carried out in the present study, it was observed that the municipal districts are not responsible for providing the food that will be used for the preparation of an enteral diet.

The matter must be evaluated by the three spheres of management in the system in order to establish policies that can resolve this need. The attention to SDN in the SUS, then, is up to the states of Brazil and, more often, to the municipal districts. Greater municipal autonomy is the result of political-administrative decentralization, one of the principles of the SUS. However, financing is a barrier to the advancement of decentralization, as the municipal authority is left with greater expenditure and budgetary commitment[31].

In this sense, in the present study, the rationalization of public spending was observed as one of the justifications for the elaboration of program protocols and the need to establish programs via decree. The Ministry of Health states that the management of supplies for HENT is aimed at the proper use of public resources, but that the best provision of care to SUS users must be made through protocols, lines of care and budgetary resources[2]. Thus, the importance of the SUS in promoting equity[32] is highlighted. In turn, the allocation of public resources must prioritize older adults, with a view to their protection[18] and care, since, for example, there is a reduction in mortality among older adults when strategies based on PC care are implemented[33]. In addition, the development of regional health care strategies is important due to the different socioeconomic characteristics of the regions of Brazil[34], which should be considered in the programs for the care of older adults with SDN.

The present study has certain limitation, including the inclusion of programs from a single region in Brazil, the low number of municipal programs analyzed and the lack of triangulation of methods and data, which may mask results regarding the effectiveness of the municipal programs. The low number of municipal districts is justified by the fact that few such authorities have programs for care involving HENT in Paraná. Despite the limitations, however, to date no other studies have been found that present the content analysis of municipal programs with a view to caring for the SDN of older adults.

CONCLUSION

The national public policies analyzed present elements that contribute to guaranteeing the HRAF of older adults undergoing HENT, while the municipal programs do not include all the elements proposed on a national basis. A proposal to integrate these elements was created, and can be used in the future in the formulation of municipal programs to implement national public policies.

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Public policies and the insertion of old people in the labor market in Brazil

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Abstract

Objective: Discuss how Brazilian public policies aimed at old people address the right of the old people to decent work, and the promotion of their insertion and maintenance at work. *Method:* Bibliographic research was carried out to analyze the Brazilian public policies aimed at old people. In order to deepen the analysis of these policies, they were consulted in full on Brazilian government websites. The data was analyzed based on content analysis. *Results:* Among the public policies aimed at the old people those having some type of work-related disposition provision are: the National Policy for Old People, State Policy for Old People, Statute of the Elderly, and National Health Policy for Old People. The work-related propositions were categorized into: I. Creation of working conditions for old people; II. Preventing discrimination and encouraging the hiring of old people; III. Continuing education for old people; IV. Retirement; V. Work as a choice. *Conclusion:* Over time, Brazilian public policies aimed at old people have been improving the approach to decent work, and the promotion of the insertion and maintenance of old people in their work. However, there is still a lack of better advances and clarifications about the guidelines and recommendations related to work for old people, emphasizing the importance of work contexts considering the conditions and organizations impacting the possibility of insertion and maintenance of old people at work.

Keywords: Aging. Public Policies. Occupation Health.

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INTRODUCTION

As the Brazilian population ages, there is a greater social participation of the old people (those who are 60 years or older). This occurs even in work activities[1-4].

In 1977, 4.9% of workers in the labor market were old people, showing a growing trend. In 1998, this number rose to 9%, and the expectation is that in 2020 about 13% of the employed population in the country is of old people[5]. These predictions have been sustained for several reasons.

In Brazil, old people tend to continue working to supplement their family income as their retirement are often the only income for them and/or their families, and it is not enough for them to live[3]. Added to this are the legal changes which set more years to be worked or to contribute to Social Security before retirement[3-4]. Some people also keep working for the meaning and importance they give to work. These can be related to the needs of social interaction, to remain active, productive, and even to spend their idle time[6,7].

In addition, the Brazilian Social Security reform[8] was approved at the end of 2019 and determined to cut and postpone some benefits. Thus, although the changes occur gradually based on a transition rule, the minimum age and working time required for retirement are increasing in Brazil, which is likely to result in an even greater number of old people who will need to remain in the labor market.

Given these data, it is noted that the old person will want and/or need to keep working more and more. For this, there may be challenges[4]. One of them relates to the work organization. This is often designed for young workers. This can be an impediment to the permanence of the others, considering that structural unemployment will lead the old person to compete for job positions with younger workers[4,6].

Another challenge refers to ageism, a term used to define a type of prejudice related to age that can generate a set of negative or positive attitudes towards aging[2], favoring or disfavoring the inclusion and maintenance of the old person in the labor market.

On the one hand, the old person has potential for work due to their experience, which would lead to their appreciation[6,9]. On the other hand, it is noted that in general and especially in less qualified jobs (with greater physical demands instead of experience and accumulation of knowledge), there is a tendency of devaluation of the old worker because it is considered that they have reduced skills to work[9].

The main justification for this consideration is that the aging process, although quite heterogeneous, involves the presence of biological declines resulting in decreased intrinsic capacity[2,9]. However, this justification is debatable, since studies claim that declines in aging generally result in a negative impact on intrinsic capacity, but not necessarily on functional and work capacity[10,11].

The term "intrinsic capacity" refers to an individual's physical, intellectual, and psychological capacities, whereas "functional capacity" refers to the ability to perform various tasks resulting from the interaction between intrinsic capacity and the possibilities offered by theenvironment including the possibility of using auxiliary devices[11]. The "work capacity" relates to the type of work that the person does, referring to the intrinsic capacity of interaction with the organizational culture and the work environment for carrying out labor activities[10].

Therefore, the adaptability of the old person at work does not depend only on their individual characteristics, but also on the conditions and organization of work. The work organization corresponds to its content, division of labor, hierarchical levels, production norms and procedures, established goals and pace, interpersonal relations; work conditions refer to the materials and physical facilities used to carry out the work[12].

The current labor conditions have offered few possibilities for workers to adapt for a variety of reasons. The main one is the process of precarization of work, which has been in place since the 1990s. Precarization of work can be defined as a degradation

process including aspects like the deregulation of the job, deterioration of the work conditions, extension of workday, reduction of the wages, increased social deprotection, diffusion of physical and/or mental suffering as inherent to work, structural unemployment, among other[6,13].

The social security changes did not take into account the culture of ageism, the need for changes in the work organization, and the global precarization process that the country was already going through. These factors can make it difficult and even make it impracticable to include and keep the old people in the job. Therefore, there is a need for strategies at various levels to prolong the time of old workers at work.

Public policies aimed at the old people were implemented as the country began to reverse its age pyramid. These policies are not always sufficient for the demands of the population. However, they are essential for the support of old workers, and it is believed that they will allow to guarantee the right to decent work and promote the insertion and maintenance of the old people at work[4].

Decent work, according to the International Labor Organization (ILO)[14], refers to the productive work to provide a dignified life for the people who do it. This work is carried out under conditions of freedom, equity, and safety, without discrimination. Also according to the ILO, there are some indicators to define decent work, such as job opportunities, adequate income and productive work, decent working hours, combination of work, personal and family life, stability and safety at work, equal opportunities and treatment at work, safe work environment, social security and social dialogue, and representation of workers and employers[14].

The present study aimed at discussing how Brazilian public policies aimed at old people address the right of the old people to decent work, and the promotion of their insertion and maintenance at work. In addition, it aimed to deepen, more specifically, how these policies evolved in the search for the creation of working conditions, fostering non-discrimination of this population in work environments, creation of programs for job offers, for training/continuing education, and for preparation for retirement.

METHOD

This is a documentary research of a qualitative nature. Initially, a bibliographic search of studies dealing with Brazilian public policies directed at the old people was carried out at Portal de Periódicos Capes , and published in article format related to the Brazilian public health area in the period between 2000 and 2020, available in full in Portuguese. The following search terms were used in isolation: "policies and old people", "public policies of old people", "legislation for the old people", "public policies and aging".

We found a total of 416 articles. Of these, we excluded the repeated ones, and those not having Brazilian public policies directed to the old people as their central theme, or those with some specificity in some theme (for example, an article dealing with public policies directed only to the institutionalized old people). Thus, 67 articles were selected. After reading the abstracts, we considered that there was a redundancy of information. Therefore, we selected the articles that dealt more widely with the targeted content. Thus, 11 articles were selected.

These articles were the basis for a survey on the main Brazilian public policies directed to the old people listed in the literature and the focus of the present study. Therefore, the analysis of these articles is not the central point of the study.

To deepen the analysis of these policies, we consulted them in full on Brazilian government websites such as Planalto, Virtual Health Library of the Ministry of Health, Federal Senate, Chamber of Deputies, Ministry of Social Security and Social Assistance.

The data was analyzed based on the content analysis[15], with an exhaustive reading of the policies indicated in the articles and the apprehension of differences and common points which are different and/or complementary among them regarding the right of the old people to decent work and promotion of insertion and maintenance at work.

RESULTS

In 1988, the Federal Constitution (CF)[16]was established, and ensured the right to life and citizenship to the old people. The CF deals with work for the general population, stating that it is a social right, being forbidden differences in wages, exercise of functions, and hiring criterion due to sex, age, color or marital status.

In 1994, the National Policy for Old People (PNI) was created - Law 8,842[17]. The PNI aims to create conditions to promote autonomy, integration and effective participation of the old person in society with the implementation of actions in several areas, among them work. This Policy defines that government actions should be proposed to ensure mechanisms to prevent discrimination of the healthy old person regarding their participation in the labor market, and that retirement preparation programs are created.

Subsequently, the State Policy of the Elderly (PEI) – State Law 9,892, of 1997 (São Paulo/SP), repealed by Law 12,548 of 2007[18], was established to guarantee the necessary conditions for the old people to continue their full exercise of citizenship. PEI suggests the incentive to provide labor therapy and occupational therapy services and voluntary work programs to the old person, and prepare them for retirement. It also recommends offering professional training and retraining aimed at inserting the old peple into the labor market, avoiding any type of discrimination.

In 2003, the Statute of the Elderly (EI) was instituted - Law 10,741[19] - to extend the rights foreseen in PNI, also regarding labor. The EI states that professionalization and work are basic rights of the old people, being respected their physical, intellectual, and psychic conditions in the professional activity. Said Statute states that discrimination is prohibited in hiring old people in any work, and that preference will be given to those of higher age in the event of a tie in public tender. It also suggests encouraging private companies to hire old people and create retirement preparation and professionalization programs for this population, taking advantage of their potentials and skills for regular and paid activities.

In 2006, the National Health Policy for Old People (PNSPI) was promulgated – Ordinance 2,528[20] - which aims to recover, maintain, and promote the autonomy and independence of the old person with collective and individual health measures. PNSPI proposes the implementation of measures to prepare for retirement, eliminate discrimination in the labor market, create conditions allowing the insertion of the old person in the socioeconomic life of the communities and for the survey of the old people who returned to work in order to identify the conditions in which they operate in order to prevent abuse and exploitation.

The proposals of work-related policies for the old people were categorized and pointed out in Table 1.

Table 1. Relation between work-related propositions and policies aimed at the old people.

Policies / Propositions	National Policy for Old People (PNI)	State Policy for Old People (PEI)	Statute of the Elderly (IE)	National Health Policy for Old People (PNSPI)
I. Creation of working conditions for old people				X
II. Preventing discrimination and encouraging the hiring of old people	X	X	X	X
III. Continuing education for old people		X	X	
IV. Retirement	X	X	X	X
V. Work as a choice		X		

DISCUSSION

Initially, from 1974 to 1994, government actions aimed at the old people were of an assistance nature or were within broader policies[21]. In 1994, the PNI was created and brought advance to the legislation, since it was the first policy specific for this population, which did not have an assistance nature and which sought to ensure the social rights of the old people in various areas of life. From there, other policies were being implemented. Among them, EI was also a milestone for proposals aimed at the old people considering the scope of the issues related to them.

As public policies were created, they started to include deliberations aimed at ensuring the rights of the old people in different areas of life, including work. Thus, this population went from passive agents of these policies to becoming more and more prominent before society.

The fact of the policies considering the work of the old people is a progress, since this was not thought in previous legislations, as Consolidation of Labor Laws (CLT)[22] - Decree No 5,452 of 1943. This last one does not present provisions on work for this age group, although it presents protection for woman work, for example.

The recommendations presented are in line with some of the proposals of the World Health Organization (WHO)[23] for Active Aging, which refers to the aging process seeking to improve the quality of life. According to this organization, the maintenance of old people at work can be an indication and element to promote health and quality of life to the population. Thus, it suggests the dynamic participation of the old people in the activities of economic development, work, and volunteering, according to their individual needs, preferences, and skills.-

Thus, the WHO[23] recommends actions to provide permanent learning, the dissemination of the positive image of aging, and poverty reduction. With regard to formal work, it suggests that programs and policies are implemented to allow old people to participate in the labor market. As an example, it mentions the elimination of age discrimination in hiring, and the maintenance of older workers in the companies.

I. Creation of working conditions for old people

The introduction of technological innovations, the outsourcing of services, increased informal employment relations, and changes in the organization of work have generated an increase in labor and productivity requirements. These can be verified by increased pace of work and the burden of responsibility, reduced rest, and extended intervals in working hours, increased underemployment, among others[6,13,24].

Work contexts like these can lead to the triggering of physiological, psychological, and behavioral responses in workers of all ages, with the possibility of decreased ability to work, the onset of diseases/symptoms, and retirement or retirement on disability.

However, old workers may be more susceptible to health problems due to senescence and to the fact that work-related diseases are a cumulative and progressive process that can take years to manifest[10,12].

Thus, the adequacy of the conditions and organization of work are indispensable to promote health and quality of life, as well as the inclusion and permanence of the old person at work. This adequacy can be from digital inclusion, often considered a specific barrier for the old people to the adequacy of labor relations, indispensable to workers of all ages[9,12].

Although the adequacy of conditions and work organization are an essential recommendation, it is still little addressed in policies aimed at the old person, having been mentioned only in PNSPI[20]. However, this policy does not provide indications of what these conditions should be, and do not address the organizational issue of the companies. Therefore, this is a relevant point that should be improved.

II. Preventing discrimination and encouraging the hiring of old people

The above-mentioned contexts tend to generate an even more competitive market in which the old person often suffers disadvantages[24]. Most often, unemployment affects these workers who are replaced by younger workers because they are considered to have higher production capacity and lower costs[4,9].

In addition, the old people are often considered to have limited performance, especially in activities with high physical demands or characterized by rapid technological changes[9,24]. Although studies claim that aging is not synonymous with lower productivity, negative stereotypes are attributed to the old person because aging is considered to refer only to a process of degeneration. Thus, it is noted that ageism becomes present, disfavoring the insertion and maintenance of the old person in the labor market[2,25].

Studies indicate that discrimination with old people can result both in their non-hiring and their dismissal, and therefore it is necessary to combat the negative stereotypes that can lead to the exclusion of old workers[2,26]. In this sense, it is important to implement measures to prevent discrimination and privilege the old people in the hiring of public and private companies, since this can be a way to balance the competitiveness of the labor market and fight the stigma on the old person. This measure is recognized by all the policies that have been studied here.

III. Continuing education for old people

Due to stereotypes, old workers often tend to be considered obsolete, less productive, resistant to changes, and not motivated. It generates companies lack of interest in investing in these workers, as they believe little of these costs will be returned[9].

Studies show that old people receive fewer incentives, such as offers to participate in permanent and continuing education programs than other age groups[10]. This factor could explain part of the disadvantage suffered by the old people in the labor market, since the productivity potential can be impaired by the less exploited and/or not updated skills that could be corrected with educational programs[9].

In addition, these programs may have an even greater importance for the old people when considering that they may have cognitive declines resulting from the aging process[3,9]. Thus, as pointed out by PEI[18] and EI[19], professional training and recycling programs can contribute to the insertion and maintenance of the old person in the labor market[24]. EI[19] also suggests that the potentials of the old people are used for work activities. Thus, the potentialities of old workers must be balanced with the difficulties in performing the work.

Of course, each worker will have different potentialities for work. However, in general, one of the main strengths of old workers is related to their know-how, i.e., experience arising from the practical or technical experience accumulated over the years of work[6,12].

In addition to know-how, it is understood that aging can favor workers with the development of other skills such as diligence, independence, loyalty to the company, empirical and specific knowledge about the company, managerial skills, critical thinking and judgment, communication, responsibility and social competence, and awareness for safety and quality at work[2,9,24].

Therefore, the importance of adjustments in the work organization is emphasized again, so that they take advantage of the skills of the old people and minimize the declines[12]. In addition, younger workers generally have other types of skills such as ease of dealing with new technologies, willingness to learn, health, and physical vigor. Thus, the exchange of experience between workers of different ages can be positive for companies, as there is a wider range of skills to be used[2].

IV. Retirement

The interruption of work activities can be experienced in different ways by each person. However, studies indicate that retirement can mean more than the interruption of work, involving identity crises, confused and ambivalent feelings mobilizing anxiety, mood alternation, psychosomatic diseases, and diverse fears. In this sense, retirement preparation programs can facilitate this process if the person can prepare when they are still working[27,28].

The implementation of retirement preparation programs was addressed by all policies analyzed in the present study. These programs can be important for those who are close to retiring, as stopping to

work can lead to a break in everyday life, and these programs can assist the old people in life projects[7].

V. Work as a choice

It is considered that there was no greater clarity about this item in the policies analyzed. However, it was understood that the programs of voluntary work and provision of work therapy and occupational therapy services proposed by PEI[18] are an alternative form of work which the old person does for interest/choice, and not a formal work that is driven by a need, for example, economic need.

Old people are often retired. Retirement can generate both difficulties in making use of the time that was used to work and isolation from the lack of contact with colleagues and the work environment. At the same time, retirement can enable the development of new alternative activities and hobbies[26].

Thus, these PEI proposals can contribute to answer the aforementioned questions arising from retirement or serve as a complement to the activities of the old person, especially when considering that this person gives a positive meaning to the work[7].

But if work is relevant for the old person as a matter of financial gain, than voluntary work makes no sense. If the old person wishes to keep working to feel useful or to maintain social relations, this same work can possibly make sense.

It should be worth noting that the WHO considers that voluntary work should be acknowledged, and the opportunity given to the old people[1,23]. In addition, there is an indication that occupational therapy can contribute to the insertion and permanence of the old people in various daily activities, including work[29].

Finally, it should be mentioned that the present study presents the limitation of addressing the subject of public policies and work for the old people in a comprehensive way without the possibility of considering singular cases, and with the risk of the propositions made here not being in line with certain groups of old workers. On the one hand, this scope allows an overview of the proposals related to work for the old person within the Brazilian public policies. On the other hand, it brings the limitation of deepening the subject addressed generating a certain superficiality to the study.

CONCLUSION

Over time, Brazilian public policies aimed at old people have been improving the approach to decent work, and the promotion of the insertion and maintenance of old people in their work. This occurred with the propositions aimed at protecting the rights and stimulating the work for old people.

It is noted that the PNI, the first policy specifically aimed at the old person, dealt with the work area in a more introductory way, proposing actions aimed only at fighting discrimination and preparing for retirement. The policies afterwards (PEI, EI e PNSPI) maintained these recommendations and added others such as the creation of continuing education programs to encourage companies to hire old people, and the provision of other types of work such as voluntary work. In addition, it was also suggested to create working conditions for the old people.

It is believed that these proposals can contribute to decent work and to the insertion and maintenance of the old person in this work. However, there is still a lack of better advances and clarifications about the guidelines and recommendations related to work for old people, emphasizing the importance of work contexts considering the conditions and organizations impacting the possibility of insertion and maintenance of old people at work.[30].

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Nutritional Care for older adults in Primary Health Care, from the perspective of health professionals

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Abstract

Objective: to characterize and analyze Nutritional Care (NC) for older adults in Primary Health Care (PHC), identifying how food and nutrition actions (F&N) were performed and the conceptions that guided them. *Methods:* a cross-sectional, quantitative and qualitative study was performed in PHC in Santos, São Paulo, Brazil, in two phases: i) a census study was carried out of health units, N=28 (100%), with managers who answered a structured interview to assess NC; followed by descriptive analysis. ii) a deeper investigation of this diagnosis was performed, using semi-structured interviews with key informants (interviewees) of care for older adults; being a nutritionist was not a criteria, as there were only three such professionals throughout the entire PHC, and one of the health regions studied was not served by a nutrition professional. The concept of theoretical saturation was used for the sampling plan; content analysis was carried out and the inferences were supported by references of integrality and aging. *Results:* NC for older adults was highlighted by individual care, predominant in all the services studied (28) (100%); nutritionists participated in this activity in just nine units (32.1%). Theoretical saturation was achieved with nine interviews. According to the discourse analysis, F&N actions were generic, focused on the treatment of diseases, influenced by negative aspects attributed to aging, there was no planning based on the needs of the territory, and health professionals identified themselves as information transmitters, leaving the responsibility of acting on such information to the older adults themselves. *Conclusion:* F&N actions were guided by the biomedical paradigm, fragmented, restricted to disease management, imputing the responsibility for health to the individual themselves. Thus, NC distanced itself from the promotion of healthy aging, weakening its strategic role in the quest for integrated care.

Keywords: Primary Health Care. Nutrition Policy. Nutritional Sciences. Integrality in Health. Aging.

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INTRODUCTION

Population aging is considered a global challenge for health systems[1,2]. Due to its resolutive capacity at the point of care, the World Health Organization (WHO)[1] recommends the strengthening of Primary Health Care (PHC) to promote healthy aging[3].

In Brazil, the National Health Policy for Older Adults (or PNSPI)[4] aims to provide integrated care, coordinated through PHC, in conjunction with the Health Care Network[5] (or RAS). However, evidence has revealed weaknesses in integrated care, such as difficulty in accessing services, low quality of care and a lack of professionals with training in geriatrics and gerontology. At the same time, specific actions aimed at dealing with harm or injury are prevalent[6-8].

One of the strategies for addressing this situation and improving the resolutive capacity of PHC in promoting healthy aging is Nutritional Care[9] (NC), oriented to the specific needs and characteristics of older adults, provided for in the National Food and Nutrition Policy (or PNAN)[10]. NC, together with other measures, can help to improve health services by acting to prevent morbidities classified as PHC-sensitive conditions[11], such as Chronic Non-Communicable Diseases (CNCDs), which represent an important disease burden among the older population[2].

The PNAN[10] is based on improving food and nutrition (F&N) conditions, according to specific individual and collective needs, through interdisciplinary and intersectoral actions to promote health and prevent diseases. Planning care for older adults from this perspective is a potential strategy for overcoming weaknesses in care, focusing on preservation and/or functional recovery and favoring healthy, dignified and autonomous aging[12].

Although the potential of NC among the older population is recognized, there are few studies on its role in PHC[13]. There are also gaps in the identification of intervening factors in F&N, especially with regard to the planning and management of actions[14] or the daily provision of services, based on the assumption that concepts of health-disease-care and aging are configured within the micropolitics of work processes[15].

According to Beauvoir[16] and Debert[17], the manner in which society conceives aging is associated with the social-historical process and influences the dynamics of life, including the performance of health professionals. For this reason, such scholars were chosen as the theoretical references of this study, based on the integrality of care[18], a key principle of both the PNSPI[4] and PNAN[10].

The present study aimed to characterize and analyze NC in PHC for the older population, from the perspective of health professionals, to identify how it is implemented and the concepts that guide F&N actions for this age group.

METHODS

A cross-sectional study, with a quantitative and qualitative design, was conducted in PHC in the city of Santos (São Paulo), Brazil.

The quantitative methodology was applied in 2014, in a census study of the diagnosis of F&N actions in PHC, through interviews with managers of every health unit, N=28 (100%), in the four health regions of the city of Santos, which is the largest sea port in Latin America and an important economic hub in the Baixada Santista Region, with a high Human Development Index (HDI= 0.84). This predominantly urban city has approximately 433,000 inhabitants, with an older population of 19.2%, a rate higher than the national figure of 11%[19].

For the interviews, which were carried out in the health units, research fellows were selected and received training. The material collected was checked by a field coordinator for possible additional information. The variables used to characterize NC for older adults were: types of F&N actions (individual, educational, home visits); professionals responsible for such visits and presence of nutritionists in PHC. Descriptive analysis of these data was undertaken.

The qualitative approach was applied in 2016, with data collection performed by the author of this study (at the time a master's student), to broaden the examination of the census findings and understand the context of NC for older adults. In the same health

regions as in the previous stage, managers were asked to recommend a professional per health service, with minimum experience of two years in caring for older adults, who performed F&N actions. Such key informants provided data to describe the daily application of these actions. Training in nutrition was not a requirement, as one of the regions did not have a nutritionist available.

For the sample planning of this stage of the study, the concept of theoretical saturation was adopted. This is a procedure used in qualitative research to indicate the point at which data collection can be halted, when the information provided assumes the character of a single body of satisfactory quality, with no new themes of analysis for the study emerging[20]. Semi-structured interviews were conducted based on a script composed of three central categories of the organization of NC: 1) planning and management of health care for older adults; 2) NC for older adults and 3) conceptions about aging and being old. The interviews were audio recorded and transcribed *ipsis verbis*. To ensure confidentiality, interviewees were identified with the names of flowers.

To support the work, the reflections of one researcher of their experience in the field were recorded in a field diary, a tool that enables dialogue with the reference areas of the study[21].

The data were organized in accordance with Bardin's content analysis[22]. For each of the categories in the interview script, thematic groups were identified from a rapid, then exhaustive reading. The inferences and interpretations were supported by references to integrality[18] and socio-anthropological aging[16.17], under the spectrum of the PNAN[10] and PNSPI[4].

This survey was approved by the Research Ethics Committee of the Universidade Federal de São Paulo (the Federal University of São Paulo), under opinion No. 1,517,363, and by the Municipal Health Department (MHD) of Santos (São Paulo), in accordance with resolutions 466/2012 and 510/2016. All the participants signed an Informed Consent Form (ICF) before the interview.

RESULTS

The managers of 28 PHC units participated in the census, of whom 20 were nurses, three were dentists, two were social workers, two were psychologists and one was a pharmacist. As managers, these professionals were responsible for organizing and planning work processes and analyzing service demands and needs, including those related to Nutritional Care. The reports of the managers revealed that NC for older adults in the PHC units was organized into different types of actions (Table 1).

F&N actions were performed by a range of professionals, while nutritionists participated in only nine units (32.1%), as shown in Table 2. In PHC throughout the municipal region, there were only three nutritionists, who rotated between three of the four health regions.

Theoretical saturation was reached with nine interviews. The key informants interviewed included five doctors, two nurses, a community health worker (CHW) and a nursing technician. There was no mention of a nutritionist as a reference in care for older adults, although the theme involved NC. Table 3 shows the configuration of the qualitative analysis process.

Table 1. Percentage distribution of the modalities of Nutritional Care actions for older adults in Primary Health Care units. Santos, São Paulo, Brazil, 2014 (N=28).

Modalities of actions in Primary Health Care units	Frequency n (%)
Individual Treatment	28 (100)
Home Visits	22 (78.5)
Leaflet Distribution	16 (57.1)
Fixed groups	14 (50.0)
Activities in waiting room	06 (21.4)

Table 2. Health professionals responsible for Nutritional Care for older adults, according to Primary Health Care units. Santos, São Paulo, Brazil, 2014 (N=28).

Responsible professional for nutritional care in Primary Health Care units	Frequency n (%)
Doctor	28 (100.0)
Nurse	23 (82.1)
Nursing technician	20 (71.4)
Community health worker	20 (71.4)
Nutritionist	09 (32.1)
Social worker	02 (7.1)

Table 3. Categories, thematic nuclei and registration units for the analysis of Nutritional Care for older adults in Primary Health Care. Santos, São Paulo, Brazil, 2016.

Categories	Thematic nuclei	Registration units
Planning and management of health care for older adults.	A fragile structure hampers the planning and success of health care.	No information system.
		Lack of action planning.
		Insufficient training.
		Lack of professionals, both quantitatively and in terms of areas of knowledge.
	Influence of social determinants on health.	Poor socioeconomic conditions.
		Limited social support.
Nutritional care for older adults.	Conceptions about food and diet.	Food is a predictor of health.
		Food is medicine.
	Actions are generic and standardized.	Aimed at CNCDs.
Conceptions about aging and old age.	Result of lifestyle.	Building good habits since childhood.
		Knowledge and motivation produce good habits.
	Role of health professional in healthy aging.	Health professional is a transmitter of knowledge.
	Negative meanings about aging and old age.	Aging as decay.
		Old age associated with disease.
		Infantilization of older adults.

Planning and management of health care for older adults

The interviewees indicated aspects of daily health practices as care planning. This is most likely due to the absence of an information system, with medical records being the main source of data. Sociodemographic data were recorded on Community Health agent forms and sent to the MHD. There was no system that translated these data into the health profiles of the older population of the region.

> "There isn't exactly any specific organization. There are the medical records that we prepare [...] and that go with each consultation [...]. There is nothing in the Health Department, specifically, for it." [Moss Rose].

Data on living and health conditions, collected by the CHW, were restricted to updating the registration and monitoring system for hypertensive and diabetic patients of the Ministry of Health (*HiperDia*) and to identify individual needs through an active search.

> "[...] the health agents, who visit the area, identify the older adults [...]. We call them for consultations according to our needs." [Ipe].

The management of care for older adults was guided by the daily demands of the services. The findings suggested privileging the treatment of diseases, to the detriment of actions planned according to health needs. Individuals who did not experience morbidity or complaints had limited health monitoring.

> "[...] patients who are hypertensive, diabetic [...] as they take medication monthly [...] we know that they are being monitored [...]. But what about those who are not [...]? " [Mayflower].

Care guided from the perspective of the disease, and carried out fragmentally, reflects the dynamics of the organizational sphere. Lifelong learning activities, promoted by the MHD, included care for older adults from the perspective of the treatment of CNCDs, reinforcing the association between old age and illness. In addition, there was a lack of professionals from different areas in the teams.

> "[...] we have little training related to geriatrics, which deals specifically with caring for older adults [...] we have training related to diseases, not the care of healthy older adults." [Ipe].

> "[...] if we were accompanied by psychologists, a social worker [...], nutrition. It would be important." [Brazil Wood]

The interviewees exposed difficulties in care when faced with individuals in situations of socioeconomic vulnerability and without family or neighborhood support networks. Low social support and income were listed as aspects of the lives of older people that can represent obstacles to the effectiveness of professional practice.

> "[...] it is very difficult [...] for these older people who live alone and who are often bedridden and who have no one to look after them." [Ipe].

There are limits to the organization of care for older adults, when such care is restricted to responding to the needs presented within the health service. Strategies were cited to improve treatment, given the need to construct a line of care for this group.

> "Integrated care and the family, and not looking only at the patient and the diseases of older adults. Seeing the risks for older adults, prevention is important. " [Jacaranda].

Nutritional care for older adults

The interviewees recognized the role of food in health care for the older adult population and the importance of specific actions based on the socioeconomic reality of the individual.

> "Diet, for me, is one of the most important things." [Jacaranda].

> "[...] I will not recommend a type of food that I know she won't be able to manage financially." [Calliandra].

Although the interviewees stated that NC needs to be adjusted to the living contexts of the older

adults, the practice proved to be standardized and generic.

> "[...] body mass index, if the patient already has a pre-existing disease". [Glory Bush].

> "[...] guide a healthier diet, but in a generic way". [Moss Rose].

F&N actions were aimed at the treatment of NCDs, mainly arterial hypertension and diabetes. From the perception of the interviewees, foods acquired the same functionality as medicines and were perceived as good or bad.

> "We have the hypertension and diabetes groups [...] that's where we usually guide nutrition more." [Ipe].

> "Food is geared towards some type of morbidity, right?!" [Calliandra].

The reasons for the limitations in the understanding of the character of F&N actions were not restricted to the performance of health professionals who, in general, lacking the ability to perform such activities, responded to immediate demands. Aware of the health conditions presented by older adults, and with a limited number of nutritionists to support such practices, health professionals sought alternatives to care for individuals and fill this gap.

> "[...] there was a nutritionist [...] But then she got pregnant, and didn't come back." [Jacaranda].

> "I went to get some diets that I had in another unit where I worked and asked to photocopy them! [...] I don't even know who did it. Or when were they were made [...] "[Allamanda].

> "We work, get it and carry on. The logic is not seen as a multi-professional exercise" [Moss Rose].

Conceptions about growing old and being old.

For the interviewees, healthy aging also results from good eating habits throughout life. The idea of the conditionality between time and frequency stood out, along with the idea that if such habits were cultivated since childhood, the individual would be healthy.

> "Your diet will determine (...) your body functioning". [Moss Rose].

> "From childhood, you have to prepare yourself for aging. A healthy lifestyle doesn't start at sixty". [Jacaranda].

Two determinants were described by the interviewees to make these good habits possible: knowledge and individual will. The combination of education and motivation would be sufficient, from this perspective, to make an older person healthy.

> "[...] education is much, much, much more productive than investment in health". [Moss Rose].

> "[...] it's no use having a wonderful team of professionals if the person doesn't want to be helped". [Bougainvillea].

According to the interviewees, their role in promoting healthy aging is to transmit knowledge, as a way of ensuring that the service user incorporates the guidelines received and applies them in their daily lives.

> "[...] the most important role is to provide [...] a tool for them to do it (...). The day the patient knows, (...) they will do it. " [Jacaranda].

> "With these lectures (...) they explain properly (...) the complications of the chronic diseases, right?" [Glory Bush].

For the interviewees, aging healthily requires simple thinking and is dependent on personal momentum. However, the difficulties they exposed revealed barriers to this.

> "Older adults who live alone [...] the lack of resources, the network is overburdened, there is a lack of health professionals [...]". [Calliandra].

Another factor that hinders healthy aging is the interviewees' attitude towards aging and old age. The results showed that older people were not recognized as autonomous subjects, nor was old age considered a period of latent vitality. On the contrary, they were infantilized, viewed as individuals requiring guardianship.

> "[...] an older adult is a child who says what he's thinking". [Jacaranda].

> "They are quite aloof, they don't want to obey." Brazil Wood

Interviewees linked aging to decay, disease, and old age to stagnation and frailty.

> "[...] they're already a sick population! [...] You just have to treat them, there's nothing else to do. " [Allamanda].

> "[...] if you don't want to get sick from something, don't get old." [Moss rose].

DISCUSSION

Few studies have focused on nutrition and aging from the perspective of NC for older adults, with evidence recorded in terms of nutritional profile, food consumption and nutritional problems, as shown in literature reviews analyzing food and nutrition actions in Brazilian PHC[13,23]. The innovative character of this research lies in its interdisciplinary approach, supported by the concept of integrated care, supporting the need for qualified NC as a strategic component for the promotion of healthy aging.

From the characterization and analysis of NC for older adults, it was identified that F&N actions, before following the guidelines of the PNSPI[4], PNAN[10] and international recommendations[1], were shaped around conceptions which were translated into behavior[24] that fails to comply with the principles of public policies, resulting in problems in the organization of NC.

The lack of investments in infrastructure, permanent education in geriatrics and gerontology and the contingent deficits in the workforce[3,25] was reflected in the way in which F&N actions were carried out. The management of care and organization of NC for older adults was shaped by the biomedical paradigm, eminently curative and restricted to the demands of treating diseases, to the detriment of meeting health needs[26].

It is necessary to integrate NC into health planning, as a tool capable of focusing on a given reality, provided that the actions are directed at the heart of the issues[26]. The absence of a situational diagnosis, supported by health surveillance data, hampered the development of F&N actions. The production of information based solely on professional records, in the act of treatment[7,27], proved insufficient to identify the magnitude of the existing problems and to elucidate strategies corresponding to the demands of the territory[28].

A NC information system that combines sociodemographic and health data would support a situational diagnosis, providing elements to organize, monitor and evaluate NC for older adults. But the scope of this premise is linked to the qualification and training of the workforce and of health services[26].

The lack of investments to expand the repertoire of health professionals in the area of geriatrics and gerontology[1], can limit the management of aging and the development of potential opportunities in old age[4,7]. This may have contributed to the association of aging and negative signs, described by the interviewees, for example, when interpreting claims for autonomy as rebellious, infantilizing older adults and considering them as subject to guardianship, which impoverishes the idea of old age[16, 29]. The relationship is vertical, something reinforced by the key informants when they assigned health professionals the role of knowledge transmitters.

Thus, F&N actions took on a prescriptive character, leaving it to the older adults to find the motivation to follow the guidelines received[16,17]. However, the communication of guidelines in themselves has little effect on changing lifestyles, however much they are based on motivational

strategies[10]. Eating practices are the result of multifactorial determinants[10] and, in this network, the factor of personal motivation may have the least influence on the construction of healthy practices, differing from the perspective of the key informants.

The prescriptive approach is non-dialogical[30] and normative, underestimating material aspects for the production of life and disregarding subjectivities and heterogeneity in the forms of aging, contrary to the principles of integrality[8,17,18].

Awareness of this needs to be extended to all health professionals[27]. However, it is impossible to ignore the tentative insertion of nutritionists in the PHC under study, limiting the scope of NC[25,26,31]. Despite the interdisciplinary character of such care, nutritionists have specific skills in performing the dialogue between F&N issues and the various components that involve the health-disease-care process[31].

The promotion of healthy aging requires attention to socio-cultural determinants, respect for subjectivity and the quest for autonomy for individuals and the community[10,32]. The key informants demonstrated an understanding of NC as part of these requirements, as they recognized the influence of life context on healthy aging. However, their practices had little impact on the health needs related to the health-disease-care process of the older population[3,26].

This mismatch between discourse and practice portrays the difficulty of implementing a counter-hegemonic health system, as observed in the PNSPI[4] and PNAN[10], which defend health as a right and of the need for integrated care. This premise is opposed to the structuring logic of neoliberal capitalism, which is based on the concept of health as a commodity[18], a product of individual investment[17,24], and in denying societal contradictions and the role of public policies.

Thus, F&N actions for older adults were restricted to the treatment of CNCDs, considered a characteristic stigma of old age[3]. From this perspective, the fight against CNCDs may have assumed a pragmatic role in the prevention of old age itself, as food is assigned a role similar to that of medicines. Food can contribute to fighting disease, thus postponing old age. The denial of aging becomes an attempt to denaturalize it[17].

This manner of applying NC exposes the need to overcome the treatment of dietary and nutritional issues through the restrictive lens of nutrients[10], given the complexity involved in the act of eating[30]. The contribution of NC to healthy aging can be distinguished from the defense of moralizing attitudes, which see individuals according to the types of food they consume[26]. This idea reinforces the blaming of older adults for their food choices, transferring to them the sole responsibility for their aging. This is what Debert[17] calls the "reprivatization of old age"; thus, possible limitations for constructing healthy aging are condemned as personal carelessness, minimizing the influence of social determinants of health.

It was found that the NC for older adults in this study lacked planned, coordinated and articulated actions. Actions confined to disease management are unlikely to affect the morbidity and mortality profile of the older population[6,12,32,33]. Consequently, NC for older adults was characterized by immediate and fragmented actions, with little ability to propose strategies whose aims were the development of autonomy for aging individuals, thus hampering the achievement of integrated care[18,29,34].

The present study has limitations, mainly due to its regionality and cross-sectional nature. An uncertainty of resources for the promotion of research and a lack of time were issues, in an era when science is under attack, making it impossible to choose methods that would allow the observation and monitoring of F&N actions in health services, as was the initial plan. However, the central merit of the research is to reveal the emergence of a fostering NC that promotes healthy aging, in the light of the national guidelines of the Brazilian National Health Service, according to the principle of integrated care.

CONCLUSION

The reports of health professionals on how Nutritional Care for older adults was provided, in the municipality studied, revealed problems related to the organization and management of such care. The actions of food and nutrition were guided by

the biomedical paradigm, and were fragmented, being restricted to the management of diseases and influenced by negative conceptions of aging, imputing to the individual the exclusive responsibility for caring for their own health. According to this perception, Nutritional Care has distanced itself from the promotion of healthy aging, weakening its strategic character in the quest for integrated care.

It is hoped that the present study will inspire further research, deepening the reflections exposed and providing evidence to public policy management to support the construction of qualified Nutritional Care for older adults, promoting healthy aging as part of a line of care guided by concepts of integrality.

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Elderly, work and worker health in Brazil: an integrative review

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Abstract

Objective: To discuss the relation between old age, work and the worker health in Brazil, from Brazilian scientific productions collected by means of an integrative review. *Method and results*: once defined a guiding question and search criteria, a research was conducted in databases of the Scientific Electronic Library Online (SCIELO), the Latin American and Caribbean Health Sciences Literature (LILACS) and the Digital Brazilian Library of Thesis and Dissertations (BDTD). From 341 productions found, 10 of them were selected, after verification of the inclusion and exclusion criteria for this review. *Conclusion*: Besides the incipiency of studies which relate work, elderly and worker health, throughout this research it was identified the low effectiveness of the public policies in the scope of work rights to elderly people in Brazil, taking into account their health. Therefore, it is highlighted the need for developing future studies and discussions on these themes, in order to promote the formulation of complementary public policies for improvement of the presence in work of elderly people with the adoption of actions aiming at attention to health of elderly workers in Brazil.

Keyword: Aging. Health of the Elderly. Work. Occupation Health. Public Policies.

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INTRODUCTION

Population aging has been causing large socioeconomic changes around the world, including countries under development like Brazil[1]. In this process of demographic transition, the insertion or continuity of elderly in the job market are issues that have been affecting economies worldwide[2]. According to data from the National Survey per Sample of Domiciles (PNAD) of the Brazilian Institute of Geography and Statistics (IBGE)[3], in 2018 the quantity of elderly people in the Brazilian labor market was around 7.2% of employed workers, which represented approximately 7.5 million elderly persons in the workforce. In the same year, the Brazilian Institute for Applied Economic Research (IPEA), through its Labor Market Report[4], has shown an analysis of the period from 2013 up to 2018, when it was notable that elderly remained in the work market in Brazil, even in times of economic crisis.

Although elderly workers population still shows itself in a smaller proportion when compared to the population of young and adult (non-elderly) workers, since the third quarter of 2016, the proportion of the employed population over 60 years old is the one that has been growing the most. The ultimate data show an increase of 7.8% of employed persons in this age group between the second quarters of 2017 and 2018; meanwhile in the same period the youngest group, between 18 and 24 years old, decreased by 0.7%, the range from 25 to 39 years old remained stable and the one from 40 to 59 years old increased by 1.9%[4].

The continuity of elderly Brazilians in work activities is associated not only with financial conditions, such as for example, a supplement for their retirement salary or an aid to their family income, but also to the need to remain active and sociable through work[5]. Work activity supports the creation of self-identity, which includes self-esteem and the sense of usefulness[5]. Additionally, in the current conjuncture of Brazil the permanence of the elderly at work is even more evident due to the new Brazilian public pension system, which considerably raises the minimum retirement age of workers[6].

The theme in question is highlighted by the World Health Organization (WHO), on its 2015 World Report on Aging and Health[7], which refers to the employability of the elderly as a way of contributing to active aging. Furthermore, in a book published by the IPEA in 2016, "National Policy for the Elderly: old and new issues"[8], specifically in chapter 9, which deals with the relationship between the elderly and the job market, it is highlighted the importance of having healthy workplaces that favor the inclusion of the elderly free from discrimination.

In addition to the need to fit working spaces for elderly workers, considering their particularities, it is fact that we are facing a situation of intergenerational encounter between young and older people at the workplace[9]. Therefore, the importance of promoting the training and integration of the elderly is widely recognized. Besides these issues, the difficulty of dealing with the social representations that involve the universe of the elderly is evident, being strongly associated with the stigmas of unproductiveness and uselessness[2].

All these subjects demand studies in order to optimize and plan new social structures, which may give to elderly people a main role in this process, aiming at their physical and mental health. In this sense, an integrative review has been carried out with the objective to analyze and discuss Brazilian scientific productions published up to date, which deal with subjects like aging, work and health of elderly workers, in order to discuss the relationship between these themes and propose directions for future investigations.

METHOD

For this integrative review research, a study structure was adopted according to the following steps: 1) definition of the theme, formulation of a guiding question for the research and outline of descriptors; 2) definition of inclusion and exclusion criteria for reviewed productions; 3) search for productions (articles and academic studies) in databases, in order to answer the guiding question,

following existing descriptors; 4) selection of the productions found, according to the established criteria; 5) analysis of the selected productions, to extract the data to be discussed; 6) discussion of results and conclusion of the work[10].

Thus, based on the theme of the relationship between the growth of the elderly in the labor market and the worker health, for this study the following guiding question has been defined: *How does the presence in the labor market influence the health of the elderly workers*? From this question, Science and Health Descriptors (DeCs) in the Virtual Health Library (VHL) were searched, leading to identify the absence of terms such as "work of elderly" or "elderly workers". Therefore, for the bibliographic research, other existing descriptors in the databases that most resembled the guiding question were used, namely: *aging*, *work*, *elderly*, *worker health* and *labor market*. From then on, using the Boolean operator "*and*", combined searches between these descriptors from November to December 2020 were performed in the following databases: Latin American and Caribbean Literature in Health Sciences (LILACS), Scientific Eletronic Library Online (Scielo) and the Brazilian Digital Library of Theses and Dissertations (BDTD).

The search approach applied to the Scielo database was "aging" *and* "worker health. In the Lilacs database, the approach was "elderly" *and* "work", being filtered by themes such as elderly, job market, aging and quality of life. Finally, in the BDTD database, "elderly" *and* "labor market" *and* "worker health" were the search approach used.

For the approach of final selection of productions, the following inclusion criteria were defined: a) on the theme of the Brazilian population aging, related to the permanence of the elderly in the labor market and the worker health; b) articles, theses and dissertations on the research theme; c) publications with full text available. As an exclusion criterion, duplicate productions or those addressed aging in a perspective beyond the theme of this review were discarded. For the organization and presentation of the search, the recommendations of the systematic model for reviews and meta-analyzes (PRISMA) were considered, as shown in Figure 1.

Therefore, after the preliminary search in the databases applying the descriptors, a selection of titles and abstracts of articles, theses and dissertations was carried out, in order to choose the productions according to the research theme, following the pre-established criteria. After this filter of publications by titles and abstracts, the remaining ones were completely analyzed, to extract the necessary information for the discussion of this review. Finally, the collected information was submitted to a discussion, in order to relate the research theme to the content of this material for the formulation of conclusions.

RESEARCH RESULTS

At first a total of 244 articles in the Scielo and Lilacs databases were found, while in the BDTD database 97 publications were retrieved, thus totalizing 341 productions. Based on this search result, the established inclusion and exclusion criteria were applied and then 6 articles from the Scielo and Lilacs databases were selected at last. Respecting the same criteria, for the BDTD database, 1 PhD thesis and 3 master's dissertations were finally chosen, after checking their abstracts (Figure 1). In order to organize the selected productions, the respective information was arranged in a table, in which the characteristics of each production are presented, such as the origin database, the title of the production, authors, journal, in addition to the respective proposals and themes. (Table 1).

For a wider discussion of the results, the texts of the following public policies, regarding to elderly people, were also consulted: Constitution of the Federative Republic of Brazil[11] of 1988, National Policy for Elderly[12] of 1994 and Statute of the Elderly[13] of 2003. In addition as support for discussions, documents of the WHO[7] and the IPEA[8], on active aging and elderly in the labor market, are applied.

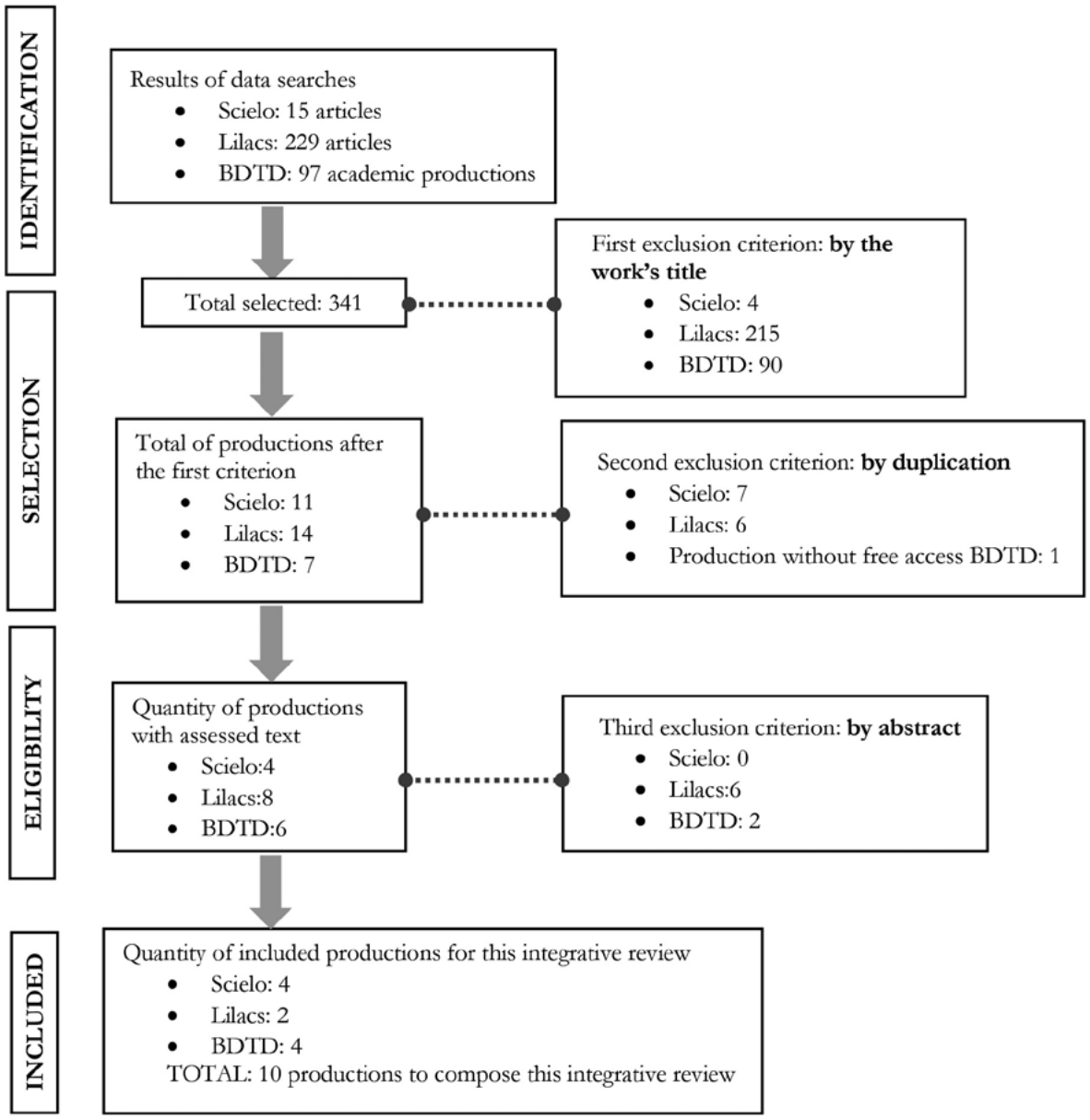

Figure 1. Prisma Flowchart - Result of data searches in Scielo, Lilacs and BDTD databases from November to December 2020.

Table 1. Results of searches in the Scielo, Lilacs and BDTD databases from November to December 2020.

Authors	Production title	Proposal and theme
Costa IP (2015)[14]	Quality of life of elderly in the context of work and their social representations	Study carried out with elderly people from a community group in Paraíba State. Data collection was conducted through interviews, using a sociodemographic questionnaire, the Free Word Association Test and the WHOQOL-BREF and WHOQOL-OLD. It aims to assess the quality of life (QoL) of elderly people who work and do not work and understand their social representations about QoL.
Santos NM (2016)[15]	Permanence of the elderly at work: structural and psychosocial factors	Investigation on factors that influence the permanence of elderly in work activities. The methodology was based on interviews, which were analyzed using a technique called Q-Sort and the software IramuteQ.
Sato, AT et al (2017)[16].	The aging process and work: a case study in the maintenance engineering division of a public hospital in the city of São Paulo, Brazil.	The objective was to understand the relationship between aging and work.
Ribeiro P et al (2018)[17].	Permanence in the labor market and life satisfaction in old age	Qualitative research, based on a database to verify the association of permanence in the labor market with sociodemographic, clinical and life satisfaction factors of elderly people. It was applied a questionnaire with semi-structured questions regarding the work activities carried out along life of elderly people.
Paolini KS (2016)[18].	Challenges of elderly participation in the labor market	Literature and qualitative review research with the objective of evaluating the participation of the elderly in the labor market in Brazil and related public policies.
Gomes PS, Pamplona JB (2014)[19]	Population aging and its consequences on the labor market and public employment policies in Brazil	Bibliographic study that aimed to present and analyze the process of population aging in Brazil and its consequences on the labor market and the public employment policies.
Giaqueto A, Soares N (2010)[20].	Work and the elderly worker	Remark on the labor world, showing that elderly people continue to experience the effects of social inequality.
Felix JS (2018)[21].	Warriors above 60: Criticizing types of integration in the urban labor market for elderly people	It aims at understanding the employment conditions of the elderly workers, through a qualitative method with direct observation techniques and interviews based on a semi-structured questionnaire.
Sousa YG et al (2016)[22].	Communication of occupational accidents on elderly through the epidemiological technical nexus	Characterization of benefits that NTEP (epidemiological technical nexus) provides to elderly workers in Brazil. It addresses the social protection for the elderly workers and the relevance for maintaining the quality of life of elderly people.
Antunes MH, Moré CLOO (2016)[23].	Retirement, elderly health, and worker health: an integrative review of the Brazilian literature	Integrative review, with the objective of analyzing Brazilian scientific productions on retirement, elderly health and worker health.

DISCUSSION

Based on the search for productions, the starting point of the discussion on the proposed theme is the active aging, which is a current highlighted demand, considering the WHO recommendation in the World Report on Aging and Health[7], which suggests in this sense the creation of inclusive environments for integration of elderly people, to promote sociability and quality of life.

On the matter of active aging, an exploratory and descriptive study[14] evaluated a sample of 113 people over 50 years old. In this sample, it was identified that 44.2% of the inquired people were still working and 55.8% were no longer working. In the working group, 32% were elderly, aged from 60 to 64 years. In addition to these data, it was observed that the social representation of quality of life was mentioned in different ways. For the group of elderly workers, it was mainly related to the work activity and consumption possibilities, in addition to the maintenance of their own support. For the others, this representation was more associated with feelings and interactions in social groups. Finally, the maintenance of physical and mental health, better cognitive and social skills emerged in the analysis of the group in work activity, elderly or not.

A study by Santos[15] investigated the factors that influence the continuity of the elderly in the labor market. From interviews with 121 elderly workers, four impact factors in this decision-making process were found, namely: the identity related to work, the social relationships built from it, family motivations and the necessity of income supplement. The interviewees brought to the debate the issue of work as a social basis and cited as concerning factors for workers the lack of planning to the retirement period and the lack of future perspectives.

The relationships between aging and work are presented in positive and negative ways in a case study with workers over 50 years old[16]. In the negative perspective, the analysis of the produced content addresses the reduction of mobility in carrying out activities, the lack of encouragement of employers to older workers in order to update their professional skills, in addition to the improper production structures for elderly. On the other hand, positive factors for these relationships are also listed, namely new challenges as a way to develop themselves as elderly, social connections established from work contexts, in addition to strengthening the well-being of these subjects.

Elderly participants in that research declared that their permanence in work activities, even with difficulties due to limited physical capacity, occurs by means of adoption of strategies to accomplish tasks. Among them, some have individual character, such as the continuous use of medications and/or auxiliary devices, and others are developed collectively, as compensatory attitudes and reorganization of work processes, with the aim of changing work activities. Therefore, the inquired elderly considered themselves able to work, even facing some health difficulties. It is important to mention that this study has a researched population of a specific sector, which may characterize a limitation of the analysis[16].

In another study[17] collected in the review, sociodemographic characteristics, such as income and education level, are treated as factors influencing the employability of elderly. It was identified that among elderly with a higher education profile, work backgrounds presented better job opportunities and health conditions. For this profile of workers, the motivation for work was mainly connected to personal satisfaction and income complement. In the group of workers with lower income and education conditions, continuity in work activity is related not only to supplementing family income, but also to less satisfaction with their activities. This condition was associated with a history of work with health wear. In addition, in terms of appreciation of the workforce, there is an indication that the younger workers have advantages over the depreciation of the older ones, due to the stigma of unproductivity associated with losses of motivation and physical capacity.

In Paolini[18], intergenerational relationships in work environments are addressed, mentioning prejudice, stigma and competitiveness as affecting factors to the health of elderly workers. At the same time, factors favorable to the valuation of such workers are identified, such as incentives and opportunities for qualification and the adequacy of

the labor market. Therefore, the importance of the employability of elderly, their requalification and their professional reinvention are highlighted.

Regarding the reduction of the physical capacity and health of elderly workers, Gomes and Pamplona[19] report the relationship between old age and inequalities in access to health, education, income, dwelling and work activities carried out throughout life. Such relationships influence different perspectives of old age and work abilities of elderly people. This study highlights the importance of the reorganization of the State, in the construction of public policies for elderly, in a composition that respects the heterogeneity of aging.

When considering the relationship between the difficulties of insertion of elderly in work, the qualification and the productivity rhythms, other studies[20-22] emphasize the need for accomplishment of rights to professionalization, social participation and non-discrimination for elderly, already supported by Brazilian public policies[11,13].

According to the perspective of the researches by Giaqueto and Soares[20] and Félix[21], changes in the labor world and the types of activities and opportunities for elderly are objects of considerations about the economic and social conditions for elderly workers and the consequences on causing different old ages. In this sense, work activities may represent a source of production of knowledge, skills, subsistence, but at the same time appear as a way of suffering, due to the forms of labor exploitation, being life expectancy treated as an additional challenge for ensuring the quality of life for this population.

For Félix[21] limitations provided by society for elderly population are associated with the lack of ensured access to rights for elderly people, in which work is included. In his research, an overview of existing public policies is shown, such as the Brazilian Federal Constitution[11] of 1988, which supports the participation of the elderly in social means and free from discrimination and mentions that it is up to the family, society and the State to ensure and support them with guarantees to dignity and the right to life. In addition, article 26 of the Statute for the Elderly (EI) is referenced[13], whose emphasis is to ensure the participation of the elderly in work environments, adapted to psychic, intellectual and physical conditions. This is reinforced by article 28 of the same document, which mentions the state's responsibility to encourage companies to hire older people. In addition, social appreciation and integration between generations in the workplace or in the community is considered an important factor contributing to active aging[21].

Sousa et al.[22] addressed the issue of social security benefits, highlighting that a considerable portion of the population that receives benefits for accidents at work is within the age group between 60 and 84 years. In addition, it was identified in the same study, that these absences from work are related to an increase in physical and emotional suffering, emphasizing the vulnerabilities of elderly workers. In the same analysis, the need for work environments that promote health is mentioned, mainly due to the fact that Brazil is a country, whose elderly population tends to be increasingly active at work, especially in a precarious form, since most of them have low income[22].

Although the right to work for elderly is established in public policies, it is observed that the adequate condition for this activity is rarely addressed in studies in the field of aging and health. Considering the labor market research of IPEA[4], which shows a growing perspective of the participation of the elderly in informality, it is necessary to think about this matter, since workers in this condition do not have many rights recognized in practice. In this sense, it should be emphasized that the combination of work history and inadequate conditions for work leads to risks of illness and, consequently, to leave the labor market.

Finally, it is worth mentioning that the results found in the bibliographic search carried out for this review suggest that Brazilian scientific productions are still incipient in considering the relationship between aging, work and worker health. As for the methodological characteristics of the productions, there is a prevalence of qualitative studies over quantitative ones. As methodological tools, these productions used semi-structured interviews with scripts, review studies and direct observation techniques, in addition to softwares for data analysis.

The absence of specific descriptors in the researched databases, leading to the adoption in the search of alternative already existing descriptors, may be a limitation for the study of this thematic. For example, in an integrative review study[23], which addresses the relationship between elderly health, worker health and retirement, a total of twenty articles were found for analysis, based on specific search criteria. Only three of these articles were selected containing the themes of worker health and elderly health. However, a limitation in this analysis is observed, since among these publications, only one actually reports the issue of elderly's work and its implications for worker health. Therefore, it can be questioned whether Brazilian publications in this area have excluded, to a certain extent, the dialogue with health, preferring other aspects.

CONCLUSIONS

Given the social changes resulting from larger longevity, in this integrative review of Brazilian publications in databases the relationship between old age, work and worker health was discussed, showing it as a new challenge to the State in the formulation or complementation of public policies for elderly in Brazil. Along with these policies, it is important that incentives for public and private institutions to enable participation and maintenance of workplaces for elderly workers may be created. This aims to support that elderly people may achieve better-suited income and well-being focused to their necessities, in addition to contribute to the inclusion of this group in the different spheres of the society.

Concern about the future of elderly workers in Brazil is emphasized and the challenges are great in this field. Studies on this matter are suggested by the results of this review, and should consider not only the participation of elderly in the labor market, but also the understanding of the types of illnesses arising from work, age groups and professions most affected by them and the work categories that most hire elderly.

Since aging of the workers follows that of the entire population, this condition is certainly experienced by other countries, even on a more advanced stage of aging. Thus, research for international works on this same theme is finally recommended, in order to contribute to the Brazilian scenario in this field. These suggested studies may in the future support the creation and establishment of specific public policies, complementing the current ones, aimed at the health of elderly Brazilian workers.

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