Are there still sex differences in the functioning of the elderly?

Ainda existem diferenças de sexo na funcionalidade dos idosos?

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Abstract

Introduction: Sex is one of the demographic characteristics that better differentiates the independence of the elderly, despite this distinction not being consensual. **Objective:** To know the differences in functioning associated with sex in elderly people aged ≥ 65 years according to the International Classification of Functioning, Disability, and Health (ICF). **Methods:** This was an analytical and cross-sectional observational study with a sample of 451 subjects. The instruments were a sociodemographic questionnaire identical to a ICF checklist and the Biopsychosocial Assessment Method. The student t, Mann-Whitney, chi-square, and Spearman correlation tests were used considering $p < 0.05$. **Results:** The average age was between 79.5 ± 7.5 years with a female prevalence (62.1%). Of the 43 variables studied, sex differences were found in 17 (39.5%). In the personal factors, women showed greater vulnerability in conjugality ($p \leq 0.001$), cohabitation ($p = 0.037$), and economic income ($p = 0.002$). Nonetheless, they showed healthier behaviors in all health-related habits. As for environmental factors and body functions, greater fragility was once again observed in women: the need for assistive devices ($p \leq 0.001$) and urinary incontinence ($p = 0.021$). In activities/participation, differences were found in mobility, where women experienced more restrictions, whereas men were more dependent on washing/drying clothes in domestic life ($p = 0.022$). **Conclusion:** Women are more unprotected in social and economic areas, while men showed more vulnerability in habits related to health. These differences are linked to demographic issues related to longevity, cultural differences, and socialization, and differences regarding activities/participation tend to dilute between sexes.

Keywords: Elderly. Frailty. ICF. Sex.

Resumo

Introdução: *O sexo é das caraterísticas demográficas que mais diferencia a independência dos idosos, apesar dessa distinção não ser consensual.* ***Objetivo:*** *Conhecer as diferenças da funcionalidade associadas ao sexo, de acordo com a Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF) em idosos com idade ≥ 65 anos.* ***Métodos:*** *Estudo observacional, analítico e transversal com uma amostra de 451 indivíduos. Os instrumentos utilizados foram um questionário sociodemográfico idêntico à checklist da CIF e o Método de Avaliação Biopsicossocial. Utilizaram-se os testes de T-Student, Mann-Whitney, Qui-Quadrado e Correlação de Spearman, considerando-se p < 0,05.* ***Resultados:*** *A média de idade foi de 79,5 ± 7,5 anos, observando-se uma prevalência feminina (62,1%). Das 43 variáveis estudadas, foram encontradas diferenças entre os sexos em 17 (39,5%). Nos fatores pessoais, as mulheres apresentaram maior vulnerabilidade na conjugalidade (p ≤ 0,001), na coabitação (p = 0,037) e no rendimento econômico (p = 0,002). Em todos os hábitos relacionados com a saúde, contudo, revelaram comportamentos mais saudáveis. Nos fatores ambientais e nas funções do corpo, observou-se novamente maior fragilidade nas mulheres: na necessidade de dispositivos de auxílio (p ≤ 0,001) e na incontinência urinária (p = 0,021). Nas atividades/participação, as mulheres apresentaram maior restrição na mobilidade e os homens na vida doméstica (lavar/secar roupa p = 0,022).* ***Conclusão:*** *As mulheres apresentam-se mais desprotegidas nas dimensões social e econômica, enquanto os homens manifestam hábitos de saúde mais vulneráveis. Estas diferenças estão ligadas às questões demográficas de longevidade e às diferenças culturais e de socialização. As diferenças nos domínios das atividades/participação tendem a diluir-se entre os sexos.*

Palavras-chave: *Idoso. Fragilidade. CIF. Sexo.*

Introduction

Along with age, sex is one of the demographic characteristics with the greatest weight in differentiating the functioning of the elderly, albeit this is not unanimous in the literature. Despite most studies indicating an advantage for men,[1-4] the differences tend to fade at older ages.[5,6]

According to the World Health Organization (WHO), functioning is an interactive and integrative multidimensional construct in which individual dimensions (biopsychosocial) and contextual, environmental, and personal factors interact, whose operationalization is described in the conceptual model of the International Classification of Functioning, Disability, and Health (ICF).[7]

Sex is a personal factor, although this component has not yet been codified in the ICF. Because of its broad social and cultural variability, its variables should always be considered when assessing functioning because those that can be modifiable exceed their importance as determinants of health status as they can be considered a change to the genesis of disability, and above all, by the possibility of being considered the genesis of the intervention.

Research on the differences between men and women has gone beyond epidemiological knowledge. Its importance and conclusions should focus predominantly on the possibility of reducing social and cultural differences, namely at the level of social institutions, identity, and power relations, the results of which will be projected onto health and functioning.[8,9]

Dessa forma, apesar de o sexo ser um fator pessoal não modificável, a determinação da sua influência na funcionalidade/incapacidade na população idosa deve continuar a ser investigada, pois poderá ser um contributo para intervenções mais sistematizadas ao nível dos serviços, sistemas e políticas.

Thus, although sex is a non-modifiable personal factor, determining its influence on functioning/disability in the elderly population must continue to be investigated, as it may contribute to more systematized interventions at the service, system, and policy levels. Given this scenario, this study sought to determine the differences in functioning associated with sex according to the ICF in elderly people aged ≥65 years.

Methods

This is an observational, analytical, cross-sectional study whose sample includes elderly people aged 65 years or older and who previously lived at home and were later admitted to the convalescence units and rehabilitation units of the National Network of Continuous Integrated Care (Rede) in the Algarve region (Portugal) after an acute episode of disease, injury, or trauma.

The data were collected within the first 48 h of entry into the Rede and related exclusively to the pre-morbidity condition, and information was collected on the different components and domains of functioning. The study was previously authorized by the Ethics Committee of the Regional Health Administration of Algarve (reference 013/10 DEP of 15/10/2010); informed consent was obtained from all participants.

The sampling method was non-probabilistic, and the instruments used were a questionnaire for sociodemographic characterization with a structure identical to the ICF checklist [10] and the Biopsychosocial Assessment Method (BAM) developed by Botelho.[11]

The BAM is a structured, standardized, screening-type assessment and biopsychosocial classification of adults and is adopted at the national level by the Network.[11] It allows biopsychosocial and functional states to be characterized and describe and detect functioning disorders. As the name indicates, it contains three assessment areas with 12 domains that group 19 variables, totaling 56 questions. The scoring is done on a scale that can have up to four degrees depending on the characteristics of the variables, which enable the different domains to be scored, thus creating the individual's functional profile. The BAM was subjected to connecting with the ICF,[12] which revealed a good conceptual structure and significant concepts and presented itself as a comprehensive and integrating instrument to assess functioning, as recommended by the WHO.

The variables of the domains locomotion, physical autonomy, and instrumental autonomy, which in the instrument are scored in four levels, were dichotomized into "incapable/dependent" (0 = incapable and 1 = dependent on others) and "autonomous/independent" (2 = autonomous with auxiliary means and 3 = independent). The remaining variables followed the original values.[11] A total of 43 variables were studied and divided by the different ICF components and domains (Table 1).

Personal factors have not been classified by the WHO so far, although they should be included in any assessment/intervention process in order to know their contribution and influence on functioning. They are the particular history of an individual's life and lifestyle and encompass the characteristics that are not part of a health condition or state.7 For organization and similarity, personal factors were grouped into two dimensions: social, cultural, and economic aspects and health-related behaviors and events.

Statistical analysis

Categorical variables were analyzed by absolute and relative frequencies and numerical variables by central tendency and dispersion measures. The comparative analyses between sexes were performed using the Mann-Whitney test for categorical variables and the Student t-test for independent samples for numerical variables. The chi-square test was used to analyze the independence between sex and the variables under study, and Spearman's correlation coefficient was used to evaluate the association level. The statistical analysis considered a significance level of 0.05.

Results

The sample consisted of 451 individuals, with a mean age of 79.48 ± 7.46 years and a female prevalence (62.1%). The mean age of women was relatively higher than the men ($p = 0.037$; 80.5 ± 7.38 to 78.5 ± 7.52 years).

Of the 43 variables studied, sex differences were found in 17 (39.5%). Nineteen variables included in the personal factors were studied, with differences occurring in 11 (57.9%), namely in conjugality ($p \leq 0001$) and cohabitation ($p = 0.037$), with women being lonelier in both situations, and also in economic income ($p = 0.002$), with more unfavorable values for women. However, women showed healthier behaviors in all health-related habits. The independence regarding sex had an identical behavior to the differences found in the comparison between men and women, except for tobacco consumption (PPY; $x^2 = 0.211$) and the number of falls ($x^2 = 0.023$). The intensity of the association found ranged from weak to moderate: from $r_S = 0.098$ (with whom you live) to $r_S = 0.572$ (alcohol consumption). The distribution of the sample in relation to personal factors and the differences found between sexes and their association is listed in Tables 2.1 and 2.2.

In the environmental factors, women showed more need for assistive devices ($p \leq 0.001$), and the distribution of "who helps with activities" also revealed differences ($p \leq 0.001$): women mainly receive help from their children, while men receive it from their spouses.

Independence concerning sex had an identical behavior to the differences found in the comparison between men and women, and the intensity of the association for both variables in this component was weak. The results referring to environmental factors are presented in Table 3.

The differences found in body functions occurred in urinary incontinence (p = 0.021), where women showed a higher frequency in this dysfunction; nonetheless, sex was not associated with the presence of this condition. The results concerning this component are listed in Table 4.

Table 1 - Components, domains, and variables of the study according to the International Classification of Functioning, Disability and Health (ICF)

ICF Components	ICF Domains	Variables
Personal factors (n=19)	Social, economic, and cultural factors (n = 8)	Marital status Education Whom they live with Time spent alone Religious belief Worship practice Economic output Profession
	Health-related behaviors and events (n = 11)	Physical health perception Mental health perception Number of meals per day Tobacco consumption Packs per year (PPY) Alcohol consumption Average drink consumption per day Requires help from another person to perform activities Type of help Falls in the last year Sequelae of the falls
Environmental factors (n = 2)	Products and technologies (n = 1)	Need for assistive devices
	Support and relationships (n = 1)	Who helps with the activities
Body functions (n = 2)	Genitourinary functions (n = 1)	Urinary continence
	Digestive, metabolic, endocrine and functions (n =1)	Fecal continence
Activities/participation (n = 20)	Mobility (n = 6)	Walking at home Walking on the street Climbing/descending stairs Getting in/out of bed Sitting/getting up from the chair Using public transport
	Self-care (n = 5)	Washing oneself Dressing up/undressing Using the bathroom/toilet Eating Taking medication
	Communication (n = 1)	Using the telephone
	Life at home (n = 4)	Shopping Preparing meals Doing chores/housework Washing/drying clothes
	Main areas of life (n = 1)	Managing money
	Community, social, and civic life (n = 3)	Walking Practicing gymnastics/sports Performing other physical activities

Table 2.1 - Descriptive and inferential statistics of the variables of the personal factors component: social, economic, and cultural factors

Domains and variables	Women (n = 280)	Men (n = 171)	p-value Mann-Whitney; T-Student	p-value Chi-Square; r-Spearman
Marital status n (%)				
Widow/single/separated	184 (65.7)	72 (42.1)	< 0.001	x^2 < 0.001 p < 0.001 r = 0.231
Married/common-law marriage	96 (34.3)	99 (57.9)		
Education n (%)				
No schooling	89 (31.8)	49 (28.7)		
≤ 4 years of schooling	168 (60.0)	103 (60.2)	0,332	x^2 = 0.711 p = 0.333
> 4 years of schooling	22 (7.9)	18 (10.5)		
Does not know/no answer	1 (0.4)	1 (0.6)		
With whom they live n (%)				
Alone	93 (33.2)	41 (24.0)	0.037	x^2 =0.037 p = 0.037 r = 0.098
With others	187 (66.8)	130 (76.0)		
Time spent alone n (%)				
≥ 8 hours	93 (33.2)	55 (32.2)	0.818	x^2 = 0.818 p = 0.818
< 8 hours	187 (66.8)	116 (67.8)		
Religious belief n (%)				
No	26 (9.3)	48 (28.1)	< 0.001	x^2 < 0.001 p < 0.001 r = -0.250
Yes	254 (90.7)	121 (70.8)		
Does not know/no answer	0 (0.0)	2 (1.2)		
Worship practice n (%)				
No	117 (41.8)	131 (76.6)	< 0.001	x^2 < 0.001 p < 0.001 r = -0.348
Yes	163 (58.2)	38 (22.2)		
Doest not know/no answer	0 (0.0)	2 (1.2)		
Economic income n (%)				
No income	26 (9.3)	5 (2.9)		
≤ 250€	131 (46.8)	71 (41.5)	0.002	x^2 = 0.012 p = 0.002 r = 0.153
> 250€ e ≥ 500€	74 (26.4)	55 (32.2)		
> 500€	18 (6.4)	19 (11.1)		
Does not know/no answer	31 (11.1)	21 (12.3)		
Profession n (%)				
Unqualified[1]	225 (80.4)	124 (72.5)	0.080	x^2 = 0.132 p = 0.080
Qualified[2]	37 (13.2)	33 (19.3)		
Intermediate[3]	14 (5.0)	7 (4.1)		
Specialist[4]	3 (1.1)	5 (2.9)		
Does not know/no answer	1 (0.4)	2 (1.2)		

Note: [1]Examples: machine operator/factory worker, housekeeper; [2]Examples: seamstress, carpenter, farmer; [3]Examples: technicians, administrative personnel; [4]Specialists in the intellectual and scientific professions, such as university graduates, senior managers.

Table 2.2 - Descriptive and inferential statistics of the variables of the personal factors component: health-related behaviors and events

Domains and variables	**Women (n = 280)**	**Men (n = 171)**	**p-value Mann-Whitney; T-Student**	**p-value Chi-Square; r-Spearman**
Perception of physical health n (%)				
Very bad/bad/unstable	105 (37.5)	54 (31.6)		
Favorable/good/very good	163 (58.2)	112 (65.5)	0.163	$x^2 = 0.162$ p = 0.163
Does not know/no answer	12 (4.3)	5 (2.9)		
Perception of mental health n (%)				
Very bad/bad/unstable	59 (21.1)	25 (14.6)		
Favorable/good/very good	210 (75.0)	141 (82.5)	0.078	$x^2 = 0.580$ p = 0,581
Does not know/no answer	11 (3.9)	5 (2.9)		
Number of meals/day mean ± SD	4.38 ± 1.02	4.12 ± 1.12	0.013	$x^2 = 0.021$ p = 0.006 r = -0.131
Tobacco consumption n (%)				
No	269 (96.1)	112 (65.5)	< 0.001	$x^2 < 0.001$ p < 0.001 r = 0.410
Yes	11 (3.9)	59 (34.5)		
No. of units pack/year - mean ± SD	17.03 ± 8.50	38.28 ± 29.05	0.045	$x^2 = 0.211$ p = 0.014 r = 0.309
Alcohol consumption n (%)				
No	256 (91.4)	65 (38.0)	< 0.001	$x^2 < 0.001$ p < 0.001 r = 0.572
Yes	24 (8.6)	106 (62.0)		
Drinks/day - mean ± SD	1.03 ± 0.86	3.14 ± 2.70	< 0.001	$x^2 < 0.001$ p < 0.001 r = 0.492
Needs help with activities n (%)				
No	119 (42.5)	70 (40.9)	0.690	$x^2 = 0.690$ p = 0.691
Yes	161 (57.5)	101 (59.1)		
Type of help n (%)				
Self-care	15 (9.3)	5 (5.0)		
Instruments	57 (35.4)	48 (47.5)	0.437	$x^2 = 0.103$ p = 0.438
Both	89 (55.3)	48 (47.5)		
Falls in the last year n (%)				
≥ 4 falls	11 (3.9)	12 (7.0)		
2-3 falls	46 (16.4)	19 (11.1)		
1 fall	105 (37.5)	48 (28.1)	0.072	$x^2 = 0.023$ p = 0.072
No falls	116 (41.4)	89 (52.0)		
Does not know/no answer	2 (0.7)	3 (1.8)		
Sequelae of falls n (%)				
With mobility alterations	115 (41.1)	45 (26.3)		
No mobility changes	26 (9.3)	17 (9.9)		
No sequelae	21 (7.5)	17 (9.9)	0.003	$x^2 = 0.019$ p = 0.003 r = 0.139
No falls	116 (41.4)	89 (52.0)		
Does not know/no answer	2 (0.7)	3 (1.8)		

Table 3 - Descriptive and inferential statistics of the variables of the environmental factors component

Domains and variables	Women (n = 280)	Men (n = 171)	p-value Mann-Whitney; T-Student	p-value Chi-Square; r-Spearman
Products and technologies				
Need for assistive devices n *(%)*				
No	79 (28.2)	76 (44.4)	< 0.001	$x^2 < 0.001$ p < 0.001 r = -0.168
Yes	201 (71.8)	94 (55.0)		
Does not know/no answer	0 (0.0)	1 (0.6)		
Support and relationships				
Who helps with the activities n (%)				
Spouse	27 (16.8)	54 (53.5)	< 0.001	$x^2 < 0.001$ p < 0.001 r = -0.270
Children	70 (43.5)	19 (18.8)		
Other family member	32 (19.9)	10 (9.9)		
Friend/neighbor	7 (4.3)	3 (3.0)		
Institution	7 (4.3)	7 (6.9)		
Housekeeper	18 (11.2)	8 (7.9)		

Table 4 - Descriptive and inferential statistics of the variables of the body functions component

Domains and variables	Women (n = 280)	Men (n = 171)	p-value Mann-Whitney; T-Student	p-value Chi-Square; r-Spearman
Genitourinary functions				
Urinary continence n (%)				
Unable/does not control	11 (3.9)	7 (4.1)	< 0.021	$x^2 = 0.080$ p = 0.021 r = 0.108
Dependent on others	9 (3.2)	4 (2.3)		
Uses AM/sporadic incontinence[1]	87 (31.1)	35 (20.5)		
Independent	173 (61.8)	125 (73.1)		
Digestive, metabolic, and endocrine functions				
Fecal continence n (%)				
Unable/does not control	12 (4.3)	6 (3.5)	0.059	$x^2 = 0.283$ p = 0.059
Dependent on others	10 (3.6)	4 (2.3)		
Uses AM/sporadic incontinence[1]	60 (21.4)	26 (15.2)		
Independent	198 (70.7)	135 (78.9)		

Note: AM = auxiliary methods, such as diapers.

Of the 20 variables of activities/participation, differences were found in three (15%): in mobility, women were more vulnerable (walking on the street p = 0.034 and using transportation p = 0.004); in domestic life, men showed more dependence in the variable washing/drying clothes (p = 0.022). Regarding the independence of the variables, the behavior was identical to the differences found in the comparison between men and women, and the intensity of the association ranged from weak to moderate. The distribution of the sample regarding the activities/participation variables and the differences found between sexes and their association are presented in Table 5.

Table 5 - Descriptive and inferential statistics of the variables of the activities/participation component

Domains and variables	Women (n = 280)	Men (n = 171)	p-value Mann-Whitney; T-Student	p-value Chi-Square; r-Spearman
Mobility				
Walking at home n (%)				
Incapable/dependent	34 (12.1)	14 (8.2)	0.381	$x^2 = 0.380$ p = 0.381
Autonomous /independent	246 (87.9)	157 (91.8)		
Walking on the street n (%)				
Incapable/dependent	58 (20.7)	22 (12.9)	0.034	$x^2 = 0.034$ p = 0.034 r = 0.100
Autonomous /independent	222 (79.3)	149 (87.1)		
Climbing/descending stairs n (%)				
Incapable/dependent	77 (27.5)	34 (19.9)	0.069	$x^2 = 0.068$ p = 0.069
Autonomous/independent	203 (72.5)	137 (80.1)		
Getting in/out of bed n (%)				
Incapable/dependent	47 (16.8)	25 (14.6)	0.543	$x^2 = 0.542$ p = 0.543
Autonomous/independent	233 (83.2)	146 (85.4)		
Sitting/standing up from chairs n (%)				
Incapable/dependent	42 (15.0)	22 (12.9)	0.529	$x^2 = 0.529$ p = 0.530
Autonomous/independent	238 (85.0)	149 (87.1)		
Using public transport n (%)				
Incapable/dependent	150 (53.6)	68 (39.8)	0.004	$x^2 = 0.004$ p = 0.004 r = 0.134
Autonomous/independent	130 (46.4)	103 (60.2)		
Self-care				
Washing oneself n (%)				
Incapable/dependent	84 (30.0)	44 (25.7)	0.330	$x^2 = 0.329$ p = 0.330
Autonomous/independent	196 (70.0)	127 (74.3)		
Dressing/undressing n (%)				
Incapable/dependent	64 (22.9)	27 (15.8)	0.070	$x^2 = 0.070$ p = 0.070
Autonomous/independent	216 (77.1)	144 (84.2)		
Using the toilet/urinal n (%)				
Incapable/dependent	52 (18.6)	24 (14.0)	0.212	$x^2 = 0.212$ p = 0.213
Autonomous/independent	228 (81.4)	147 (86.0)		
Eating n (%)				
Incapable/Dependent	24 (8.6)	15 (8.8)	0.941	$x^2 = 0.941$ p=0.942
Autonomous/independent	256 (91.4)	156 (91.2)		
Taking madication n (%)				
Incapable/dependent	62 (22.1)	43 (25.2)	0.465	x^2=0.464; p = 0.465
Autonomous/independent	218 (77.9)	128 (74.8)		
Communication				
Using the telephone n (%)				
Incapable/dependent	65 (23.2)	52 (30.4)	0.091	$x^2 = 0.091$ p = 0.091
Autonomous/independent	215 (76.8)	119 (69.6)		
Homelife				
Shopping n (%)				
Incapable/dependent	122 (43.6)	68 (39.8)	0.428	$x^2 = 0.427$ p = 0.428
Autonomous/independent	158 (56.4)	103 (60.2)		
Preparing meals n (%)				
Incapable/dependent	103 (36.8)	75 (43.9)	0.136	$x^2 = 0.136$ p = 0.137
Autonomous/independent	177 (63.2)	96 (56.1)		
Doing housework n (%)				
Incapable/dependent	118 (42.1)	80 (46.8)	0.336	$x^2 = 0.335$ p = 0.336
Autonomous/independent	162 (57.9)	91 (53.2)		
Washing/drying clothes n (%)				
Incapable/dependent	108 (38.6)	86 (50.3)	0.015	$x^2 = 0.015$ p = 0.015 r = -0.115
Autonomous/independent	172 (61.4)	85 (49.7)		
Major areas of life				
Managing money n (%)				
Incapable/dependent	80 (28.6)	54 (31.6)	0.498	$x^2 = 0.498$ p = 0.499
Autonomous/independent	200 (71.4)	117 (68.4)		
Community, social, and civic life				
Walking[1] - mean ± SD	2.4 ± 3.4	2.6 ± 3.7	0.565	$x^2 = 0.116$ p = 0.747
Gymnastics/sports[1] - mean ± SD	0.1 ± 0.6	0.1 ± 0.7	0.742	$x^2 = 0.065$ p = 0.236
Other physical activity[2] - mean ± SD	0.9 ± 2.7	1.4 ± 3.7	0.070	$x^2 = 0.642$ p = 0.178

Note: [1]Hours/week; [2]Hours/week of other physical activity such as gardening, farming, or animal husbandry.

Discussion

The most significant differences between men and women occurred in the personal factors component. This result corroborates the literature, which emphasizes the importance of studying social, economic, and cultural asymmetries as determinants of health status and functioning in populations because, when modifiable, they can exert an equal or greater power than those related to biological and physiological differences.[8]

The "widowed/single/separated" conjugality was higher among women due to their greater longevity, a situation that tends to progress with advancing age mainly because of widowhood.

No differences were found in schooling, with a meager rate in the total sample (over 90% of the individuals had no schooling or schooling of 4 years or less), although the 2011 Census reported that the illiteracy rate for women is roughly twice that of men (6.8 against 3.5%). Although the 2011 Census findings revealed an overall decline in the illiteracy rate from 9.0 to 5.2% compared to 2001, Portugal still has a high proportion of people with no schooling or poor schooling skills in older individuals. This is a challenging aspect in developing educational policies for future elderly generations, since the extension of schooling is a determinant that will bring benefits to health literacy and, consequently, to the population's health,[13] while reducing the burden on health services.[2]

The percentage of elderly living alone at home was higher among women, which must be related to the greater longevity of women, which, precipitating their widowhood, makes them also live more isolated. Nevertheless, the percentage of individuals spending over 8 h alone was higher than individuals living alone (32.8 and 29.7%, respectively), suggesting that even those who live with others spend a lot of time alone; it is likely the widowed elderly who live with their children spend much of their time working away from home.

Women had more religious belief and worship practice, although the latter in a markedly lower value (from 90.7 to 58.2%). The interest and number of studies on religiosity and spirituality in the elderly have grown exponentially in the last few years, with numerous studies on their association with functioning, well-being, participation, and quality of life, both in the context of health and disease. Religious belief and practices are common in Portugal, especially among older age groups and women. Despite inter- and intra-generational declines in religious practice, the religiosity of the Portuguese remains high in practices, attitudes towards the church, and people's self-perception as religious.[14] Spiritual development and religiosity tend to increase with aging, and some aspects of spirituality intensify and are associated with this process. In essence, spirituality in later life is about finding a core meaning in life and applying that meaning to one's relationship with God and others;[15] women usually tend to be more religious in research. This conclusion is argued by the fact that many of the social aspects of religion contain feminine traits, such as obedience and caring for others. Another reason for this distinction is socialization: women tend to have more extensive social ties and social support systems, both within the church and in other secular settings, making them more participatory and collective.[9] Worship practice revealed a lower adherence on the part of the sample members, and this is probably because they have difficulty traveling to places of worship or, generically speaking, because a global decrease in their participation has been observed.

Research is unanimous in referring to the lower economic income of elderly women, and this is derived from the precariousness of their schooling and professional specialization,[6,8] salthough in this study, neither schooling nor profession was different concerning sex. The elderly, especially women, are one of the most vulnerable groups to poverty due to the low value of their pensions, a vulnerability that has been accentuated by the current economic and social situation.[8,13,16] The breakdown of inequality indices confirms the vulnerability of the elderly population to poverty, as well as more disadvantaged situations in terms of health status and education levels, also verifying a significant disparity between sexes, to the disadvantage of women, especially considering the elderly population in the first decile of poverty.[8,13] These data reflect the history of accessibility to schooling in Portugal in the first decades of the last century, and this is materialized primarily in women.

In the same way that overall low schooling was observed, a poor professional differentiation was also found (77.4% of individuals with unskilled occupations). Education is undoubtedly inseparable from qualification and professional differentiation, the manifestation of which is observed in the older generations and, above

all, if we consider the percentage of those individuals linked to the primary sector. The socioeconomic status reflected by education, income, and professional activity must be regarded as determinants of longevity and mortality;[8] this is because, in addition to the important and intricate relationship they establish among themselves, they project the possibility of access to health care and relate to individuals' health condition and functioning.[2,4,16]

The perception of physical and mental health status is a recommended indicator in population health monitoring; it is recognized as a predictor of morbidity, functional decline, and mortality[5,16] as well as for its relationship with health-related quality of life.[8] The perception of mental health was more positive than that of physical health, and in both, men showed more positive values, although without significant differences. Most studies show a more unfavorable perception for women, and this is associated with their greater longevity and the higher presence of chronic conditions.[1,16]

Overall, in this study, the female sex showed healthier habits or behaviors regarding consuming meals, smoking, and alcohol. The average number of meals per day corresponds to the four main daily meals, and a high number of meals per day is one of the variables contemplated in healthy eating habits and balanced diets, constituting a reference in the screening of risk groups and functioning.[17] This factor, along with the quality of nutrients, can improve chronic disease control, health, and functioning at any age. Culturally, women are more associated with food acquisition and preparation, which in itself predisposes them to a greater tendency to consume more meals.

Regarding tobacco consumption, this study found low values (15.5% for the total sample); its consumption tends to decrease with age, being almost nonexistent in females. For cultural reasons and regarding older age groups, tobacco consumption is more common among males and more educated individuals, with the latter having to add the economic superiority that facilitates its acquisition. Nonetheless, although significant differences were observed in the number of PPY, this proved not to be correlated to sex.

In Portugal and the older generations, alcohol consumption is substantially linked to males due to cultural, economic, and socialization issues, as evidenced by the associated diseases and mortality. We also concluded that alcohol consumption was higher than tobacco consumption (28.8% vs. 15.5%), which is not unrelated to the fact that Portugal has important wine production as it is rooted in its consumption in the main meals.

Over half of the individuals reported requiring help in performing daily activities, especially more complex ones, although with no differences in sex. As we will see later in the analysis of the different activities, the differences in functioning between sexes were basically related to mobility/locomotion. This may be why no sex differences were found in the need and type of help to carry out activities.

Although the number of falls was not significantly different between men and women, the sequelae observed were higher in women. The literature usually refers that women fall more often,[18] although this differentiation tends to disappear at more advanced ages,[6] as previously reported herein. The justification for the higher number of sequelae in women may be their greater frailty and prevalence of sarcopenia and osteoporosis,[18,19] but also, as observed in our study, it may be linked to difficulties in mobility and marital status. Indeed, impairment in gait dynamics (e.g., changes in direction and speed) leads to more severe sequelae after falls.[5] Nonetheless, some studies suggest that the presence of a partner or cohabitation may be a protective factor for this risk[5,19] based on the support and supervision they can provide.

About two-thirds of the individuals (65.6%) reported needing an assistive device, and this use was higher among women. The ease of access and technological development of assistive devices increased their use, allowing the elderly population to maintain higher and longer levels of independence; the use of visual, hearing, and walking aids increases with age due to the structural and physiological changes associated with them. Considering that in the present sample women were older and had more difficulties in locomotion, this may explain their greater need. Some studies also specify a higher prevalence of women associated with a greater demand for health care, which increases the opportunity to use these devices.[1,20]

The need for help in performing activities is mainly provided by children (34.0%) in the case of women and by spouses (30.9%) for men. Family support corresponded to 80.9% of the cases, while institutional support was observed in 5.3% of the situations. The literature is unanimous in recognizing that the role of

the primary informal caregiver is fundamentally linked to women,[21-23] and the explanations for the sex differences in informal care rely mainly on redundant arguments indicating that caregiving is not part of men's social and cultural expectations. The affinity between longevity, women, and widowhood means that family help is provided mainly by daughters. For the same proximity, but for opposite reasons, younger people, especially men, who are more likely to have a partner, see the need for support. Besides the family relationship and sex, cohabitation is also a decisive factor for the caregiver's option,[21,22] presupposing a common experience whose physical and affective proximity is established in the care and that for widowers is reflected in the children, while for married people, in the spouses. In recent years, the maintenance of informal support has raised several questions and debates that are based, among others, on its sustainability. The changes in recent years in the demographic, social, family, and economic spheres show increasing unavailability for the so-called "family care potential," which compromises the much desired "aging at home."[24] However, the sustainability of institutional resources backed by the welfare state has progressively and increasingly shown its inability to provide support. Finding the balance between institutional and informal support is a major challenge of the coming years of social policies on aging.

The frequency of urinary incontinence proved to be different between men and women, although this was regardless of the sex. The prevalence of urinary incontinence presents very different results in the literature, reflecting the various methodological approaches and association variables under study, albeit being unanimous that it is more prevalent in females and increases exponentially with age and functional dependence. Nonetheless, the linearity and causality between functioning and urinary incontinence remain unclear, and the doubt remains if it is the latter that determines lower functioning levels or if these levels predispose to a disability; nevertheless, their presences coexist and are often contemporary. The structural and physiological causes associated with female urinary incontinence are the weakening of the bladder and sphincter muscles, vaginal and urethral atrophy, difficulty in retaining and emptying the bladder, and increased residual urine volume, in addition to multiparity, hysterectomy, and hormonal alterations due to menopause.[25] Less prevalent than urinary incontinence, and therefore subject to fewer studies, fecal incontinence appears in the literature almost exclusively associated with age and some specific health conditions, such as chronic diarrhea or diabetes.[26]

Along with age, sex is one of the demographic characteristics with the most significant weight in differentiating the independence of the elderly, tending globally and positively towards men.[1-3] It is not possible to state that the present study results corroborate this conclusion; for the 20 tasks analyzed, differences were only found in 3 (15%). Other authors have already observed this conclusion, especially at older ages.[5,6]

The worse performance observed in women regarding mobility is usually associated with certain health conditions that are more prevalent in females: arthritic conditions, arthrosis, depression, biological markers resulting from menopause (sarcopenia and osteoporosis), longer life expectancy[1,2] and, according to some authors, socioeconomic vulnerability.[3]

In the remaining activities/participation analyzed, differences were only found in the activity "washing/drying clothes," whose results were more unfavorable for men. Usually, men have greater difficulties in domestic life activities, which is more due to cultural and educational reasons than neuromotor disabilities. The "washing/drying clothes" task may be an example of this difference, since it remains socially associated with women, even in younger generations.

The American College of Sports Medicine and the American Heart Association recommend regularly practicing 150 min of moderate-intensity exercise per week for the elderly population in order for health benefits to be observed.[27] Given these recommendations, the results were positive and contributed to the performance observed in the activities as a protective variable against disability.[28] The rurality of the sample may have also contributed to this observation, as it has the underlying habit of people moving primarily on foot due to relational proximities and lack of public transportation.

Despite the promising data found, this study encountered several limitations, including i) the fact that data collection was made through self-reporting, which may have caused some information bias and ii) comorbidities and pain were not considered variables usually related to the functioning profile.

Conclusion

Women are more unprotected in the social and economic dimensions, while men manifest more vulnerable health habits. These differences are linked to demographic issues of longevity and cultural and socialization differences. Differences in activities/participation tend to be blurred between the sexes.

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