RESEARCH PAPER (ORIGINAL)

The oldest old: multidimensional functional assessment

Os muito idosos: avaliação funcional multidimensional

Los ancianos mayores: evaluación funcional multidimensional

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Abstract

Theoretical framework: When translated into population ageing, the demographic transition process imposes an adaptation of the healthcare and social services to the needs and expectations of the elderly. The definition of interventions requires a multidimensional functional assessment.
Objectives: To assess the functional capacity of individuals aged 75 years and older from the municipality of Coimbra in five areas (social resources, economic resources, mental health, physical health and activities of daily living).
Methodology: Quantitative, descriptive and correlational study, with a sample of 1153 individuals. The Questionário de Avaliação Funcional Multidimensional para Idosos was used to classify the participants from *excellent* to *totally impaired* in each functional area.
Results: The participants were classified with severe or total impairment in the following areas: 12.5% in social resources; 15.4% in economic resources; 16.0% in mental health; 45.6% in physical health; and 23.6% in activities of daily living. Women and individuals aged 85 years and older usually had lower scores.
Conclusion: The multidimensional assessment provides data for an integrated intervention of healthcare and social services, taking into account gender and age differences.

Keywords: population ageing; geriatric assessment.

Resumo

Enquadramento: O processo de transição demográfica, traduzido em envelhecimento populacional, impõe a adequação de serviços de saúde, e sociais, às necessidades e expectativas dos idosos. A definição de intervenções exige uma avaliação funcional multidimensional.
Objetivos: Avaliar a capacidade funcional em cinco áreas (recursos sociais, recursos económicos, saúde mental, saúde física e atividades de vida diária) da população com idade ≥75 anos do concelho de Coimbra.
Metodologia: Estudo quantitativo, descritivo e correlacional, com amostra constituída por 1153 indivíduos. Foi utilizado o Questionário de Avaliação Funcional Multidimensional para Idosos classificando os participantes, em cada área funcional, de *excelente* a *limitação total*.
Resultados: Classificados com *limitação grave* ou *total* encontramos na área de: recursos sociais 12,5% dos participantes; recursos económicos 15,4%; saúde mental 16,0%; saúde física 45,6%; e atividades de vida diária 23,6%. As mulheres e os indivíduos com idade ≥85 anos apresentam tendencialmente piores classificações.
Conclusão: A avaliação multidimensional fornece dados que permitem a intervenção integrada dos serviços sociais e de saúde atendendo a diferenças de género e idade.

Palavras-chave: envelhecimento da população; avaliação geriátrica.

Resumen

Marco contextual: El proceso de transición demográfica, traducido en el envejecimiento de la población, impone la adecuación de los servicios de salud y sociales a las necesidades y expectativas de los ancianos. La definición de las intervenciones requiere una evaluación funcional multidimensional.
Objetivos: Evaluar la capacidad funcional en cinco áreas (recursos sociales, recursos económicos, salud mental, salud física y actividades de la vida diaria) de la población de ≥ 75 años de Coímbra.
Metodología: Estudio cuantitativo, descriptivo y correlacional con una muestra de 1.153 individuos. Se utilizó el *Questionário de Avaliação Funcional Multidimensional para Idosos* y los participantes se clasificaron en cada área funcional de *excelente* a *limitación total*.
Resultados: Clasificados con *limitación grave* o *total* se encuentra, en el área de recursos sociales, el 12,5 % de los participantes; recursos económicos el 15,4 %; salud mental 16,0 %; salud física 45,6 % y actividades de la vida diaria el 23,6 %. Las mujeres y las personas de ≥ 85 años tienden a presentar clasificaciones peores.
Conclusión: La evaluación multidimensional proporciona datos que permiten la intervención integrada de los servicios sociales y de salud teniendo en cuenta las diferencias de género y edad.

Palabras clave: envejecimiento de la población; evaluación geriátrica.

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Introduction

Population ageing is a global phenomenon characterized by an increase in the average life expectancy and decrease in the fertility rate (World Health Organization, 2011). This process is irreversibly associated with an increased disability, intensifying healthcare and social costs. It is, therefore, essential to create healthcare, social and economic conditions for individuals to remain autonomous and independent as many years as possible (WHO, 2011).

Therefore, the project *The oldest old: Coimbra aging study (Os muito idosos: estudo do envelhecimento em Coimbra),* PTDC/CS-SOC /114895/2009, aims to assess the functional capacity, as well as the use and need of healthcare and social support services by individuals aged 75 years and older.

The information obtained will allow the social and health policy-makers to adapt and implement interventions aimed at this population, based on the results of the multidimensional functional assessment. This article will focus primarily on data relating to the assessment of the functional capacity, highlighting the gender and age differences between the groups, seeing that it is an essential component for planning the provision of healthcare.

Background

Portugal is undergoing a process of population aging similar to that of other developed countries, with a decline in the birth rate, an increase in longevity and, more recently, an increase in the emigration flows of the working-age population (Instituto Nacional de Estatística, 2013).

The ageing index is currently of 131 older people (≥65 years) for every 100 youths (0-14 years), and the average life expectancy is of 79.8 years (INE, 2013). This phenomenon is more evident in women, thus reflecting their greater longevity (INE, 2013).

There is also an increase in the number and proportion of the oldest-old (persons aged 85 years and older), who represent approximately 12.0% of the population in developed countries and are even the fastest growing group in some countries (WHO, 2011). The individuals in this age group will naturally have greater disability, which is a relevant focus of study and intervention.

The World Health Organization defines active ageing as a "process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age" (2002, p. 12). It is, therefore, a process which depends on a variety of determinants, particularly social, economic, behavioural and personal factors, and those related to the physical environment and health and social service systems (WHO, 2002).

The concept of active aging is closely linked to the concept of functional capacity, which is defined by the maintenance of autonomy and independence of the elderly in their daily lives, even when manifesting some physical, mental or social impairment (Cardoso & Costa, 2010; World Health Organization, 2002).

The functional capacity must be assessed in order to plan specific interventions aimed at eliminating risk factors for disability and, simultaneously, promote health and prevent diseases that influence the functional capacity of the elderly, particularly those aged over 75 years (Ferreira, Maciel, Costa, Silva, & Moreira, 2012).

Multidimensional assessment tools are the most appropriate ones for this purpose, as they take into account the multiplicity of health diagnoses to which the elderly are subjected (Patiño Vásquez-Vizoso, & Veras, 1996; Rodrigues, 2009) and allow assessing not only their physical health but also their mental health, social resources, economic resources and Activities of Daily Living (ADLs).

This study used the Portuguese version of the *Older Americans Resources and Services* (OARS), validated for the Portuguese population (Ferreira & Rodrigues, 1999; Rodrigues, 2008) and designated *Questionário de Avaliação Funcional Multidimensional para Idosos* (QAFMI). This questionnaire allows assessing the functional capacity and the use and need of services, as well as providing data for intervention planning.

Primary health care emerges as a level capable of developing and promoting this intervention, maximizing and fostering the substantiated allocation of resources and providing information about the elderly population to social and health policy-makers, which will enable a more targeted intervention (Rodrigues, 2009).

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Methodology

Study design
This is a quantitative study of descriptive and correlational nature.

Population and sample
The target population was composed of users aged 75 years and older (by December 31st, 2011) residing in the geographical area of the six healthcare centres of the municipality of Coimbra, Cluster of Healthcare Centres Baixo Mondego.

Based on the list of users, the sample was divided according to gender, year of birth, and area of residence. The sample was randomly selected to each stratum.

The population included 16474 individuals. The sample obtained was composed of 1153 participants, corresponding to 7.0% of the population.

Procedure for data collection
The first contact was made by the Nurse of the healthcare centre and, if the person was available, he/she would be contacted by the researchers.

Data was collected between June 2012 and October 2013. The interviews took place at home or in the health care centre according to the interviewee's preferences, and lasted, on average, 47 minutes.

Data collection tool
The questionnaire used was the QAFMI. It starts with the socio-demographic characterisation and the *Short Portable Mental Status Questionnaire* (SPMSQ) which assesses the cognitive function, determining if the elderly is able to answer the questionnaire or if it is necessary to rely on an informant.

The QAFMI is divided two parts. Part A assesses the level of functioning in five areas: social resources, economic resources, mental health, physical health, and ADLs. Part B collects information on the use of six sets of services over the past six months (health; assessment and coordination; general support; economic support, social and recreational support; and non-classified), in a total of 23 services.

The social resources are assessed by the amount and adequacy of social interaction and by the availability of help in the event of illness. The assessment of economic resources focuses on the income and self-assessment of economic needs. Mental health

is assessed using the SPMSQ, the Short Psychiatric Evaluation Schedule to identify psychiatric symptoms, and also self-assessment. The assessment of physical health focuses on the existence of pathologies, use of medication and self-assessment. Lastly, the area of the ADLs is assessed using the instrumental and physical ADL scales.

The QAFMI/OARS classifies the respondents' functional capacity in each functional area from 1 to 6: *excellent*, *good*, *mildly impaired, moderately impaired, severely impaired* and *totally impaired*. This classification can be defined by the interviewer (questions 87 to 91 of the questionnaire), or by using a software. The latter was used in the study as it minimizes the interviewer's bias. These aspects are further addressed in the work of Ferreira, Rodrigues, and Nogueira (2006).

Statistical data analysis
Data were processed using the *Statistical Package for Social Sciences* (SPSS®, version 22.0 for Windows) software. Summary statistics and the chi-square test were used to compare proportions and respective measure of association (Cramer's V). The tables display data concerning the comparison between both age groups[A] and between genders in each age group (75-84 years[B] and ≥85 years[C]).

Ethical-legal considerations
The study was approved by the Regional Central Health Administration, the Portuguese Data Protection Authority (authorization no. 1713/2012) and the Ethics Committee of the Health Sciences Research Unit: Nursing of the Nursing School of Coimbra (assent no. 90-05/ 2012). At the time of the interview, the individual was informed of the study objectives and the confidentiality of the data collected, and signed the informed consent.

Results

The sample is composed of 422 males and 731 females. As for the age group, 814 individuals are aged between 75 and 84 years and 339 individuals are 85 years or more.

In relation to their marital status, most single participants were women (10.1% versus 1.4% of males), whereas the percentage of married men is

higher (76.1% of men and 33.9% of women). The widowed status is more frequent among women (52.5% and 20.6%, respectively).

Regarding the level of education, 8.8% of men and 26.0% of women did not know how to read or write. A total of 51.4% of men and 45.6% of women had completed primary education, whereas 9.5% of men and 6.0% of women had completed higher education. Data are presented based on gender and age group, which are key aspects to plan interventions, as the overall data, *per se*, provide a wider picture of the population under study.

In the area of social resources, it was not possible to obtain subjective information from 54 individuals to build the final indicator, thus this functional area has only 1099 respondents.

In the 75-84 age group (Table 1), 22.0% of men are classified as *excellent*, 36.0% as *good* and 7.4% as *severely or totally impaired*. As for women, 15.3% are classified as *excellent*, 26.8% as *good* and 17.5% as

severely or totally impaired. This gender difference is significant (p<0.001), with women showing the worst scores.

In the ≥85 age group, 29.7% of men have *excellent* social resources and none is classified as *totally impaired*. In relation to women, 12.5% have *excellent* social resources, 38.9% are *mildly impaired* and 12.5% are *severely or totally impaired*. In this age group, a significant difference between genders was also found (p<0.001), with women showing the worst scores.

In the total sample, 17.8% of the participants are classified as *excellent*, 30.7% as *good*, 26.2% as *mildly impaired*, 12.7% as *moderately impaired*, 8.6% as *severely impaired*, and 3.9% as *totally impaired*. The differences are significant in terms of age group (p<0.01), with the 75-84 age group showing the worst scores, and gender (p<0.001), with women showing the worst scores.

Table 1

Distribution according to the classification of the model MFAQI/OARS in area of social resources by gender and age group. It includes the results of the chi-square test for proportion comparison (χ^2) and Cramer's V measure of association

Age group[A] (years)	Classification	Gender		
		Male	Female	Total
		n (%)	n (%)	n (%)
75-84[B]	Excellent	69 (22.0)*	73 (15.3)	142 (17.9)
	Good	113 (36.0)*	128 (26.8)	241 (30.4)
	Mildly impaired	76 (24.2)	110 (23.0)	186 (23.5)
	Moderately impaired	33 (10.5)	83 (17.4)*	116 (14.6)*
	Severely impaired	14 (4.5)	59 (12.3)*	73 (9.2)
	Totally impaired	9 (2.9)	25 (5.2)*	34 (4.3)
	Total	314 (100.0)	478 (100.0)	792 (100.0)
≥85[C]	Excellent	27 (29.7)*	27 (12.5)	54 (17.6)
	Good	30 (33.0)	66 (30.6)	96 (31.3)
	Mildly impaired	18 (19.8)	84 (38.9)*	102 (33.2)*
	Moderately impaired	12 (13.2)*	12 (5.6)	24 (7.8)
	Severely impaired	4 (4.4)	18 (8.3)	22 (7.2)
	Totally impaired	- (0.0)	9 (4.2)*	9 (2.9)
	Total	91 (100.0)	216 (100.0)	307 (100.0)

*Standardized adjusted residuals >1.96
[A] χ^2=18.298; p=0.003; CV=0.13; [B] χ^2=31.472; p=0.000; CV=0.20; [C] χ^2=27.834; p=0.000; CV=0.30.

In the area of economic resources (Table 2), 41.9% of men in the 75-84 age group were classified as *good*, 35.6% as *moderately impaired* and 9.7% as *severely or totally impaired*. As for women, 35.4% are

moderately impaired in this area, and 13.9% of the patients appear to be *severely or totally impaired*. These gender differences are significant (p<0.05), with women showing worst scores.

Regarding the ≥85 age group, none of the participants was classified as *excellent*. Among men, 39.2% were classified as *good* and 18.6% as *severely or totally impaired*. As for women 40.1% are *moderately impaired* and 24.9% are *severely or totally impaired*. These differences are significant (p<0.01), with women showing worst scores.

In the total sample, 0.3% of the participants are classified as *excellent*, 32.8% as *good*, 15.6% as *mildly impaired*, 35.9% as *moderately impaired*, 11.7% as *severely impaired* and 3.7% as *totally impaired*. A significant difference was found between age groups (p< 0.001), with older people showing worst scores, and genders (p< 0.001), with women showing worst scores.

Table 2

Distribution according to the classification of the MFAQ/OARS model in the area of economic resources by gender and age group. It includes the results of the chi-square test for proportion comparison (χ2) and Cramer's V measure of association

Age group (years)[A]	Classification	Gender		
		Male	Female	Total
		n (%)	n (%)	N (%)
75-84[B]	Excellent	1 (0.3)	2 (0.4)	3 (0.4)
	Good	134 (41.9)*	157 (31.8)	291 (35.7)*
	Mildly impaired	40 (12.5)	91 (18.4)*	131 (16.1)
	Moderately impaired	114 (35.6)	175 (35.4)	289 (35.5)
	Severely impaired	21 (6.6)	54 (10.9)	75 (9.2)
	Totally impaired	10 (3.1)	15 (3.0)	25 (3.1)
	Total	320 (100.0)	494 (100.0)	814 (100.0)
≥85[C]	Excellent	- (0.0)	- (0.0)	- (0.0)
	Good	40 (39.2)*	47 (19.8)	87 (25.7)
	Mildly impaired	13 (12.7)	36 (15.2)	49 (14.5)
	Moderately impaired	30 (29.4)	95 (40.1)	125 (36.9)
	Severely impaired	14 (13.7)	46 (19.4)	60 (17.7)*
	Totally impaired	5 (4.9)	13 (5.5)	18 (5.3)
	Total	102 (100.0)	237 (100.0)	339 (100.0)

*Standardized adjusted residuals >1.96
[A] χ2=27.145; p=0.000; CV=0.15; [B] χ2=13.840; p=0.017; CV=0.13; [C] χ2=14.286; p=0.006; CV=0.21.

In the mental health area (Table 3), 50.9% of men in the 75-84 age group were classified as *good*, 18.4% as *moderately impaired* and 6.3% as *severely or totally impaired*. Regarding women, 27.9% are classified as *good*, 26.1% as *mildly impaired* and 17.0% as *severely or totally impaired*. These gender differences are significant (p<0.001).

In the ≥85 age group, 33.3% of men show a *good* functional capacity in this area, 26.5% a *mildly impairment* and 18.6% a *severe or total impairment*. As for women, 26.2% are classified as *mildly impaired*,

24.5% as *moderately impaired* and 25.7% as *severely or totally impaired*. In this age group, significant gender differences were also found (p< 0.001).

In the total sample, 11.7% of the participants are classified as *excellent*, 32.0% as *good*, 24.0% as *mildly impaired*, 16.3% as *moderately impaired*, 16.0% as *severely impaired*, and 3.7% as *totally impaired*. Differences were found between age groups (p<0.001) and genders (p<0.001), with the elderly and the women showing the worst scores.

Table 3

Distribution according to the classification of the MFAQ/OARS model in the area of mental health by gender and age group. It includes the results of the chi-square test for proportion comparison (χ2) and Cramer's V measure of association

Age group (years) [A]	Classification	Gender		
		Male	Female	Total
		n (%)	n (%)	n (%)
75-84[B]	Excellent	51 (15.9)*	47 (9.5)	98 (12.0)
	Good	163 (50.9)*	138 (27.9)	301 (37.0)*
	Mildly impaired	59 (18.4)	129 (26.1)*	188 (23.1)
	Moderately impaired	27 (8.4)	96 (19.4)*	123 (15.1)
	Severely or totally impaired	20 (6.3)	84 (17.0)*	104 (12.8)
	Total	320 (100.0)	494 (100.0)	814 (100.0)
≥85[C]	Excellent	15 (14.7)	22 (9.3)	37 (10.9)
	Good	34 (33.3)*	34 (14.3)	68 (20.1)
	Mildly impaired	27 (26.5)	62 (26.2)	89 (26.3)
	Moderately impaired	7 (6.9)	58 (24.5)*	65 (19.2)
	Severely or totally impaired	19 (18.6)	61 (25.7)	80 (23.6)*
	Total	102 (100.0)	237 (100.0)	339 (100.0)

*Standardized adjusted residuals >1.96
[A] χ2=42.647; p=0.000; CV=0.19; [B] χ2=72.515; p=0.000; CV=0.30; [C] χ2=27.802; p=0.000; CV=0.29.

In the physical health area (Table 4), none of the participants was classified as having an *excellent* or *good* functional capacity. In the 75-84 age group, 61.9% of men are classified as being *moderately impaired* and 37.8% as being *severely or totally impaired.* Regarding women, 57.1% are classified as *moderately impaired* and 42.6% as *severely or totally impaired.*

In the ≥85 age group, 51.0% of men are classified as *moderately impaired* and 49.0% as *severely or totally impaired.* As for women, 39.2% are classified as *moderately impaired* and 60.8% as *severely or totally impaired.*

In the total sample, 0.3% of the participants are classified as being *mildly impaired*, 54.2% as *moderately impaired*, 24.7% as *severely impaired* and 17.9% as *totally impaired.* The difference between the age groups (p<0.001) is significant, with the oldest-old showing the worst scores. With regard to gender, the difference in the total sample is significant (p<0.01), with women showing the worst scores. Despite this, such difference was not observed within each age group.

Table 4

Distribution according to the classification of the MFAQ/OARS model in the area of physical health by gender and age group. It includes the results of the chi-square test for proportion comparison (χ2) and Cramer's V measure of association

Age group (years) [A]	Classification	Gender		
		Male	Female	Total
		n (%)	n (%)	n (%)
75-84[B]	Excellent	- (0.0)	- (0.0)	- (0.0)
	Good	- (0.0)	- (0.0)	- (0.0)
	Mildly impaired	1 (0.3)	2 (0.4)	3 (0.4)
	Moderately impaired	198 (61.9)	282 (57.1)	480 (59.0)*
	Severely impaired	95 (29.7)	146 (29.6)	241 (29.6)*
	Totally impaired	26 (8.1)	64 (13.0)	90 (11.1)
	Total	320 (100.0)	494 (100.0)	814 (100.0)

		Male	Female	Total
≥85[C]	Excellent	- (0.0)	- (0.0)	- (0.0)
	Good	- (0.0)	- (0.0)	- (0.0)
	Mildly impaired	- (0.0)	- (0.0)	- (0.0)
	Moderately impaired	52 (51.0)	93 (39.2)	145 (42.8)
	Severely impaired	24 (23.5)	54 (22.8)	78 (23.0)
	Totally impaired	26 (25.5)	90 (38.0)	116 (34.2)*
	Total	102 (100.0)	237 (100.0)	339 (100.0)

*Standardized adjusted residuals >1.96

[A] $\chi2=88.458$; p=0.000; CV=0.28; [B] $\chi2=4.900$; p=0.179; [C] $\chi2=5.563$; p=0.062.

As shown in Table 5 concerning the area of ADLs, in the 75-84 age group, 43.1% of men are classified as *excellent or good*, 34.1% as *moderately impaired* and 11.2% as *severely or totally impaired*. Among women, 38.1% are classified as *excellent or good*, 33.0% as *mildly impaired* and 16.2% as *severely or totally impaired*, with women showing the worst scores (p<0.001).

In the ≥85 age group, 47.1% of men are classified as *moderately impaired* and 35.3% as *severely or totally impaired*. As for women, 19.8% are classified as *moderately impaired* and 50.7% as *severely or totally impaired*. In this age group, women also show the worst scores (p<0.001).

In the total sample, 31.4% of the participants are classified as *excellent or good*, 21.9% as *mildly impaired*, 23.2% as *moderately impaired*, 7.1% as *severely impaired* and 16.5% as *totally impaired*. Differences were found between age groups (p<0.001), with the oldest-old showing worst scores, and between genders (p<0.001), with greater level of impairment among women.

Table 5

Distribution according to the classification of the MFAQ/OARS model in the area of ADLs by gender and age group. It includes the results of the chi-square test for proportion comparison (χ2) and Cramer's V measure of association

Age group (years) [A]	Classification	Gender		
		Male	Female	Total
		n (%)	n (%)	n (%)
75-84[B]	Excellent or good	138 (43.1)	188 (38.1)	326 (40.0)*
	Mildly impaired	37 (11.6)	163 (33.0)*	200 (24.6)*
	Moderately impaired	109 (34.1)*	63 (12.8)	172 (21.1)
	Severely impaired	10 (3.1)	32 (6.5)*	42 (5.2)
	Totally impaired	26 (8.1)	48 (9.7)	74 (9.1)
	Total	320 (100.0)	494 (100.0)	814 (100.0)
≥85[C]	Excellent or good	8 (7.8)	28 (11.8)	36 (10.6)
	Mildly impaired	10 (9.8)	42 (17.7)	52 (15.3)
	Moderately impaired	48 (47.1)*	47 (19.8)	95 (28.0)*
	Severely impaired	9 (8.8)	31 (13.1)	40 (11.8)*
	Totally impaired	27 (26.5)	89 (37.6)*	116 (34.2)*
	Total	102 (100.0)	237 (100.0)	339 (100.0)

*Standardized adjusted residuals >1.96

[A] $\chi2=186.798$; p=0.000; CV=0.40; [B] $\chi2=84.062$; p=0.000; CV=0.32; [C] $\chi2=26.492$; p=0.000; CV=0.20.

Discussion

In Portugal, the studies using this methodology and instrument are less comprehensive, being limited to the population enrolled at a healthcare centre or to a municipality with a smaller sample. For the first time, it was possible to bring together resources to cover a medium-sized municipality and a sample that provided social and health (Regional Health Administration) and decision-makers with

information to plan interventions aimed at this age group (≥75 years).

In the area of social resources, a clear gender difference was found. Women had the lowest scores as a result of less social engagement and contact and less help available due to their widower status, which is a fact already observed by Rodrigues (2009), Rodrigues (2012) and Silva (2014).

The differences between age groups had already been observed in previous studies by Oliveira et al. (2010), Rodrigues (2009) and Silva (2014), with the 75-84 group showing the lowest scores. This result may be explained by the fact that older people aged 85 years and older receive both more informal support by their children and more formal support by institutions. Despite the decreased social interaction and the potential death of a spouse, the emotional support given to this age group provides an effective response to their needs and contributes to a better self-assessment of the help available in the event of illness (Rodrigues, 2009).

In the area of economic resources, women showed the lowest scores, thus reflecting situations of both low-paying jobs and early widowhood, which results in lower income. This association was also observed by Rodrigues (2009), Rodrigues (2012) and Silva (2014).

The differences between age groups, also brought up by Rodrigues (2009), brings us to differences in the level of education, indicating that older people with lower levels of education had less differentiated jobs and, therefore, lower incomes. According to Alvarenga, Oliveira, Faccenda, and Souza (2011), the level of education is an accurate indicator of the socio-economic level of a population as it influences the access to employment, housing and use of healthcare services.

In the mental health area, significant differences between genders and age groups were observed. Women and older people aged 85 years or older had the lowest scores. As in previous studies (Lima, Silva, & Ramos, 2009; Oliveira et al., 2010; Rodrigues, 2009; Rodrigues, 2012; Silva, 2014), these results reflect a cognitive decline and an increased perception of memory loss, which is more evident among women (Rodrigues, 2009).

According to Alvarenga et al. (2011), factors such as gender, level of education, age group, housing conditions and living with someone are associated with cognitive decline. In the same study, the elderly with depression symptoms had lower incomes, poor housing conditions, did not engage in physical or social activities and assessed their health as poor.

Ageing decreases the functional capacity in the mental health area and increases the prevalence of dementia. The investment in cognitive health, for example through its stimulation, is essential for the prevention of cognitive impairment and functional disability (Apóstolo, Cardoso, Marta, & Amaral, 2011).

In the area of physical health, women had the worst functional capacity in the total sample, which may be explained by a more negative self-assessment of their health status and more associated comorbidities. This fact was also observed in the studies of Ferreira et al. (2012), Rodrigues (2009), Rodrigues (2012) and Silva (2014) and, particularly in the first study, it was correlated with a higher prevalence of non-fatal conditions among women (osteoporosis, depression and others) and with a higher likelihood of coexisting diseases.

Participants aged 85 years and over had the lowest scores. The fact that none of them were classified as having an *excellent or good* physical health can be the result of morbidity, high medication consumption and a negative self-assessment of their current physical health (Rodrigues, 2009; Silva, 2014).

Unlike the studies of Farinasso (2005) and Rodrigues (2009), differences between genders and between age groups were found in this study. These differences are associated with the participants' physical and mental decline, reflected in a decreased ability to perform ADLs (Nikolova, Demers, Beland, & Giroux, 2011; Oliveira et al., 2010).

Gender differences may result from the ability to perform different activities. While men are more capable of, for example, using the telephone and handling money, women are more capable of preparing meals. However, in the studies of Oliveira et al. (2010), Rodrigues (2012) and Silva (2014), men showed a greater functional dependency in ADLs as they struggled to perform the household chores.

The difficulties experienced by the elderly in their ADLs, such as using the telephone, may not only related to their physical limitations, but also to the rapid development of communication technologies, making this activity more difficult (Farinasso, 2005).

The limitations of this methodology relate to the length of the questionnaire and the time spent in

data collection. However, the quantity and quality of information justify its use.

Conclusion

It was possible to characterise the population aged 75 years and older of the municipality of Coimbra, with both urban and rural characteristics, in the five functional areas previously established.

In the area of social and economic resources, 12.5% and 15.4% of participants were classified as *severely or totally impaired*, respectively. There is a clear need to strengthen social services so as to meet the needs of the elderly population.

In the mental health area, 16.0% of the participants have limitations in this area, in particular women and older people aged 85 years and older. Thus, primary healthcare services should be provided with professionals specialized in mental health.

The participants revealed a greater impairment in the areas of physical health (45.6% *severely or totally impaired*) and ADLs (23.6% *severely or totally impaired*). This fact confirms the importance of health promotion and disability prevention among this age group and the need to develop programmes oriented towards physical activity and ADLs in primary healthcare.

Taking into account the purpose of this study, we believe that there is a gender difference associated with ageing and that both women and the elderly tend to have the lowest scores in functional capacity.

As an assessment instrument specifically developed for the elderly, the QAFMI/OARS proved to be effective in assessing functional capacity by including the key areas of the ageing process.

Further studies should address the suitability and application of this methodology in clinical community settings as a comprehensive geriatric assessment instrument for the elderly population, and provide data for the planning of interventions to promote the presence of older people in their social and family environment.

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