# Self-care capacity of Portuguese elderly people living at home

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## Abstract

### Introduction
This article presents an analysis of the Self-Care Capacity of elderly people living at home, identifying variables that interfere with it. Aging is a stage of life in which health needs undergo continuous changes resulting from disease situations and the aging process, therefore, the implementation of adequate and effective support for the ability to take care of oneself will contribute to the promotion of health and well-being.

### Objective
To identify variables that interfere with the Self-Care Capacity of elderly people living at home.

### Method
This is a non-experimental, cross-sectional, quantitative descriptive and correlational study, involving 400 participants who met the inclusion criteria. Assessment of self-care capacity using the *Exercise of Self-Care Agency – ESCA.*

### Results
Based on the multivariate analysis of variance, the existence of statistically significant differences was identified in some domains of Self-Care Capacity according to age, education and self-perception of the elderly person's health status. Overall, positive correlations were found between age and the domain Initiative and responsibility (3.6%) and between education and the domain Knowledge and information seeking (5.2%) and negative correlations between age and the domain Knowledge and information seeking (3.7%). We also found that elderly people who perceived themselves as unable to take care of themselves showed lower scores in the Knowledge and information seeking domain than those who perceived themselves as able to take care of themselves, both when self-perceived as healthy or as having a pathology (difference in mean scores of -.38 and -.53, respectively, $p<.05$).

### Conclusion
In view of these data, and given that ageing is a stage of multiple challenges in self-care, we suggest that nurses should consider multiple strategies for elderly people to access, understand, interpret and integrate the content of the information that allows them to take care of themselves.

### Keywords
Self-care; Nursing Care; Aging; Elderly People.

## Introduction

In the 21st century, the trend towards population ageing is notorious, with longevity being one of humanity's greatest achievements.[1] The United Nations[2] identifies the elderly as the age group with the highest growth in the last 72 years, representing 13.9% of the global population. The same Body estimates that the world population aged 60 years or more should double by 2050 and more than triple by 2100, rising from 962 million in 2017 to 3.1 billion in 2100. In Portugal, the aging index in 2020 would be 167%, with the percentage of people over 65 being the fourth highest in the European Union.[3]

At this stage of life, health needs undergo continuous changes due to the aging process and/or pathology situations, interfering or potentially interfering with the ability of elderly people to take care of themselves, in their capacity for self-care, a potentiality that is an integral part of the human being.

According to Orem's Theory,[4] self-care is associated with the performance or practice of activities that individuals perform for their own benefit to maintain life, health and well-being, the potential to engage in actions aimed at caring for themselves, in a close relationship with the person's autonomy. As the author mentions, in self-care, the focus is placed on the human power activated and evidenced by the person when it searches, judges, make decisions and produce *self-care operations*.[4] The way in which each person performs self-care activities leads to different levels of self-care ability/deficit and, consequently, the ability to develop health-promoting behaviours and healthy ageing.

Thus, this is an issue which has already been studied in different contexts, with several studies showing statistically significant associations between self-care ability, health promotion behaviours and well-being in the elderly.[5,6,7,8] The relevance of the dimension of self-care in a health context is also highlighted by the increasing number of studies providing instruments to assess the self-care ability of elderly people,[9,10] allowing to objectify their needs associated with the diversity of events that occur

throughout the course of life, and not only as a direct result of chronological age,[11] and contribute to the development of interventions that respond to the individuality of the person's life.

In this line of thought, the most recent world report on ageing and health presents a social approach to address this issue,[11] highlighting that advanced age does not imply dependence and that, although most elderly people coexist with multiple comorbidities, the diversity of their capacities and needs is not random.

Similarly, Orem's Nursing Self-Care Deficit Theory[4] identifies basic conditioning factors that influence self-care and transcend age (gender, developmental stage, standard of living, environmental factors, resource availability and adequacy). However, the available scientific evidence identifies a small number of studies reporting the influence of variables such as gender[5,12] and education.[5]

Thus, the interest in analysing the elderly person's ability to take care of themselves, contributing to the maintenance of their health, and identifying how the socio-demographic variables interfere with the ability for self-care emerges.

Considering this perspective, in line with the proposal to recommend a focus on population ageing that enhances the transformation of health systems in order to replace curative models by preventive ones, focusing on the needs of elderly people,[11] it is essential to identify the variables that interfere with elderly people's self-care skills in order to implement adequate and effective support for the development of these skills.

## Objective

To identify variables that interfere with the Self-Care Capacity of elderly people living at home.

## Method

This is a non-experimental, cross-sectional, quantitative descriptive and correlational study, with a favourable opinion from the Ethics Committee of the Regional Health Administration of Lisbon and Tagus Valley (Proc.086/CES/INV/2018), developed ensuring the ethical and legal dimensions underlying studies of this nature. Sample composed of 400 elderly people residing in home care settings, recruited in day care centres (6 settings) and nursing consultations (6 Personalised Health Care Units and 8 Family Health Units), through a convenience sampling. Data were collected in paper format and the researcher was present throughout the process to ensure compliance with the sampling criteria, namely the cognitive ability to understand the questions, informed consent and clarification of language included in the questionnaire and/or reading it, in participants who could not read or had decreased visual acuity. To determine the self-perception of health status, the elderly person could answer considering three levels: a) Unable to take care of itself, needs help from others; b) Able to take care of itself despite the pathology and c) Healthy, able to take care of itself.

The assessment of the self-care ability was performed through the application of Kearney and Fleischer's[13] *Exercise of Self-Care Agency* – ESCA, revised by Riesch and Hauck[14] and translated, culturally adapted and validated for the Portuguese population by the authors of this article, during which a reliability study was conducted through the analysis of internal consistency

using *Cronbach's Alpha coefficient* and construct validity through exploratory factor analysis in a sample of 625 elderly people living at home. The resulting instrument is composed of 29 items (6 less than the original scale), distributed by 4 domains conceptually congruent with the original authors and with psychometric characteristics suitable for use in clinical or research contexts (global scale α= .871; subscales: Self-concept α= .705, Initiative and Responsibility α= .843, Knowledge and information seeking α= .755 and Passivity α= .646).

Data analysis was performed using the IBM SPSS *Statistics Base*, version 27.0. Descriptive statistics (measures of central tendency and measures of dispersion) were used to characterise the sample. For the multivariate analysis of variance, the assumptions of independence of observations and homogeneity of variance/covariance were duly checked. We used *Pillai's Trace* due to its robustness to modest violations of normality and *Wilks' Lambda* whenever homogeneity was verified, which is in line with Marôco's recommendations.[15]

### Results

As regards the sample's characteristics, the sample was mostly composed of elderly females (68.5%), aged between 65 and 97 years old (*M* = 75.52 years old; *SD* =

7.16). Regarding education, the majority had primary education (61.3%), followed by those who had attended or concluded Secondary Education (27.3%). With less representation, those who had higher education (7.2%) and those who never attended school (4.3%). Most elderly people reported being able to perform their usual self-care activities despite the pathology (55%), 33.5% reported perceiving themselves as healthy and only 11.5% reported a self-perception of inability to perform usual self-care activities, requiring the help of others.

As results of this study, it was found that gender does not interfere with Self-Care Capacity, since the data from the multivariate analysis of variance revealed no statistically significant differences [Wilks´ *Lambda* = .988, F (4, 395) = 1.23, p = .297, $\eta_p^2$ = .012, (1-β) = .386]. Univariate tests also failed to identify any statistically significant differences.

With regard to age, *Pearson's correlation coefficient* analysis identified a positive correlation of low magnitude with the dimension Initiative and responsibility (r = .191, *p*< .01), and a negative correlation, also of low magnitude, between age and Knowledge and information seeking (r = .193, *p*< .01) (see Table 1). It was also identified that the greater the age of the elderly person, the greater the Initiative and Responsibility and the lower the Knowledge and search for information.

**Table 1** - Pearson's correlation coefficients between participants' age and the ESCA measures

| | Age of participants<br>Pearson correlation coefficient (r) |
|---|---|
| *ESCA* (global scale) | .036 |
| Initiative and responsibility | .191** |
| Self-concept | -.005 |
| Knowledge and information seeking | -.193** |
| Passivity (inverted) | .031 |

*p < .05 **p < .01

With regard to the influence of the level of education, the multivariate analysis of variance showed an influence of the level of education on self-care ability, since a statistically significant overall effect was observed [*Pillai Trace*= .150, *F*(12, 1185)= 5.18, *p*< .001, $\eta_p^2$= .050, (1-β)>

.999].This effect is due to the existence of differences at the level of the dimensions Knowledge and information seeking (magnitude corresponding $\eta_p^2$= 5.2%), Self-concept ($\eta_p^2$= 2.6%) and Initiative and responsibility ($\eta_p^2$= 2.0%)(see Table 2).

**Table 2** - Mean scores and standard according to the deviations of the ESCA participants' education level: Univariate tests (F), magnitude of experimental effect (r;p2 ) and power of investigation (1-β)

| | Education level | | | | | | | | | | | |
| | Did not attend school ($n$= 17) | | Primary education ($n$= 245) | | Secondary Education ($n$= 109) | | Higher education ($n$= 29) | | Total (N= 400) | | | | |
| | M | DP | M | DP | M | DP | M | DP | M | DP | $F$ (3, 396) | $\eta_p^2$ | 1-β |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *ESCA* (global) | 3.14 | .56 | 3.20 | .45 | 3.20 | .50 | 3.12 | .40 | 3.19 | .46 | | | |
| Initiative and responsibility | 3.50 | .56 | 3.36 | .56 | 3.25 | .59 | 3.13 | .51 | 3.32 | .57 | 2.76* | .020 | .666 |
| Self-concept | 3.49 | .65 | 3.63 | .37 | 3.56 | .42 | 3.41 | .40 | 3.59 | .40 | 3.46* | .026 | .774 |
| Knowledge and information seeking | 2.33 | 1.23 | 2.84 | .89 | 3.14 | .69 | 3.21 | .49 | 2.93 | .86 | 7.20** | .052 | .983 |
| Passivity (inverted) | 2.58 | .93 | 2.50 | .81 | 2.58 | .98 | 2.52 | .71 | 2.52 | .86 | .25 | .002 | .098 |

\* $p < .05$ \*\**p* < .01

The *Games-Howell tests* indicated statistically significant differences in Self-concept, exclusively in the mean scores between elderly people with Primary Education and those with Higher Education (mean score difference of .22, *p*< .05). In terms of Knowledge and information seeking, statistically significant differences were found between elderly people who did not attend school or have Primary Education and those with Higher Education (difference in mean scores of .88 and .36, respectively, *p*<.05), as well as between participants with Primary and Secondary Education (difference of -.30, *p*<.01). In addition to these aspects, we found that elderly people who did not attend school had low levels of Knowledge and information seeking (M=2.33; SD=1.23). We also identified a progressive increase in the values obtained with increasing education level (primary education M= 2.84; SD=.89; secondary education M=3.14; SD=0.69 and higher education M=3.21; SD=0.49) (see Table 2).

Regarding the influence of Self-perception of health status on Self-Care Capacity, the results of the multivariate analysis revealed a statistically significant overall effect, with a magnitude for the multivariate test in the order of 6.5% [*Pillai trace* = .130, *F*(8, 790)= 6.84, *p*< .001, $\eta_p^2$= .065, (1-β)>.999].

The *Games-Howell tests* allowed identifying higher scores at the Self-concept level in healthy elderly people, compared to those who perceived themselves as unable to take care of themselves (mean score difference of .25, *p*<.05). Elderly people who perceived themselves as able to take care of themselves despite their pathology also showed higher scores compared to those who perceived themselves as unable to take care of themselves, needing support from others (mean score difference of .31, *p*<.01). With regard to the Knowledge and information search factor, elderly people whose self-perception is of inability to care for themselves, showed lower scores than those who perceive themselves as able to care for themselves despite the pathology and those who perceive themselves as healthy (difference in mean scores of -.38 and -.53, respectively, p<.05).

In the Passivity (inverted) dimension, elderly people self-perceived as healthy indicated greater activity compared to those who perceived themselves as unable to take care of themselves and to those who said they perceived themselves as able to take care of themselves despite pathology (difference in mean scores of .56 and .23, respectively, p< .05) (see table 3).

**Table 3** - Mean scores and standard deviations of the ESCA as a function of the variable Self-perception of health status: univariate tests (F), magnitude of the experimental effect ($\eta_p^2$) and power of the investigation (1-β)

| | Self-perception of health status | | | | | | | | | | |
| | Unable to look after themselves, need help from others ($n$ = 46) | | Ability to take care of oneself despite the pathology ($n$ = 220) | | Healthy, able to care for itself ($n$ = 134) | | *Total* (N = 400) | | | | |
| | M | DP | M | DP | M | DP | M | DP | $F$ (2, 397) | $\eta_p^2$ | 1-β |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *ESCA* (global) | 2.95 | .44 | 3.21 | .44 | 3.25 | .49 | 3.19 | .46 | | | |
| Initiative and responsibility | 3.22 | .59 | 3.35 | .55 | 3.32 | .60 | 3.32 | .57 | 1.02 | .005 | .228 |
| Self-concept | 3.34 | .53 | 3.65 | .34 | 3.58 | .42 | 3.59 | .40 | 11.63*** | .055 | .994 |
| Knowledge and information seeking | 2.54 | .88 | 2.92 | .86 | 3.07 | .80 | 2.93 | .86 | 6.78** | .033 | .918 |
| Passivity (inverted) | 2.16 | .70 | 2.49 | .85 | 2.71 | .87 | 2.52 | .86 | 8.00** | .039 | .955 |

\* $p < .05$ \*\**p* < .01

## Discussion

When identifying variables that interfere with the Self-Care Capacity of elderly people living at home, we found no statistically significant gender differences, which is in line with the results identified in Turkish elderly people[5] and Chinese elderly people.[12]

In relation to age, Initiative and responsibility tends to increase with age, whereas the opposite is true for Knowledge and information search. These results may be related to the intentionality assigned by the elderly person to search for information, since, according to Orem,[4,16] concern for oneself, motivation and hierarchy of values are key aspects to engage in self-care actions. On the other hand, since perception, memory and learning skills are considered to be essential for self-care actions,[16] the biological losses which become progressive with age may be the basis for lower levels in the Knowledge and information search domain at older ages.

We also identify an influence of the education level in the domains Self-concept, Initiative and Responsibility, as well as in the Knowledge and Information-seeking domain. Overall, we found that a progressive increase in education level is associated with an increase in the level of Knowledge and information seeking. These results are in line with the findings of other studies which reveal: a low level of education accompanies an insufficient knowledge about the pathology and treatment[12,17] and a lower capacity to engage in self-care actions.[5]

Although it is important to mobilize the dimension of skills development throughout life, in reality, elderly people with low education may have greater difficulty in accessing information related to their health and health care, as well as, less ability to understand and manage information that allows them to make decisions related to their health. Although a vast amount of information may be available to the public from different formats and sources of information, many people may have difficulty interpreting and applying it, which may contribute to greater complexity when putting good health practices in place, despite the information made available.[18] Another factor that may be associated to this problem is the low degree of health literacy of the elderly population in Portugal, which may condition the ability to obtain and apply relevant health information[19,20,24] or the management of pathology situations.[20,21,24]

When this situation is associated with the self-perception of inability to care for oneself, lower levels of self-concept are found, which may be related to the impact of dependence on the person's identity. Some authors state that certain pathology situations in which the person loses control over its own routines cause profound changes in self-concept.[22,23]

In view of these results, which are relevant for understanding care planning strategies and are aligned with the guidelines of the Orem Mode,[14,16] as well as the reasoning structure proposed by the author, we suggest the development of interventions that allow for a follow-up leading to the integration of information in the person's self-care, by mobilizing the guidance inherent to the support and education system for self-care proposed by the author.[3,16]

## Conclusions

As nurses, we should consider multiple strategies so that people are able to access, understand, interpret and integrate the content of the information that allows them to take care of themselves, given that, in elderly people, with lower levels of education and with the perception of being unable to take care of themselves, lower scores were found in the Knowledge and information search domain.

In situations of disability, the promotion of self-concept also emerges as one of the relevant dimensions for self-care capacity. So this should be a dimension to be included in care planning.

Considering that this study only includes elderly people living at home, further studies including hospitalisation settings of different types are suggested. An analysis of other variables based on the basic conditioning factors set out by Dorothea Orem[4] in her Nursing Self-Care Deficit Theory would contribute to a broader understanding of the issue.

### Authors' contributions

FC: Study conception and design; Data collection; Data analysis and interpretation; Statistical analysis; Manuscript writing.
MRP: Collaboration in statistical analysis; Writing of the manuscript.
MV: Conception and design of the study; Data analysis and interpretation.

### Conflicts of interest

The Authors declares that there is no conflict of interest'.

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