

ORIGINAL ARTICLE: EPIDEMIOLOGY,
CLINICAL PRACTICE AND HEALTH**Factors associated with health-related decision-making in older adults from Southern Brazil**Patricia Morsch,¹ Andrea Ribeiro Mirandola,¹ Iride Cristofoli Caberlon² and Ângelo José Gonçalves Bós¹¹Institute of Geriatrics and Gerontology – Pontifical Catholic University of Rio Grande do Sul (PUCRS), Porto Alegre, and ²Lutheran University of Brazil (ULBRA) – Canoas, RS, Brazil**Aim:** To analyze older adults' health-related decision-making profile.**Methods:** Secondary analysis of a population-based study with 6945 older-adults (aged ≥ 60 years) in Southern Brazil. Multiple logistic regressions were calculated to describe the odds of deciding alone or asking for advice, compared with the chance of letting someone else decide about health-related issues. Associated variables were age, sex, marital status, education level, number of chronic morbidities, having children and quality of life.**Results:** The odds of asking for advice instead of letting others decide were significantly higher in the younger group and those with better levels of quality of life, independent of other variables. The chance of asking for advice was lower for unmarried (62%), widowed (76%) and those with children (50%). The chance of men deciding for themselves about their health instead of letting others decide was 47% higher compared with women ($P = 0.0002$), but 45% lower in the older group ($P < 0.0001$). Participants who were unmarried and childless, and individuals with better levels of quality of life were more likely to decide alone instead of letting others decide ($P < 0.05$).**Conclusions:** Decision-making is fundamental for older adults' good quality of life. Aging makes older adults more vulnerable to dependence; however, it does not necessarily mean that they lose or decrease their ability to make decisions regarding their own health and desires. **Geriatr Gerontol Int 2017; 17: 798-803.****Keywords:** aged, decision-making, personal autonomy.**Introduction**

Population aging is a global challenge of this century, especially in developing countries like Brazil, which presents a new demographic pattern characterized by a profound change in the composition of the age structure, with a significant increase in the number of older adults (≥ 60 years).¹ The aging process is an individual experience that is affected by the interaction of multiple biopsychosocial factors, experiences from the life course, and individuals' concepts of time and age.^{2,3} In addition, there are issues involved in the aging process that are fundamental to older adults' quality of life, such as autonomy, decision-making, relationship with family members or caregivers, violence and resources allocation.⁴ The ethical principle of autonomy supports the decision-making capacity, which involves the ability to generate and evaluate multiple

possible choices to select the best one, enabling older adults to control their future and make plans, including health care.⁵ Older adults' decisions might impact not only on themselves, but also their family members and community.⁶ Research suggests that decision-making might impact both physical and mental components of the quality of life.^{5,6}

Considering the importance of decision-making and autonomy for the aging process experience, the objective of the present study was to analyze the relationship among older adults' health-related decision-making profile, quality of life and social demographic characteristics.

Methods

The present cross-sectional study focused on community-dwelling older men and women, over the age of 60 years, living in the state of Rio Grande do Sul, Brazil. We carried out a secondary dataset analysis from a research study carried out by the Pontifical Catholic University of Rio Grande do Sul in collaboration with the Public Health School of Rio Grande do Sul funded by a State grant. From the 497 cities in the state of Rio Grande do Sul, 39 were randomly selected to be part of the study. This was done with a multistaged sampling strategy that involved multicluster

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sampling, systematic sampling of households within the cluster of the neighborhood and a random selection of an older individual within the household. In each city, census sectors were identified using the National Census information and randomly selected as well. The main project was entitled "The profile of older adults from the Rio Grande do Sul State," in which methods were fully described previously elsewhere.^{7,8} In the original study, there was no exclusion criteria. When a participant did not succeed the cognitive ability test, which was remembering two words out of three, from the word recall test, a proxy responded on his/her behalf. A trained interviewer, who read each question and possible answers, carried out the survey.

Measures

For the purpose of the present study, we focused on questions that asked about health-related decision-making, demographic data and quality of life. The dependent variable was decision-making, measured by the question: "How does your opinion prevail in making important decisions about your own life, such as healthcare and treatment options, as surgery?" The answer options were "always decide alone," "always seek for advice but your own opinion prevails," "decide together with spouse," "spouse decides," "son or daughter-in-law decides" and "children or others decide." Answers were combined in three categories to measure the outcome, if they decide alone, receive advice ("always seek for advice" and "decide together with spouse") or let others decide ("spouse decide," "son or daughter-in-law," "children or others decide").

As sociodemographic factors, clinical determinants and family composition might impact decision-making, the associated variables were age, divided into age groups: sex; marital status, categorized in married (including living with a partner), widowed or other (single, separated, divorced); educational attainment, in years of study; number of chronic morbidities; having children; and quality of life, measured by the Short Form-12 (SF-12).^{5,6} The SF-12, validated in Brazil by Camelier in 2004, evaluates health-related quality of life in physical and mental components in a simple and a feasible test for older adults. The test score, for each component, ranges from 0 to 100, where higher scores indicate better quality of life in each component.⁹

Statistical analysis

Data from proxies were excluded ($n=341$) to reduce response bias on the evaluation of self-perceived measures. Also excluded from the sample were those who did not respond or were unable to answer the question related to decision-making ($n=29$).

First, relationships between the frequency of categorical variables, on each level of decision-making (decide alone, received advice or let others decide), were tested by a chi-square test. Additionally, possible differences between mean years of education, number or chronic

morbidities and quality of life (physical and mental domains), and decision-making levels were tested by analysis of variance. All significant independent variables from these simple analyzes were included in multiple logistic regression models, calculating the chance of deciding alone or asking for advice compared with the chance of letting someone else decide. Variables that reached significance level ($P < 0.05$) were considered statistically significant. When P was between 0.1 and 0.059, the result was considered borderline significance.¹⁰ Data were analyzed using the EPI INFO program 3.5.3 (Centers for Disease Control and Prevention, Atlanta, GA, USA).

The research project was approved by the Public Health School of Rio Grande do Sul Ethics Committee (Protocol 481/09) and by the Pontifical Catholic University of Rio Grande do Sul Ethics Committee (Protocol 09/04931), following the Declaration of Helsinki (2000), in addition to compliance with specific Brazilian legislation.

Results

The final sample included 6,945 older adults in which 51.7% were women. Most of the participants included were in the 60–69 years age group, were married and had children. Despite the low level of education (4.96 years on average), older adults obtained good results in the SF-12, with the physical domain mean (76.3 ± 21.9) being slightly better than the mental component (73.5 ± 11.4). In addition, older adults presented low means or chronic morbidities (1.4 ± 2.3).

Regarding autonomy, the majority of older adults received advice for decision-making (57.4%) or decided alone (30.9%). Older adults who allowed others to decide for them had lower scores in both domains of the SF-12. In the simple analysis, there was a statistically significant relationship between all studied independent variables and health-related decision-making, as shown in Table 1.

Table 2 presents the results of multiple logistic regression, noting the chances of older adults asking for advice or letting others decide for health-related decision-making.

The odds of asking for advice instead of letting others decide were significant when comparing the youngest with the oldest old (aged over 80 years). Older adults who achieved better scores in both SF domains had greater chances of seeking advice, independent of other variables. In contrast, asking for advice compared with letting others decide was related to being married and having children. The chance of asking for advice was lower for unmarried (62% lower) and widowed participants (76% lower), and also for those who had no children (50% lower).

In the interpretation of logistic regression, men were 13% more likely than women to seek advice from others. Additionally, the greater the number or chronic morbidities, the more likely older adults were to ask for advice. However, these relationships were no longer significant when controlling for other independent variables. This

Table 1 Frequencies and means of independent variables on each decision-making level

Independent variable	Ask for advice (%)	Decide alone (%)	Others decide (%)	P-value	Total
Sex					
Men	2001 (59.6)	1027 (30.6)	330 (9.8)	<0.001	3358 (48.4)
Women	1987 (55.4)	1122 (31.3)	478 (13.3)		3587 (51.7)
Age groups (years)					
60–69	2286 (61.6)	1101 (29.7)	324 (8.7)	<0.001	3711 (53.4)
70–79	1286 (54.1)	777 (32.6)	316 (13.3)		2379 (34.3)
80+	416 (48.6)	271 (31.7)	168 (19.7)		855 (12.3)
Marital status					
Married	2527 (74.6)	618 (18.2)	245 (7.2)	<0.001	3390 (48.8)
Widowed	879 (39.6)	920 (41.5)	419 (18.9)		2218 (31.9)
Other	582 (43.5)	611 (45.7)	144 (10.8)		1337 (19.3)
Have children					
Yes	3773 (59.1)	1834 (28.7)	778 (12.2)	<0.001	6385 (91.9)
No	215 (38.4)	315 (56.2)	30 (5.4)		560 (8.1)
Education (years)	5.27 ± 3.7	4.73 ± 3.9	4.07 ± 3.4	<0.001	4.96 ± 3.7
Physical SF	78.6 ± 20.4	76.3 ± 21.6	64.5 ± 25.7	<0.001	76.3 ± 21.9
Mental SF	75.4 ± 9.5	72.7 ± 11.9	66.8 ± 14.8	<0.001	73.5 ± 11.4
Morbidities	1.36 ± 1.5	1.38 ± 1.5	1.69 ± 1.7	<0.001	1.40 ± 2.3
Total	3988 (57.5)	2149 (30.9)	808 (11.6)		6945

SF, Short Form-12.

finding suggests that, men of the same age group, marital status, years of education, quality of life score and with children will not have significantly higher chances of seeking advice than women in the same condition. In other words, the differences initially observed between men and women, in the simple analysis, were dependent on other variables. This phenomenon is observed in the number or chronic morbidities only when we introduced the quality of life measures (SF-12 physical and mental domains) in the regression model.

Table 3 shows the results of multiple logistic regression comparing older adults' chance of deciding alone or letting others decide about health-related issues.

The chance of men deciding for themselves about their health instead of letting others decide was 47% higher compared with women, this result was statistically significant ($P=0.0002$). In terms of age, the odds ratio was significant only when comparing the youngest group with the oldest, the last having 45% less chance to decide alone ($P < 0.0001$).

Unmarried, childless and older adults with better levels of quality of life, in both physical and mental domains, were more likely to decide for themselves instead of letting others decide. These relationships were statistically significant. Education was also positively related to the chance of older adults deciding by themselves about health issues, with borderline significance.

As shown before in the results regarding the chances of seeking for advice, the number or chronic morbidities, which was significantly associated with decision-making in the simple analysis (χ^2 -test), when adjusted for other

independent variables in the multiple logistic regression, was not significant for the chance of deciding alone instead of letting others decide. This phenomenon has also been dependent on variables related to quality of life.

Discussion

The present study had important findings related to decision-making in older adults. In regard to demographic variables, it is important to note the relationship among sex, age, education, marital status and decision-making in older adults. Findings from this study suggest that married older adults ask for advice more frequently. In a study with the oldest old (aged 80 years and older), Mirandola observed that married older adults had better scores in decision-making inquiry compared with single and widowed older adults, corroborating the findings from the present study.¹¹ Literature has shown that married individuals have better self-perceived health than non-married individuals; one explanation is that couples are more able to overcome health adversities and feel they do not lose their sense of control, as they can count on a spouse.^{12–14}

Considering sex, the fact that older men possibly ask for advice or make decisions alone more frequently can be linked to the social organization of the current older population, where men still play the role of head of the household, being the main provider.^{15,16} According to Berzins, women were educated to be mostly housewives and mothers, being away from the labor force and social life, and this fact could have decreased their autonomy

Table 2 Results of multiple logistic regression for the chances of older people asking for advice instead of letting others decide

Independent variable	Odds ratio	95% Confidence interval		P-value
Sex (women)	1			
Men	1.1278	0.9279	1.3707	0.2269
Age group, years (60–69)	1			
70–79	0.8424	0.6797	1.0441	0.1175
≥80	0.6015	0.4529	0.7989	0.0004
Marital status (married)	1			
Other	0.3731	0.2835	0.4912	<0.0001
Widowed	0.2388	0.1917	0.2975	<0.0001
Children (no)	1			
Yes	0.4991	0.3077	0.8096	0.0049
Education	1.0473	1.0177	1.0777	0.0016
Physical SF	1.0090	1.0041	1.0138	0.0003
Mental SF	1.0463	1.0374	1.0553	<0.0001
Morbidities	1.0040	0.9367	1.0762	0.9102

SF, Short Form-12.

compared with men.¹⁷ Celich found similar results in relation to the autonomy of older men and women, emphasizing that in the moral development assessment, men had higher distribution in the autonomy stage than women.¹⁶

Age was also related to decision-making, even in the adjusted analysis, showing that as age increases the greater is the chance for older adults asking for advice or letting others decide for them. This finding is consistent with the results of the study carried out by Mirandola, which showed that decision-making capacity decreases with advanced age.¹¹ In addition, older adults more frequently rate their ability to decide alone lower than younger adults do.¹⁸ One possible explanation for these results is the idea that older adults are vulnerable and, therefore, cannot maintain their autonomy and self-government, a fact that must be demystified urgently, considering the increase of the elderly population.¹⁹ Older adults might also be too worried about cognitive aging, and anticipate cognitive problems by not deciding alone.¹⁸

Older adults from the present study had lower levels of education, similar to other studies involving Brazilian older adults.^{11,16} Lower educational attainment is a reflection of the Brazilian social organization in the first half of the last century, with difficult access to formal education. At that time, instead of studying, individuals had to work to provide for the family.^{16,20} Additionally, the fact that older adults with less education let others decide for them might be related to cognitive protection provided by studying,¹⁶ or older adults might prefer to let others decide for them, because they believe others have more resources and information, especially regarding medical decisions.²¹ Educational attainment loses significance in decision-making when adjusted for other factors, mainly when

the chance to decide alone is compared with letting others decide.

In the present study, older adults who do not let others decide for them, but ask for advice, or decide alone, are those with better quality of life scores in the physical and mental domains. A study about aging found that the sense of quality of life in older adults covers many meanings; however, health and family issues were the most listed as central to a good quality of life.²² Health seems to be the element that guides older adults' life, because it might mean autonomy and independence.²² In the present study, the number or chronic morbidities, when adjusted for quality of life, did not change older adults' decision-making profile, suggesting that when diseases are controlled and individuals feel good about their condition, they maintain good quality of life and autonomy. This finding could contribute to demystifying the belief that chronic diseases are crucial to successful aging.

In a study with 133 older adults, Bajotto and Goldim observed that even with appropriate health conditions to make decisions, older adults often do not make decisions alone.¹⁹ Another study investigated older adults' ability to decide about health insurance with 250 individuals. Most of the respondents (89%) affirm that they would like to have someone to share the decision-making, and at the same time they wish to maintain their own desires and autonomy. Just 15% of the participants would allow others to decide about health insurance for them.²³

Having a good relationship with family members can shape older adults experience with aging and how they cope with decision-making. Family can meet older adults' needs, including physical, psychological and social.²⁴ However, when older adults need to live with their family, either because of difficulty in carrying out activities of daily

Table 3 Chance of older adults to decide alone or let others decide

Independent variable	Odds ratio	95% Confidence interval		P-value
Sex (women)	1			
Men	1.4709	1.2021	1.7998	0.0002
Age group, years (60–69)	1			
70–79	0.8519	0.6860	1.0578	0.1468
≥80	0.5494	0.4138	0.7294	<0.0001
Marital status (married)	1			
Other	1.6281	1.2267	2.1609	0.0007
Widowed	1.2293	0.9708	1.5568	0.0866
Children (no)	1			
Yes	0.2107	0.1341	0.3313	<0.0001
Education	1.0270	0.9996	1.0551	0.0534
Physical SF	1.0114	1.0066	1.0163	<0.0001
Mental SF	1.0243	1.0160	1.0327	<0.0001
Morbidities	1.0383	0.9701	1.1112	0.2780

SF, Short Form-12.

living or financial strain, they might become more vulnerable, reducing their decision-making ability. This can be caused by family over protection or even by older adults' feelings of being a burden, especially if the caregiver is their children.^{15,24} This might be one explanation of the present study's findings, which suggests that older adults with children tend to let others decide for them. One study shows that dissatisfaction with the chosen treatment was associated with pressure by others, such as children; which can cause a deleterious effect, as individuals want support and empathy while making their decisions.²⁵ The literature suggests that informal networks (family members, friends and acquaintances) are an important source of information, and emotional and instrumental support in the decision process. When a health decision is regarding a major treatment, such as surgery, emotional reassurance by family members seems to be crucial.²⁵

It is essential to assess older adults' abilities, always trying to keep their autonomy as much as possible, based on individuals' values.²⁶ Even when older adults require care for temporary or permanent disability, there are ways in which their wishes and choices regarding healthcare can be maintained, especially when patients and family members work on an advance care planning. A study has shown that older adults consider family members the most important source of information regarding advance care planning.²⁷ Having a living will and a "do not resuscitate order" are good examples of advance directives.^{28,29} However, advance care planning is not a reality in medical practice in most developing countries, including Brazil.²⁹ Older adults with strong family ties that respect their right to make their own decisions are the sources of transforming this demographic revolution not in chaos, but in a victory for humanity.⁴

There were some limitations to the present study to be considered. The use of secondary data limited the

analysis of other important factors related to older adults' autonomy. In addition, although interviews were carried out by trained interviewers, subjectivity is inherent to human beings, and it could have interfered with some of the responses, especially self-reported measures. In addition, because of the study design, we cannot infer a causal relationship between the studied variables.

Findings from the present study might broaden the knowledge about the older adults' decision-making process. In addition, the use of a multistage random sample of more than 7000 individuals makes the results significant for the older adult population, which can be considered a strength of the present study.

Investigating factors that can contribute to successful aging is crucial to restructuring health services and planning action in public health. Successful aging is related to individuals' autonomy and decision-making capacity. Unfortunately, during the aging process, physical dependence is often confused with dependence for decision-making, which gives rise to social paternalism with dangerous consequences. It is important to point out that the fact that aging makes older adults more vulnerable to dependence; it does not necessarily mean that individuals lose or decrease their ability to make decisions regarding their own health and desires.

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Disclosure statement

The authors declare no conflict of interest.

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