INFLUENCE OF HOUSEHOLD LIVING ARRANGEMENT ON HEALTH CONDITIONS AND ON THE QUALITY OF LIFE OF ELDERLY LIVING IN RURAL AREAS

INFLUÊNCIA DO ARRANJO DOMICILIAR NAS CONDIÇÕES DE SAÚDE E NA QUALIDADE DE VIDA DOS IDOSOS RESIDENTES NA ZONA RURAL*

INFLUENCIA DE PLAN DOMÉSTICO EN LAS CONDICIONES DE SALUD Y CALIDAD DE VIDA DE LOS RESIDENTES EN EL ÁREA RURAL MAYORES

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ABSTRACT

Objectives: The objectives were to describe the socio-demographic and economic characteristics of the elderly, verifying the association of the living arrangement with health conditions and quality of life. **Method**: A household, analytical, cross-sectional and observational study was carried out with 850 elderly living in the rural area of Uberaba MG. For the purpose of the study, they were divided into: "living alone" and "not living alone". Instruments used: MEEM, OARS, WHOQUOL-BREF, WHOQUOL-OLD. **Results**: Data analysis: descriptive statistics, chi-square test and Student's t-test (p <0.005) through the SPSS program version 17.0. As for depression, there was no significant difference between the groups. Regarding QoL, the elderly living alone only presented higher scores in the aspect "death" (p = 0.058) and lower score in the aspect "intimacy" (p <0.001). **Conclusion**: The elderly from rural areas living with other people showed better health condition and higher scores regarding quality of life. The results contribute to the implementation of health actions planned according to the specificities of the elderly.

Descriptors: Elderly; Depression; Quality of life; Rural population; Geriatric Nursing

RESUMO

Objetivo: Os objetivos foram descrever as características sócio demográficas e econômicas dos idosos, verificar a associação do arranjo domiciliar com as condições de saúde e qualidade de vida. **Método**: Estudo tipo inquérito domiciliar, analítico, transversal, observacional, realizado com 850 idosos residentes na zona rural do município de Uberaba MG, divididos em moram só e moram acompanhados. Instrumentos utilizados: MEEM,

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OARS, WHOQUOL- BREF, WHOQUOL-OLD. **Resultados**: Análises dos dados: estatística descritiva, teste qui-quadrado e t-Student (p<0,005) através do programa SPSS versão 17.0. Quanto à depressão não houve diferença significativa entre os grupos. Na QV os idosos que moram só apresentaram maior escore na faceta morte (p=0,058) e menor na intimidade (p<0,001). **Conclusão**: Os idosos da zona rural que moram acompanhados apresentaram melhores condições de saúde e maior escore de qualidade de vida. Os resultados contribuem para a implementação de ações em saúde, de acordo com as especificidades dos idosos.

Descritores: Idoso; Depressão; Qualidade de vida; População Rural; Enfermagem geriátrica.

RESUMEN

Objetivos: Los objetivos fueron describir las características socio demográficas y económicas de los ancianos, verificando la asociación del arreglo domiciliar con las condiciones de salud y calidad de vida. **Metodo**: Estudio tipo encuesta domiciliaria, analítica, transversal, observacional, realizada con 850 ancianos residentes en la zona rural del municipio de Uberaba MG, divididos en moras sólo y viven acompañados. Instrumentos utilizados: MEEM, OARS, WHOQUOL- BREF, WHOQUOL-OLD. **Resultados**: Análisis de los datos: estadística descriptiva, prueba qui-cuadrado y t-Student (p <0,005) a través del programa SPSS versión 17.0. En cuanto a la depresión no hubo diferencia significativa entre los grupos. En la QV los ancianos que viven sólo presentaron mayor puntuación en la faceta muerte (p = 0,058) y menor en la intimidad (p <0,001). **Conclusión**: Los ancianos de la zona rural que viven acompañados presentaron mejores condiciones de salud y mayor puntuación de calidad de vida. Los resultados contribuyen a la implementación de acciones en salud, de acuerdo con las especificidades de los ancianos.

Descriptores: Edad avanzada; Depresión; Calidad de vida; Población rural; Enfermería Geriátrica.

INTRODUCTION

The ageing of the Brazilian population is a striking feature of the transition of the age structure in the country.[1] It is estimated that by 2020 the Brazilian elderly will comprise approximately 15% of the total population.[2] Data from the World Health Organization estimate that by 2050 there will be about 2 billion individuals aged 60 or over in the world, most of them living in developing countries. Today, Brazil is ranked 16th in the list of countries with the highest number of elderly, and by 2050 it is presumed that it will be on the 6th position.[3]

The Brazilian elderly population comprises 12.32% of the total inhabitants. The state of Minas Gerais has a population of 19.597.330 inhabitants, out of which 12.2% are people aged 60 or older. In Uberaba, the city where this research was conducted, the elderly population comprises 12.6% of total inhabitants, and 20% of them live in rural areas.[4]

The elderly living in rural areas face greater difficulty in accessing health services due to the distance to care units and lack of transportation. In this way,

their health condition may be aggravated, what interferes in their quality of life (QoL).[5]

Defining quality of life in old age is a complex task since it is associated to biological, social and psychological conditions to which the elderly have been exposed throughout life.[6]

The influence of housing arrangement on the health care of aged people has been little studied worldwide, especially considering the elderly living in rural areas.[7]

In that way, the objective of this study was to verify the association of household living arrangement with health conditions, depression signs and with quality of life of the elderly living in rural areas in order to expand knowledge on this subject and to subsidize the development of health actions aimed at promoting healthy ageing.

METHODOLOGY

This research is part of a larger study named "Health and quality of life of the elderly population from rural areas of Uberaba", an analytical, cross-sectional, observational investigation conducted with home visits. The population consisted of 1.297 elderly individuals enrolled in the Family Health Teams (FHT) [Equipes de Saúde da Família in portuguese] in rural

Uberaba-MG, which covers 100% of the population. The municipal Health Department provided us with lists bringing names and addresses of these elderly in June 2010.

For the sake of organizing health assistance, the rural area of Uberaba is divided into three Health Districts (HD) which are served by four teams from the Family Health Strategy program (FHS), covering 100% of the rural space: Borgico/Calcário (HDII); Baixa/Capelinha (HDII), Santa Rosa (HDIII) e Ponte Alta/Peirópolis (HDI).

As inclusion criteria, the following conditions were established: to be 60 years old or older; to reside in rural areas of Uberaba-MG; to have no cognitive decline and to have accepted to participate in the research. A total of 447 elderly people were excluded, of whom 117 (9%) had changed their address, 105 (8,1%) presented cognitive decline, 75 (5,8%) refused to participate, 57 (4,4%) were not found after three attempts by the interviewer, 11 (3,8%) had died, 3 (0,2%) were found hospitalized and 79 (6,1%) due to other reasons such as living in the city.

A total of 833 elderly participated in this study and were divided into two groups: 119 elderly living alone and 714 elderly not living alone. Interviews were conducted by 14 interviewers who were properly trained and advised on how to

approach interviewees, on the correct completion of the instrument and on ethical issues related to the research. Data collection took place from June 2010 to March 2011. Interviewers were assisted by Community Health Workers who accompanied them to the elderly homes.

Interviews were revised by field supervisors, who verified incomplete questions and inconsistent answers. When necessary, the interview was returned to the interviewer for adequate completion.

Before proceeding to the interview, cognitive evaluation was conducted through the Mini-Mental State Examination (MMSE) – translated and validated in Brazil. Scores range from 0 to 30, with the following cutoffs: 13 for illiterates, 18 for 1 to 11 years of schooling and 26 to more than 11 years of schooling.[8]

In order to characterize socio-demographic data, a structured instrument based on the *Olders Americans Resourcers and Services* (OARS) questionnaire was used after adaptation to the Brazilian reality.[9] Socioeconomic and demographic variables were: sex; age group (in years); marital status; schooling; individual income (in minimum wages); source of financial resources; reason for retirement; current professional activity; satisfaction of basic needs in relation to one´s economic condition; comparison of one´s economic condition with other elderly of the same age; housing and household arrangement.

The variables for assessing Quality of Life, according to WHOQOL-BREF, were the four domains: Physical (pain and discomfort; energy and fatigue; sleep and rest; activities of daily living; need for medicinal substances or medical treatments and work capacity); Psychological (positive feelings; thinking, learning, memory and concentration; self-esteem, bodily image and appearance, negative feelings, spirituality, religiosity and personal beliefs); Social Relationships (personal relationships, social support and sexual activity); Environment (physical safety and protection; home environment; financial resources; health and social care; availability and quality; opportunities for acquiring new information and skills; participation in and opportunities for recreation/leisure; physical environment: pollution, noise, traffic, climate and transport).[10]

As for WHOQOL-OLD, there were six analyzed aspects, namely: Sensory functioning (evaluates sensory functioning and the impact of loss of sensory abilities on QoL); Autonomy (refers to independence in old age, describing the extent to which one is able to live autonomously and make one´s own decisions); Past, present and future activities (describes the satisfaction on life

achievements and things that one longs for); Social participation (participation in daily activities, especially in the community); Death and dying (worries, restlessness and fears about death and dying) and Intimacy (evaluates the ability to have personal and intimate relationships). The elderly responses on QoL refer to the last two weeks before the interviews.[11]

As the interviews were progressively conducted, data revision and encoding was carried out. An electronic database was built in Excel® and data were processed through double entry to verify occurrence of duplicated records, different names and incorrect typing between the two databases. Inconsistent data were verified in the original interview and then corrected.

Data were transported to the *Statistical Package for Social Science* (SPSS) software, version 17.0, in order to be analyzed. To meet the first objective, descriptive statistical analysis was performed with the construction of a simple frequency table for the categorical variables.

As for the second objective, the chi-square test was carried out to verify the association between household arrangement and health condition. For the analysis of Quality of Life and household arrangement, Student´s t-test was conducted. For all tests, significance was considered when p<0,05.

This Project was approved by the Research Ethics Board at Universidade Federal do Triângulo Mineiro, protocol number 1477. The research participants were contacted at their homes and informed about the research objectives, the Free Informed Consent Form and all pertinent information. Interviews were performed only after consent and signature of the mentioned Form by the participants.

RESULTS

Table 1 shows the socioeconomic and demographic characteristics of the elderly population studied.

TABLE 1 – Frequency distribution of sociodemographic and economic variables according to the housing arrangement of the elderly living in rural areas of Uberaba, 2012.

Living Arrangement Variables		Living alone (%)	Not living alone (%)	Total n (%)
Sex	Male	67 (56,3)	366 (51,3)	433 (52)
	Female	52 (43,7)	348 (48,7)	400 (48)

Age group	60 ├70	61 (51,3)	422 (61,9)	483 (60,4)
	70 ├80	46 (38,7)	212 (29,7)	258 (31)
	80 or older	12 (10,1)	60 (8,4)	72 (8,6)
Schooling	Illiterate	37 (31,9)	165 (24)	202 (25,2)
	1 ├4	33 (28,4)	218 (31,7)	251(31,3)
	4 ├8	42 (36,2)	264 (38,4)	306 (38,1)
	8 or more	4 (3,4)	40 (5,8)	44(5,5)
Marital Status	Single	26 (21,8)	35 (4,9)	61 (7,3)
	Married	0	555 (77,7)	555 (66,6)
	Widowed	58(48,7)	103 (14,4)	161 (19,3)
	Separated/Divorced	35(29,4)	21 (2,9)	56 (6)
Individual Income	No income	6 (5)	80 (11,2)	86 (10,3)
	<1	5 (4,2)	25 (3,5)	30 (3,6)
	1 ├3	72 (60,5)	334 (46,8)	406 (48,8)
	3 ├5	30 (25,2)	219 (30,7)	249 (29,9)
	5 or more	5 (4,2)	38 (5,3)	43 (5,2)
	Unknown	1 (0,8)	17 (2,4)	18 (2,2)
Financial Resource	Retirement/other	82 (68,9)	498 (70)	580 (69,8)
	Pension	17 (14,3)	58 (8,1)	75 (9,0)
	Income/rent and other	1 (0,8)	13 (1,9)	14 (1,7)
	Donation (Family)	0	3 (0,4)	3 (0,3)
	Ongoing work and other	10 (8,4)	52 (7,3)	62 (7,4)
	Casual work	4 (3,4)	10 (1,4)	14 (1,7)
	Lifetime monthly income	0	1 (0,1)	1 (0,1)
	Financial Investments	0	0	0
	No personal income	3 (2,5)	72 (10,1)	75 (12,6)

Source: the author, 2011.

With regards to sex, there was a predominance of males (52%), with higher percentage of "living alone" (56.3%) in comparison to "not living alone" (51.3%). With respect to age groups, most of the elderly were in their 60-70s (60.4%), however, here, the percentage of elderly living alone (51.3%) was lower than those not living alone (61.9%) (Table 1).

In our study, it stands out the high percentage of older adults living alone: 38.7% of those aged 70 to 80 and 10.1% of those older than 80. These findings are

satisfactory considering that, in Brazil, living alone after one is 60 years of age can be understood as a consequence of successful ageing, good health conditions and social integration, demystifying, therefore, the idea of abandonment and loneliness.

As for schooling, both groups presented, mostly, 4 to 8 years of study: 36.2% of the elderly living alone and 38,4% of the elderly not living alone.

With respect to marital status, the highest percentage of the elderly living alone were widowed (48.7%), while those not living alone were mostly married (77.7%) (Table 1). As for individual income, most of the elderly were receiving 1 to 3 monthly minimum wages (48.8%), however, this percentage was higher for the elderly living alone (60.5%) than for the elderly not living alone (46.8%) (Table 1). The source of such financial resources came mostly from retirement (69.8%): 70% in case of the elderly not living alone and 68.9% in case of those living alone (Table 1).

Housekeeping was the predominant professional activity: 35.3% for the elderly living alone and 41.1% for the elderly not living alone. It stood out that 31.9% of the elderly living alone are rural workers.

In both groups, most of the elderly were retired. Age was the main reason for the retirement both in the living alone group (44.4%) and in the not alone group (39.3%).

The elderly living alone (56.6%) and the ones not living alone (53.5%) considered their economic situation to be the same as that of same age people. Both the elderly living alone (58.8%) and not alone (71.1%) have self-owned house (Table 1). It is also noteworthy that 31.9% of the elderly living alone resided in provided houses.

Table 2 presents the association between health conditions and household arrangement of the elderly living in rural areas.

TABLE 2- Factors associated to health conditions according to the household arrangement of elderly individuals residing in rural areas of Uberaba, state of Minas Gerais, 2012.

Health Status	Living alone n (%)	Not living alone n (%)	Total n (%)	χ^2	*p*
Self-perceived health				1,37	0,849
Very poor	3 (2,5)	20 (2,8)	23 (2,8)		
Poor	5 (4,2)	27 (3,8)	32 (3,8)		
Fair	50 (42)	323 (45,2)	373 (44,8)		
Good	51 (42,9)	270 (37,8)	321 (38,5)		

Very good	10 (8,4)	74 (10,4)	84 (10,1)		
Self-perceived vision				13,226	0,010
Blind	0	0	0		
Very poor	8 (6,8)	29 (4,1)	107 (12,9)		
Poor	13 (11)	94 (13,2)	358 (43)		
Fair	37 (31,4)	321 (45)	297 (35,7)		
Good	57 (48,3)	240 (33,6)	33 (4)		
Very good	3 (2,5)	30 (4,2)	37 (4,4)		
Self-perceived hearing				0,874	0,832
Deaf	0	2 (3)	2 (2)		
Poor	24 (20,3)	130 (18,3)	154 (18,6)		
Good	79 (66,9)	487 (68,6)	566 (68,4)		
Very good	15 (12,7)	91 (12,8)	106 (12,8)		
Regular use of medication				3,159	0,206
Yes, prescribed by physician	84 (70,6)	516 (72,3)	600 (72)		
Yes, self-prescribed	8 (6,7)	24 (3,4)	32 (3,8)		
No	27 (22,7)	174 (24,4)	201 (24,1)		
Practice of physical activity				3,491	0,062
Yes	39 (34,2)	184 (25,8)	223 (27)		
No	75 (65,8)	528 (74,2)	603 (73)		
Smoking				8,902	0,003
Yes	33 (28,4)	120 (16,9)	153 (18,5)		
No	83 (71,6)	592 (83,1)	675 (81,5)		
Alcohol drinking				4,757	0,446
Daily	1 (0,8)	35 (4,9)	36 (4,3)		
1 to 3 times a week	10 (8,5)	71 (9,9)	81 (9,7)		
4 to 6 times a week	2 (1,7)	8 (1,1)	10 (1,2)		
1 to 3 times a month	12 (10,2)	66 (9,2)	78 (9,4)		
Less than once in a month	8 (6,8)	41 (5,7)	49 (12,5)		

Source: the author, 2011.

Most of the elderly living alone considered their health to be good (42.9%) and fair (42%), whilst the elderly not living alone considered it to be fair (45.2%) and good (37.8%). No statistically significant difference was verified between the groups ($\chi2$=1.37; p=0.849).

There was a significant difference in the self-perceived vision among the groups: the elderly living alone considered it to be good and the ones not living alone considered it just fair ($\chi2$=13.226; p=0,010) (Table 2).

Hearing was perceived by both living alone (66.9%) and not living alone (68.6%) groups as good, with no significant statistical difference between the groups ($\chi2$=0.874; p=0.832) (Table 2).

Most elderly were found to be in regular use of medication prescribed by doctors, with lower percentages for those living alone (70.6%) in comparison to those not alone (72.3%). No significant

statistical difference was verified between the groups ($\chi2$=3.159; p=0.206).

The elderly living alone showed higher percentage of physical activity (34.2%) than those not living alone (25.8%), however, there was no statistically significant difference between the groups ($\chi2$=3.491; p=0.06) (Table 2).

With respect to smoking, the elderly living alone presented higher percentage than those not living alone ($\chi2$= 8.902; p=0.003). In both groups, most elderly reported not drinking alcohol, however, a lower percentage was observed among the elderly living alone (67.4%) in comparison to those not living alone (69.0%). No statistically significant difference was verified ($\chi2$=4.757; p=0.440).

As for monthly medical consultation, both groups reported not attending them: 68.1% of the elderly living alone and 75.3% for the elderly not living alone. No statistically significant difference was observed between the groups ($\chi2$=2.718; p=0.09).

With respect to depression, 24.4% of the elderly living alone and 21.4% of the not alone elderly presented indicative for the disease. No statistically significant difference was observed between the groups (χ^2 =0.517; p=0.472). A higher number of elderly living alone reported cataract (χ^2= 3.734; p=0.053).

In Table 3, QoL scores measured by WHOQOL-BREF are presented.

TABLE 3- Quality of Life of the elderly residing in rural Uberaba, evaluated by WHOQOL-BREF according to household arrangement, 2012.

Quality of Life	Living alone		Not living alone			
	Mean	SD	Mean	SD	t	P
WHOQOOL- BREF						
Physical	69,2	15,56	69,05	15,41	0,376	0,707
Psychological	70,23	13,66	70,05	13,11	0,139	0,889
Social Relationships	72,26	14,23	74,10	12,29	1,470	0,142
Environment	63,23	12,90	63,36	11,4	0,110	0,912

No significant difference was observed between groups in any QoL domain measured by WHOQOOL-BREF, Table 4.

In both groups, the highest QoL score was found in the Social Relationships domain.

Table 4 below shows the QoL, WHOQOL-OLD scores of the studied population.

TABLE 4- Quality of life of the elderly residing in rural areas, evaluated by WHOQOL-OLD according to household arrangement, Uberaba-MG, 2012.

Quality of Life	Living alone		Not living alone			
	Mean	SD	Mean	SD	*t*	*P*
WHOQOOL- BREF						
Physical	69,2	15,56	69,05	15,41	0,376	0,707
Psychological	70,23	13,66	70,05	13,11	0,139	0,889
Social Relationships	72,26	14,23	74,10	12,29	1,470	0,142
Environment	63,23	12,90	63,36	11,4	0,110	0,912

A higher percentage of elderly living alone with higher QoL scores in "death" and "dying" was observed in comparison to those not living alone (p=0,058). The elderly living alone only had lower QoL scores in "Intimacy" when compared to the not living alone group (p<0,001) (Table 4).

DISCUSSION

The prevalence of male elderly at rural areas was observed in this study, corroborating another research carried out at the countryside of Minas Gerais State, where 52,8% of the elderly were also male.[12] This is a reflection of the urbanization set in Brazil in the 1970s, when it is observed an intensification of the rural/urban female migration process directly related to the search, by women, for labor supply both in companies and homes.

As for age group, a study conducted with the elderly resident in rural areas at the countryside of Rio Grande do Sul State corroborate this study – a similar percentage was found (61,1%), although in that case household arrangements were not specified. [13]

With respect to schooling, in both groups, most elderly attended school for 4├8 years - 36,2% considering the living alone group and 38,4% considering the not living alone group (Table 1). Research conducted with rural elderly from Nova Bassano/ RS – not specifying the household arrangement – got a much higher percentage (75%) than the present investigation.[5] Health professionals should seek to know the level of schooling and possible difficulties faced by the elderly concerning health services.[14]

Regarding individual income, our study verified that although most interviewees received around 1-3 monthly minimum wages, the percentage was higher for the elderly living alone. Another research carried out in rural areas of Florianópolis presented similar results - a

fact that may be associated to benefits paid by the government called rural retirement.[15]

It is worth mentioning that during data collection we could observe the elderly engaging in for-profit activities such as: cheese and sweets making and sale of agricultural and livestock surplus. These activities were intended to increase their income, since most of them were receiving retirement benefits.

As for marital status, similar result was found with elderly living without partner (41.2%) in a survey carried out in rural areas of Southern Brazil. For those living with partner, the percentage was lower (58.8%).[16]

In our study, most elderly were retired in both groups. A study carried out with elderly from rural areas of Pelotas presented a partially similar result: 91.8% of the elderly were retired and 35.5% were still performing some work activity.[15]

It was also observed in this study that both the elderly living alone and those not living alone considered their economic situation to be the same of that of other people at same age. The lower age for rural retirement and the family economy contribute to the difference in receiving some benefits, which favors residents in rural areas. It is believed that this benefit contributed positively to improving the living conditions of these elderly individuals.[4]

Also, there was a higher proportion of living alone elderly with higher QoL score in "death" and "dying" aspect in comparison to those not living alone. A study conducted in the countryside of Minas Gerais with elderly from rural areas showed a lower QoL score in this aspect among those who had no partners, showing a significant association (p=0.013).[17] The way in which human beings elaborate mourning and prepare for death itself is particular to each individual. Confrontation to death and dying will happen according to one´s own experiences throughout life and one´s inclusion in the social environment.

FINAL CONSIDERATIONS

Results shed light on the health conditions and on socio-demographic and economic characteristics of the elderly from rural areas according to household arrangement. Thus, it contributes to the planning and implementation of health actions according to the specificities of the elderly living in rural areas. That way, difficulties related to health service access can be minimized in order to promote health and prevent diseases that may interfere with the QoL of these elderly.

As a limitation, we can mention

that this was a cross-sectional study, which does not allow us to establish cause-effect relations in the results; also, self-reported morbidities may have been under-diagnosed.

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