Demografic Profile, health and associated factors of family caregivers and functionality of hospitalized older adults: cross-sectional, exploratory and descriptive study

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Abstract

Background: The longevity of the world population can contribute to an increase in hospitalizations, consequently, to the emergence of functional limitations, resulting in the need for an informal caregiver. Hospitalized elderly people may become dependent with greater demands for care provided, resulting in greater burden on the family caregiver.

Objective: To analyze the association between the demographic variables of interest and self-rated health of family caregivers, as well as to describe the functionality of elderly people hospitalized in a university hospital in the Amazonian context.

Methods: Cross-sectional, quantitative and observational study, carried out through individual interviews with 98 interviewees, divided into 49 family caregivers and 49 elderly people hospitalized in the surgical clinic sector of a university hospital. Demographic data and health conditions were collected from family caregivers and, to describe the functionality of hospitalized elderly people, the Barthel Index was applied. Descriptive and inferential analyzes were used, the t student tests were applied and for bivariate analysis the Pearson Correlation. A significance level of 5% was adopted.

Results: Of the 49 family caregivers, there was a predominance of females (81.6%) with an average age of 46.9 (±13.3) years, single (57.1%) with complete average education (53.1%) who care for their parents (51%). Regarding health conditions, respondents self-assess their health as good ($P < .01$), they consider that their health status was not affected by the provision of care ($P < .01$). There was a significant association between demographic variables (gender, age and education) and self-assessment of informal caregivers ($P < .01$, $P < .01$ and $P < .05$, respectively). Of the 49 elderly people hospitalized, the majority were men (63.2%) with a mean age of 69.2 (±7.12) years. Regarding the assessment of functionality, most were classified as mild dependence on care (46.9%), specifically in the age group between 60 and 69 (67.8%).

Conclusions: The data reveal that feminization, age and education of family caregivers contribute favorably to the provision of care to hospitalized elderly people with a lower degree of functional dependence.

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Original Paper

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Demografic Profile, health and associated factors of family caregivers and functionality of hospitalized older adults: cross-sectional, exploratory and descriptive study

Abstract

Background: The longevity of the world population can contribute to an increase in hospitalizations, consequently, to the emergence of functional limitations, resulting in the need for an family caregiver. Hospitalized older adults may become dependent with greater demands for care provided, resulting in greater burden on the family caregiver. Thus, the nursing team in the hospital environment began to face a new situation: the increase in the number of older adults occupying hospital beds and the presence of their family caregiver.
Objective: To analyze the association between the demographic variables of interest and self-rated health of family caregivers, as well as to describe the functionality of older adults hospitalized in a university hospital in the Amazonian context.
Methods: Cross-sectional, quantitative, exploratory and descriptive study, carried out through individual interviews with 98 interviewees, divided into 49 family caregivers and 49 older adults hospitalized in the surgical clinic sector of a university hospital in Brazil between February and March 2023. Demographic data and health conditions were collected from family caregivers and to describe the functionality of hospitalized older adults, the Barthel Index was applied. Descriptive (frequency and percentage) and inferential analyzes were used, the t student test were applied. The significance level of 5% was adopted.
Results: Of the 49 family caregivers, there was a predominance of females 40 (81.6%) with an average age of 46.9 (SD 13.3) years, single 28 (57.1%) with complete average education 26 (53.1%) who care for their parents 25 (51%). Regarding health conditions, respondents self-assess their health as good (25/49, 51%; *P* = .01), they consider that their health status was not affected by the provision of care (36/49, 73,5%; *P* = .01). There was a significant association between demographic variables (gender, age and education) and self-assessment of family caregivers (*P* = .01, *P* = .01 and *P* < .05, respectively). Of the 49 older adults hospitalized, the majority were men 31 (63.2%) with a mean age of 69.2 (SD 7.12) years. Regarding the assessment of functionality, most were classified as mild dependence on care 23(46.9%), specifically in the age group between 60 and 69 (21/49, 67.8%).
Conclusions: The data reveal that female gender, age and education of family caregivers contribute favorably to the provision of care to hospitalized older adults with a lower degree of functional dependence. It is important to emphasize that the family caregiver during the older adults hospitalization should not be seen as a delegation of responsibilities or as a complement of human resources to assist in their recovery. Health professionals need to implement assertive interventions so that the family caregiver functions as a therapeutic resource.

Keywords: family caregiver; older adult; hospitalization; functionality.

Introduction

Brazil has more than 30 million older adults, reaching 14% of the total population [1]. Brazilian projections show that, in 2030, the number of older adults will exceed that of children and adolescents aged 0 to 14 by approximately 2.28 million, on the way to becoming a country with a majority older adults population [2].

In this way, there is a change in the population's epidemiological profile, consequently, maintaining independence and autonomy is a challenge for this group, as they are more susceptible to chronic non-communicable diseases, disabling conditions, sensory decline, accidents and social isolation, requiring the help of caregivers for long periods [3].

In turn, the impairment of the functional capacity of older adults has a major impact on the lives of family members, caregivers, the health system and, mainly, on their own lives, as they need their functionality to play their role in society and in daily activities. Not being functionally well means greater expenses, greater vulnerability and dependence, reducing well-being and quality of life. Currently, the health of older adults is measured not by the number of diseases but by their own functional capacity [4].

Therefore, it is essential that older adults, especially those hospitalized, have a comprehensive care support network, where the family is relevant to guarantee their well-being and care, represented by the role of the family caregiver or informal caregiver [5].

The term “caregiver” is classified as formal and informal/family. The first is conceptualized as a technically qualified subject, who has experience to provide care at home and receives remuneration through a formal employment contract [6]. The family caregiver is defined as an individual who does not have professional training, works voluntarily and provides assistance to an acquaintance or family member, such as a spouse, parents or children [7], being the most common form of assistance to the elderly [8,6].

The role of the caregiver involves perceiving the other person as an integral being, monitoring the daily activities of individuals, as well as assuming emotional and psychological support and managing the finances of the individual they care for [2]. It should be noted that family caregivers have an important responsibility for patient care and are sometimes subjected to facing low competence due to a lack of preparation for the situation, whether in terms of assistance, care management, or emotional sense [9].

In Brazil, the presence of a caregiver during the older adults hospitalization process was ensured by the Ministry of Health, which considers the improvement in quality of life provided by the act of caring; Furthermore, it makes mandatory the means that allow the caregiver to remain, thus guaranteeing financial resources for their accommodation. The team of healthcare professionals must seek to improve the care of older adults in partnership with the family caregiver [10].

International literature shows that high-complexity hospitals in South America, Europe and Asia show that the older adults occupying the beds are mostly female and have previous hospitalization experience. In Brazil, according to the Elderly Statute, created by law n°. 10.741, of October 1st, 2003, it guarantees hospitalized elderly people the right to a full-time companion [11].

In the hospital context, the presence of an family caregiver accompanying the older adults has become an increasingly frequent phenomenon. It is noteworthy that in the older adult, functional dependence can be a stressful factor for family caregivers, as it compromises their well-being and quality of life, negatively impacting the quality of care offered to dependent older adults [12,13].

Studies indicate that the analysis between family caregivers and the functionality of the older adults in the hospital context, especially in the Amazonian context, is still scarce.

Therefore, with the aim of directing actions that promote the quality of care provided by family caregivers, this study aimed to analyze the association between demographic variables of interest and self-rated health of family caregivers, as well as describe the functionality of older adults hospitalized in a university hospital in the Amazon context.

Methods

Study Design

Cross-sectional, quantitative, descriptive and observational study. In addition, the STROBE (*Strengthening the Reporting of Observational Studies in Epidemiology*) *checklist* for observational studies was used to help conduct the research and report the results obtained.

Location and period

It was carried out in a surgical hospitalization unit of the João de Barros Barreto University Hospital Complex (HUJBB) in the city of Belém, Pará, Brazil. HUJBB is a highly complex hospital with 261 beds, a reference in the care of infectious and contagious diseases and oncology, with care in several specialties: geriatrics, endocrinology, chemotherapy, radiotherapy, general surgery, among others.

The city of Belém is the capital of the state of Pará, which together with the states of Maranhão, Amapá, Tocantins and Mato Grosso make up the Eastern Amazon.

Data collection took place between February 1st and March 30th, 2023 in the hospital environment, specifically in the surgical hospitalization clinic – aimed at clinically stable pre- and/or post-operative (mediate and/or immediate) patients.

Population, sample, inclusion and exclusion criteria

Initially, a survey was carried out by the Nursing “Leader” of the inpatient unit, in this case the surgical clinic of this hospital, on average 15 to 20 caregivers pass through the inpatient unit per month.

The intentional and convenience nonrandom sampling technique was used to obtain the sample population.

All family caregivers who accompanied older adults hospitalized in the HUJBB surgical hospitalization unit during the data collection period were interviewed. Totaling 98 interviewees divided into 49 family caregivers and 49 older adults hospitalized in the surgical clinic. We emphasize that there was no withdrawal or refusal by the interviewees to participate in the study.

The following were considered as inclusion criteria:

a) family caregivers: **i)** aged 18 or over, **ii)** ability to answer the questions on the instruments, **iii)** not being paid for providing care and **iv)** availability of time to answer the research instruments.

b) older adults: **i)** being over or equal to 60 years old, **ii)** being hospitalized accompanied by an informal caregiver, **iii)** ability to answer the instrument's questions, stable clinical condition, **iv)** availability of time to answer the research instruments and **v)** older adult receiving medical treatment for any acute or chronic illness.

As exclusion criteria:

a) family caregivers: **i)** who were unable to respond to the instruments for any reason and **ii)** be remunerated for the care provided.

b) older adults: **i)** difficulty in understanding the questions and/or having cognitive disabilities, **ii)** altered clinical condition for any reason (hypertension, hyper or hypoglycemia, disorientation in time and/or space according to the evaluation criteria of healthcare professionals health) or **iii)** are unable to

complete the answers to the instruments.

Data collection procedures and instruments

Initially, the main researcher joined the team of professionals who were part of the surgical clinic in order to learn about the work routine in the research field.

Two instruments were applied: **a)** questionnaire with sociodemographic questions for the family caregiver such as: age, gender, marital status, education, whether the caregiver lived with the elderly person; **b)** related to health conditions with questions about health status, whether it was affected by the provision of care, whether the caregiver was responsible for the care of another elderly person, degree of kinship; **c)** the hospitalized older adults: age and sex, followed by the application of the Barthel Index instrument.

The Barthel Index is an instrument used worldwide to assess functional independence and mobility, presenting very consistent reliability and validity results with a Cronbach's alpha value of 0.90. This was validated for use in Brazil and evaluates ten basic activities of daily living (BADL), with scores ranging from 0 to 100. A person with scores below 25 is considered completely dependent; from 50 to 26, severely dependent; from 51 to 75, moderately dependent; from 76 to 99, mildly dependent and 100, completely independent [14].

Interviews were conducted by the main researcher with an average duration of 20 minutes, in different shifts (morning/afternoon) in the hospitalized elderly person's own room with a view to promoting privacy and confidentiality of information. As this is still a pandemic period, WHO recommendations regarding the use of masks, minimum social distancing of one meter and hand hygiene were followed.

Statistical Analysis

The data were double-entered into an Excel® spreadsheet and analyzed using the Statistical Package for the Social Sciences (SPSS) for MaC OS, version 28.0 software (IBM Corp). In the descriptive analysis, the following were calculated: mean and standard deviation, for quantitative variables, absolute and relative frequencies. The *Kolmogorov-Smirnov* test was used to test the normality of the variables. Considering the lack of normality in the distribution of variables, the parametric test *Student t* test was applied, the choice for this test was due to the fact that it was a small sample. The level of significance adopted was $P < .05$.

Ethics and consent

The study followed the standards of the 2013 Declaration of Helsinki, ensuring confidentiality and anonymity of data of all participants, with with a favorable opinion by the Ethics Committee on Human Research of the Federal University of Pará in accordance with Resolution Nº. 466/2012 of the National Health Council (CNS in Portuguese) receiving approval opinion Nº. 5.312.450. All interviewees who agreed to participate in the research were presented with the objectives, risks and benefits of the study and, after providing the information, signed the Free and Informed Consent Form, receiving a copy of it, proceeding with the interview.

Results

Of the 49 family caregivers interviewed, 40 (81.6%) were women, 25 (50.9%) who were aged between 41 and 59 years old, with an average age of 46.9 (SD 13.3) years old. Regarding marital status 28 (57.1%) were single with 26 (53.1%) complete high school and 25 (51.0%) had children. All results showed a statistically significant difference ($P< .01$) (Table 1).

Table 1. Demographic characteristics of family caregivers of elderly people hospitalized in a university hospital. Belém, Pará, Brazil, (N=49), 2023.

Variables	n	%	*P value*[a]

Age			< .01[a]
22 ┤ 40	15	30.4	
41 ┤ 59	25	50.9	
≥ 60	9	18.7	
Average (±SD)	46.9 (±13.3)		
Gender			< .01[a]
Female	40	81.6	
Male	9	18.4	
Marital status			< .01[a]
Married/stable union	16	32.7	
Divorced/Separated	1	2.0	
Single	28	57.1	
Widowed	4	8.2	
Education			< .01[a]
Complete primary education	3	6.1	
Incomplete elementary education	10	20.4	
Complete high school	26	53.1	
Complete higher education	9	18.4	
Incomplete higher education	1	2.0	
Relationship with the person you are the caregiver for			< .01[a]
Spouse/partner	8	16.3	
Children	25	51.0	
Friend/neighbor	5	10.2	
Brother or brother-in-law	4	8.2	
Grandson	6	12.2	
Father/mother	1	2.0	

**t-student Test;* [a] Significant *at P< .05.*

Table 2 it was observed that 25 (51.0%) of caregivers self-assess their health as good; 36 (73.5%) report that their health was not affected by providing care to hospitalized older adults. Of the total number of caregivers 27 (55.1%), they provide care for one person. All results showed a statistically significant difference (*P*< .01).

Table 2. Description of the health conditions of family caregivers of older adults hospitalized in a university hospital. Belém, Pará, Brazil, (N=49), 2023.

Variables	N	%	*P value* [a]
Health self-assessment			< .01 [a]
Good	25	51.0	
Very good	5	10.2	
Too bad	1	2.0	
Neither good nor bad	17	34.7	
Bad	1	2.0	
Do you consider that your health status has been affected by the provision of care			< .02 [a]
No	36	73.5	
Yes, negatively affected	13	26.5	
How many people regularly care for and/or support them in their daily activities, personal care or in other ways due to physical or mental illness, disability or old age			< .01 [a]
A person	27	55,1	
Two people	13	26,5	
Three people	4	8.2	
More than three	5	10.2	

t-student Test; [a] Significant at P< .05

Table 3 shows a bivariate analysis of the variables associated with self-assessment of the health status of family caregivers. There was a significant statistical association between the demographic variables (gender, age and education) and the respondents' self-assessed health status (*P*< .01).

Table 3. Bivariate analysis of variables associated with informal caregivers' self-assessed health status. Belém, Pará, Brazil, 2023.

Variables N=49	Self-evaluation Good N=25 (%)	Self-evaluation Very good N=5 (%)	Self-evaluation Neither good nor bad N=17 (%)	Self-evaluation Too bad /bad N=2 (%)	*P* value [a]
Gender					< .01 [a]
Male	5 (20.0)	2 (40.0)	2 (11.7)	0 (0.0)	
Female	20 (80.0)	3 (60.0)	15 (88.3)	2 (100.0)	
Age					< .01 [a]
22 ┤ 40	9 (36.0)	2 (40.0)	4 (23.5)	0 (0.0)	
41 ┤ 59	12 (48.0)	2 (40.0)	10 (58.8)	1 (50.0)	
≥ 60	4 (16.0)	1(20.0)	3(17.7)	1(50.0)	
Education					< .047 [a]
Complete primary education	2 (8.0)	0 (0.0)	1(5.8)	0 (0.0)	
Incomplete elementary education	5 (20.0)	1(20.0)	3(17.6)	1 (50.0)	
Complete high school	11 (44.0)	3 (60.0)	11(64.7)	1 (50.0)	
Complete higher education	7 (28.0)	1(20.0)	1(5.8)	0 (0.0)	
Incomplete higher education	0 (0,0)	0 (0,0)	1(5,8)	0 (0,0)	
Marital status					.071
Married/Stable union	6 (24.0)	1(20.0)	8(47.0)	1(50.0)	
Divorced/Separated	1 (4.0)	0 (0.0)	0 (0.0)	0 (0.0)	
Single	16 (64.0)	4 (80.0)	8 (47.0)	0 (0.0)	
Widower	2 (8.0)	0 (0.0)	1 (6.0)	1 (50.0)	

* *t-student Test;* [a] Significant *at P*< .05

Of the 49 hospitalized older adults interviewed, 31(63.2%) were men, 19 (61.2%) were between 60 and 69 years old. The average age was 69.2 (SD 7.12) years. The age group between 60 and 69 years old has a degree of dependence between mild and/or independent 21(67.8%) (Table 4).

Table 4. Comparison between the degree of functionality and age with age group of older adults hospitalized in a university hospital. Belém, Pará, Brazil, (N=49), 2023.

Variables	Total sample N=49 (100%)	60 ┤ 69 N=31 (63,2%)	70 ┤ 79 N=13 (26,5%)	≥ 80 N=5 (10,2%)	*P* value [a]
Degree of Functionality					< 0,04 [a]

Total/Severe/Moderate	16 (32,6%)	10 (32,2%)	03 (23,0%)	03 (60,0%)	
Light/Independent	33 (67,4%)	21 (67,8%)	10 (77,0%)	02 (40,0%)	
Gender					< 0,04 [a]
Male	31 (63,2%)	19 (61,2%)	8 (61,5%)	1 (20,0%)	
Female	18 (36,8%)	12 (38,8%)	5 (38,5%)	4 (80,0%)	

**t-student Test;* [a] Significant *at P*< .05

Regarding the functionality of hospitalized older adults who were interviewed, there was a predominance of older adults with a mild degree of dependence 23 (46.9%). All results were statistically significant (P< .01) (Table 5).

Table 5. Functionality classification of older adults hospitalized in a university hospital. Belém, Pará, Brazil, (N=49), 2023.

Degree of Functionality	**N**	**%**	***P value*** [a]
Total Dependence	5	10,0	< .01 [a]
Severe Dependence	5	10,0	< .01 [a]
Moderate Dependence	06	12,2	< .01 [a]
Light Dependence	23	46,9	< .01 [a]
Totally Independent	10	22,0	< .01 [a]

* *Teste t student;* [a] Significant *at P*< .05

Discussion

The increase in longevity worldwide requires a greater need for care for older adults, including during the period of hospitalization. In Brazil, there is a growing demand that falls on the family, which traditionally offers the necessary assistance to older adults who are unable to carry out daily activities. Hospitalization of an older adults constitutes a therapeutic intervention and the family caregiver becomes essential as it contributes to continuity of care and long-term recovery [15].

In this study, there was a predominance of women with an average age above 46 years old, pointing to the higher prevalence of caregivers who are women. A similar result was found in a study carried out with family caregivers in Latin America [13,16] and USA[17]. The presence of young adult caregivers is a challenge, as their functional reserve may be compromised, impacting at some point the best performance of their functions, compromising the quality of care provided to the most dependent older adults [16].

Regarding the relationship with the older adults being cared for, it was evident that the daughters took over the care, confirming that the act of caring is assigned to the woman. Historically, women assume the task of caring as another role pertinent to the domestic sphere [16]. Studies indicate that in Canada [18], Europe [19] and USA [17] the struggle of family caregivers is for social recognition and economic support from the State to fulfill their role, since there is invisibility of the work of women caregivers worldwide, work which impoverishes them financially and enriches the capitalist and patriarchal world.

Regarding marital status, the majority of family caregivers were single, unlike a national

study carried out in Brazil with caregivers that showed a predominance of married people [20] . Single women often play the role of informal caregiver, mainly because they do not have an established family, which makes them more available to care for their parents. Single women seem to be, in addition to being more available, more pressured by family members to perform this role [21].

In terms of education, the study showed that the majority have completed secondary education. Education can influence the understanding of the care to be implemented during the older adults hospitalization as well as the guidelines for preparing for hospital discharge. Therefore, health professionals must be aware of the resources adopted in light of the guidelines given to family caregivers, so that possible mistakes are prevented [20, 22].

Regarding the self-reported health condition, the majority of family caregivers reported it as good and/or neither good nor bad and stated that their health status was not affected by the provision of care. It is possible that the mild degree of dependence of older adults can provide greater peace of mind when providing care and less damage to their physical and emotional health [23]. In this case, health professionals must help prevent diseases and promote health for informal caregivers, taking into account their specificities [24].

In the context of providing care, most people regularly care for one person. This result may lead to overload and harm to the caregiver's quality of life concomitant with the solitary exercise of the task of caring over time. According to the Brazilian Classification of Occupation (CBO) under code 5162 defines a caregiver as someone who provides care based on the objectives established by specialized institutions or those directly responsible, ensuring well-being, health, nutrition, personal hygiene, education, culture, recreation and leisure of the assisted person. It is the person, from the family or community, who provides care to other people of any age, who are in need of care due to being bedridden, with physical or mental limitations, in this case an informal/family caregiver is defined as someone provided without remuneration and a caregiver formal care provided with remuneration in some professional category. In this case, it is worth highlighting the importance of the nurse's role in establishing a bond with the informal caregiver to carry out health education, a necessary tool in this context [25].

Regarding the profile of hospitalized older adults, the majority were men, a result that corroborates a study carried out with hospitalized Brazilian older adults. The male gender can be justified by the fact that the insufficient care that men take with their health can favor the occurrence of hospital admissions [25].

The average age was 69 years old with a lower degree of dependence in the age group between 60 and 69 years old). In another research carried out with hospitalized older adults, it was revealed that the older adults age is directly linked to the decline in functionality, making the older adults fragile, also during hospitalization with a predisposition to falls, presence of dizziness and some degree of dependence for activities of daily living. , directly affecting its autonomy [26].

In this study, we highlighted the association between self-assessment and demographic data (gender, age and education). This result corroborates a study carried out with Brazilian family caregivers that showed that the female gender and young age of family caregivers demonstrate greater vitality for caregivers, which is most often carried out by daughters [10].

Regarding functionality, according to the Barthel Index, there was a predominance of hospitalized older adults with mild dependence, corroborating studies carried out with hospitalized older adults in Brazil [4,26]. Aging is marked by diseases that can have repercussions on functionality, representing a challenge for public health. In this context, health professionals must promote actions that enable the prevention of disabilities, in addition to actions to promote and maintain the health of older adults that enable their functional autonomy.

The limitations of the study were the scarcity of research on family caregivers of hospitalized older adults using the Barthel scale, specifically in the Amazon region, which makes comparison with other statistical data difficult. Another limitation is the cross-sectional nature of this study,

which means that longitudinal studies may produce different or more precise results, in addition to investigating the impact and influence of the caregiver's demographic data in relation to the functional capacity of the older adults. The small sample size, a fact that makes possible generalizations of the results to the population scope, as well as more robust statistical analyses.

The study contributes, therefore, it provides information on the demographic and health profile of the family caregiver and can help health professionals in planning more individualized assistance, enabling a better quality of life and reducing the illness process. As well as contributing to actions that promote the functional capacity of older adults, enabling the development of prevention and health promotion strategies, so that the principles of the Unified Health System – equity, integrality and universality – can be experienced in the act of care.

Conclusions

The results of this study revealed that family caregivers are women with an average age of 46 years, single with complete secondary education. The majority self-assessed their health as good, showing that the act of caring does not interfere with the provision of care, which in this case is their parents who have a mild degree of dependence. It is noteworthy that there is an association between gender, age and education with the family caregiver's self-assessment of health.

This study contributes by addressing the need for research in the hospital context, promoting actions that can implement the provision of care aimed at the autonomy of hospitalized older adults and the development of a hospital assessment to assist family caregivers in their care for the older adults.

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Data availability

The data sets used and/or analyzed during this study are available and under the domain of the corresponding author upon plausible justification and/or referred to in the informed consent (Fabianne Sousa, fabiannesousa@hotmail.com).

Conflicts of Interest

None declared.

Author Contributions

Study design: FJDS.
Data collection: MCG.
Data analysis: FJDS, MCG and RRCS,
Manuscript writing: FJDS, WSS, JSV and ATP.

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