

## Factors associated with the quality of life of hospitalized elderly\*

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Factores asociados a la calidad de vida de los ancianos hospitalizados

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**Abstract: Objective:** to evaluate the quality of life of hospitalized elderly people and their association with sociodemographic, economic, length of stay and having a caregiver variables. **Method:** cross-sectional study, in which one hundred participants were included. Data collection took place between September 2018 and April 2019. The 36-Item Short Form Health Survey was applied. Spearman and Mann-Whitney correlation coefficient statistical tests were used. **Results:** mental health and physical aspects were, respectively, the domains of quality of life with the highest and lowest scores. Male, employed, without a caregiver, older age and family income were positively associated with quality of life; and negatively longer hospitalization and having a caregiver. **Conclusion:** the variables associated with quality of life were sex, age, occupation, higher family income, length of stay and caregiver. Care for hospitalized elderly should be planned, taking into account factors that interfere with quality of life.

**Descriptors:** Elderly; Quality of life; Hospitalization; Geriatric nursing; Socioeconomic factors

**Resumo: Objetivo:** avaliar a qualidade de vida de idosos hospitalizados e sua associação as variáveis sociodemográficas, econômica, tempo de internação e ter cuidador. **Método:** estudo transversal, no qual foram incluídos cem participantes. A coleta de dados deu-se entre setembro de 2018 e abril de

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2019. Aplicou-se o *36-Item Short Form Health Survey*. Utilizaram-se os testes estatísticos coeficiente de correlação de Spearman e de Mann-Whitney. **Resultados:** saúde mental e aspectos físicos foram, respectivamente, os domínios da qualidade de vida com maior e menor escore. Sexo masculino, empregado, sem cuidador, maior idade e renda familiar se associaram de forma positiva com qualidade de vida; e de forma negativa maior tempo de internação e ter cuidador. **Conclusão:** as variáveis associadas à qualidade de vida foram sexo, idade, ocupação, maior renda familiar, tempo de internação e cuidador. Os cuidados com idosos internados devem ser planejados, levando-se em consideração fatores que interferem na qualidade de vida.

**Descritores:** Idoso; Qualidade de vida; Hospitalização; Enfermagem geriátrica; Fatores socioeconômicos

**Resumen: Objetivo:** evaluar la calidad de vida de los ancianos hospitalizados y su asociación con variables sociodemográficas, económicas, de estancia y de tener un cuidador. **Método:** estudio transversal, en el que se incluyeron cien participantes. La recolección de datos se llevó a cabo entre septiembre de 2018 y abril de 2019. Se aplicó la encuesta del *36-Item Short Form Health Survey*. Se utilizaron pruebas estadísticas de coeficiente de correlación de Spearman y Mann-Whitney. **Resultados:** la salud mental y los aspectos físicos fueron, respectivamente, los dominios de calidad de vida con mayor y menor puntaje. Hombre, empleado, sin cuidador, mayor edad e ingresos familiares se asociaron positivamente con la calidad de vida; y hospitalización negativamente más prolongada y tener un cuidador. **Conclusión:** las variables asociadas a la calidad de vida fueron sexo, edad, ocupación, mayor ingreso familiar, tiempo de estadía y cuidador. La atención a los ancianos hospitalizados debe planificarse teniendo en cuenta los factores que interfieren con la calidad de vida.

**Descriptorios:** Anciano; Calidad de vida; Hospitalización; Enfermería geriátrica; Factores socioeconómicos

## Introduction

Brazil is experiencing important changes in the demographic profile and in the population age structure, due to the drop in the mortality rate and the increase in life expectancy to 75.8 years.<sup>1</sup> These changes are associated with numerous issues. Among them, we highlight the advances in light, hard and light-hard technologies in the healthcare field and the development of public policies aimed at healthy lifestyle for the elderly, valuing expanded care - the new paradigm of health promotion - and contributing to active, healthy aging and quality of life (QoL).<sup>2-3</sup>

Brazil has more than 28 million elderly people, a number that represents 13% of the country's population. This percentage tends to double in the coming decades,

according to the Population Projection released in 2018 by the Brazilian Institute of Geography and Statistics (IBGE).<sup>1</sup> This new configuration goes hand in hand with a transition in the epidemiological profile, characterized by an increase in chronic diseases. Elderly people experience a variety of chronic diseases, due to biological degeneration, with health problems almost inevitable in the last period of human life.<sup>4</sup>

Degenerative diseases can lead to reduced QoL, as they affect the mobility of the elderly and, consequently, the physical and functional status, emotional balance, and self-esteem.<sup>5</sup> In addition, chronic diseases are responsible for a large part of hospitalizations in the elderly. During hospitalizations, elderly people may experience loss of functionality, which may be due to a disease that determined hospitalization, previous clinical conditions, procedures to which they are submitted and poor adaptation of the healthcare system to aging.<sup>6</sup>

National and international studies have pointed out that QoL is related to individual and collective aspects, such as satisfaction with health, functional capability, self-esteem, well-being, lifestyle, schooling, socioeconomic and clinical factors, emotional state, social interaction, activity intellectual, self-care, family support, housing conditions, security, cultural, ethical values, religiosity, satisfaction with work and/or daily activities.<sup>7-10</sup> Thus, identifying QoL and related variables during the hospitalization of the elderly can make it possible to improve healthcare planning and management tools, ensuring the role of the elderly in the consolidation of decision-making processes related to their health, as well as subsidize health actions and clinical conduct by healthcare professionals that minimize the impact of these factors on the lives of the elderly.<sup>7</sup>

The 36-Item Short Form Health Survey (SF-36) is a generic, self-administered, and multidimensional instrument for assessing QoL. The advantages of its use for

assessing QoL stand out as being self-administered or applied through interviews, allowing the evaluation of health status, being easy to administer and understand and having been developed to be used in groups of any age group, pathology, treatment, ethnicity, or sex. Due to the simplicity of its application, it allows obtaining a greater amount of information. The average time for its application is 5 minutes, and the instrument meets strict criteria of reliability and construct validity. In addition, it is internationally recognized and used with the elderly.<sup>11</sup>

This study is justified by the fact that the aging of society requires health professionals to change the perception of the elderly, their place in society and their care priorities.<sup>2</sup> The focus of care in the hospital environment needs to target both clinical aspects and QoL as well, as the variety of health problems observed in the elderly requires planning and structuring comprehensive care for this population.<sup>6</sup> In order to achieve comprehensive care for hospitalized elderly people, the evaluation of QoL and the identification of factors related to it become necessary, since they can reveal to health professionals aspects of vulnerabilities and potentialities in the life of the elderly that cannot be identified by laboratory or imaging exam.<sup>7-9</sup> For the planning of care for the elderly, the use of an instrument for evaluating QoL becomes important, since there is still a knowledge gap about the evaluation of QoL in hospitalized elderly.<sup>8,11</sup> This study aimed to evaluate the QoL of hospitalized elderly people and their association with variables as sociodemographic, economic, length of stay and having a caregiver.

## Method

Cross-sectional study carried out in clinical and surgical units at Hospital São Paulo, a teaching hospital related to the Universidade Federal de São Paulo, in the

Southeast Region of Brazil. The process used to select the individuals included in the sample was for convenience, in the period of data collection that took place from September 1, 2018 to April 30, 2019, thus composing the final sample of one hundred elderly people.

The inclusion criteria of the research were to be aged over 60 years<sup>12</sup> and at least 3 days of hospitalization.<sup>13</sup> Elderly people who were disoriented and confused and who had a record of dementia in their medical records were not included. All the elderly included remained until the end of the research.

The data source was a structured questionnaire with information on age, sex, education, marital status, occupation, family income in minimum wages (from September to December 2018, the minimum wage was R\$ 954.00; from January to April 2019, R\$ 958.00), caregiver, religion, morbidity, and support network in the community. In addition, the instrument for assessing QoL SF-36 translated and validated in Brazil was applied.<sup>14</sup>

The SF-36 is a generic questionnaire composed of 11 questions and 36 items covering eight domains: functional capability (ten items that evaluate the presence and extent of limitations related to physical capability), physical aspect (four items that evaluate limitations regarding the type and quality of work, as well as how these limitations make it difficult to perform work and activities of daily living), pain (two items that evaluate the presence of pain, its intensity and its interference with activities of daily living), general health status (five items that evaluate how the patient feels in relation to their overall health), vitality (four items that consider the level of energy and fatigue), social aspect (two items that analyze the integration of the individual in activities social aspects), emotional aspect (three items that evaluate the impact of psychological aspects on the patient's well-being), mental health (five

items on anxiety, depression, changes in behavior or emotional lack of control, as well as psychological well-being) and a comparative question about the perception of current health and that of the last 12 months.<sup>14</sup>

The SF-36 does not allow to say whether the QoL was bad or good, since there is no total score for the instrument. It evaluates the participants' QoL based on their health status in each of the eight domains. The score for each one ranges from zero (worst QoL) to one hundred (highest QoL).<sup>14</sup>

The SF-36 scores were calculated according to the following steps: calculation of each domain (functional capability, physical aspects, pain, general health, vitality, social aspects, emotional aspects and mental health) and sum of the points obtained in each item relative to the corresponding domain for each elderly person and use of the minimum and maximum values possible, in each item, to calculate the transformed value, using the following formula:<sup>4</sup>

$$\frac{\text{Value obtained in the corresponding questions}}{\text{Variation (score range)}} = \frac{\text{lower limit} \times 100}{\text{Variation (score range)}}$$

The inpatient sector was asked daily for a list of patients aged 60 and over admitted to the hospital's clinical and surgical wards. Then, the researcher contacted the elderly in each unit, to see if they met the inclusion criteria. Afterwards, each selected participant was invited to take part in the study. When they agreed, they signed the Free and Informed Consent Form and, later, they were interviewed individually in the doctor's office that was available on the hospitalization floor. During the interview, only the researcher and the participant were present in the environment. The reading of the instruments was performed by the researcher in a

single moment, with an average duration of 30 minutes. All the elderly were interviewed by only one researcher during the data collection period.

An electronic spreadsheet was created for data storage, using the Microsoft Office 2007 Excel® program. The data collected were entered by two people, with double entry, for later verification of the existence of inconsistencies. In the event of disagreements, the researchers returned to the original interview, in order to make the relevant corrections.

For the statistical analysis of the data, descriptive analysis was used for the sociodemographic, clinical, and economic characterizations, and about having a caregiver, religion, and support network in the community. For continuous variables, mean, standard deviation, median, minimum, and maximum were calculated and, for categorical variables, frequency, and percentage. To relate age, days of hospitalization and family income, Spearman's correlation coefficient was used, and to compare sex, occupation and caregiver, the Mann-Whitney test was used. A significance level of  $p < 0.05$  was considered, and the program used for the analysis was the Statistical Package for the Social Sciences (SPSS) version 19.

The project was evaluated by the institution's Ethics and Research Committee, under number CAAE 93298318.7.0000.5505 and approval number 2,776,042 on July 18, 2018, according to resolution 466/2012 of the National Health Council.

## Results

The mean age and hospitalization of the elderly were 71.81 (SD±8.32) years and 18.19 (SD±33.73) days of hospital stay, respectively. Participants were men (n=50; 50.00%) and women (n=50; 50.00%). The same number of participants of each sex was not a criterion. Most were white (n=65; 65.00%), married (n=49; 49.00%), without a

caregiver (n=72; 72.00%), had religion (n=96; 96.00%) and the most prevalent morbidities were systemic arterial hypertension (SAH) (n = 64; 64.00%) and diabetes mellitus (DM) (n=32; 32.00%). Most of the population was retired or pensioner (n=73; 73.00%), with 3 years of study (n=49; 49.00%), monthly family income of approximately three minimum wages and support network in the community (n=96; 96.00%).

In Table 1, it can be seen that the domains that were shown to be more compromised of the SF-36 were physical aspects, functional capability, and pain, which scored below 50.

Table 1 - Scores for the domains of the 36-Item Short Form Health Survey of hospitalized elderly (n=100). São Paulo, SP, Brazil, 2018-2019

Domains of the 36-Item Short Form Health Survey	Mean	Standard deviation
Functional capability	42.15	27.57
Physical aspects	18.75	34.70
Emotional aspects	54.65	47.98
Pain	48.89	39.37
General health status	55.27	19.92
Vitality	58.15	29.34
Social aspects	52.44	35.14
Mental health	71.28	25.76

Male patients had higher scores in the physical aspects, pain, and vitality domains than female patients. Those who were employed had a higher score on the physical aspects when compared to the unemployed, and those without a caregiver had higher scores on functional capability, pain, and social aspects than patients with a caregiver (Table 2).

Table 2 - Association between sociodemographic and caregiver variables with the quality of life of hospitalized elderly (n=100). São Paulo, SP, Brazil, 2018-2019

Variables	Domains of the 36-Item Short Form Health Survey															
	Functional capability		Physical aspects		Emotional aspects		Pain		General health status		Vitality		Social aspects		Mental health	
	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>	M <sup>†</sup>	DP <sup>†</sup>
Sex*																
Male	45.30	29.87	27.00	40.98	57.98	47.54	59.14	40.62	54.12	19.77	65.60	27.06	55.46	38.14	75.36	24.19
Female	39.00	24.97	10.50	24.79	51.32	48.67	38.64	35.61	56.42	20.20	50.70	29.90	49.42	31.96	67.20	26.85
p value <sup>§</sup>	0.3635		0.0412		0.4720		0.0130		0.4724		0.0141		0.4096		0.1006	
Occupation*																
Employed	54.17	31.37	58.33	46.55	61.17	49.07	45.67	46.21	48.17	24.09	53.33	36.56	56.33	48.48	85.33	12.31
Unemployed	41.01	27.30	15.48	31.50	52.36	48.08	48.92	39.79	55.69	19.40	57.86	28.52	52.58	34.45	71.00	24.49
p value <sup>§</sup>	0.4815		0.0459		0.5578		0.9787		0.7004		0.7411		0.8957		0.3975	
Caregiver*																
Yes	31.43	26.56	9.82	27.50	52.36	49.22	35.29	37.63	54.25	18.36	53.04	31.43	40.79	32.04	67.43	29.06
No	46.32	27.00	22.22	36.71	55.54	47.81	54.18	39.01	55.67	20.60	60.14	28.47	56.97	35.45	72.78	24.41
p value <sup>§</sup>	0.0165		0.0656		0.7972		0.0281		0.6306		0.2778		0.0357		0.4933	

\*Mann-Whitney test, <sup>†</sup>M = Mean, <sup>†</sup>SD = Standard deviation, p value<sup>§</sup>=level of significance.

Table 3 shows that the older the age, the higher the scores for the physical aspects and pain domains. The higher the family income, the higher the vitality domain score. The longer the hospital stay, the lower the scores in the functional capability, pain, social aspects, and mental health domains.

**Table 3 - Correlation between socio-demographic and economic variables with the quality of life of hospitalized elderly (n=100). São Paulo, SP, Brazil, 2018-2019**

Domains of the 36-Item Short Form Health Survey		Age	Hospitalization	Family income
Functional capability	R*	-0.02	-0.34	0.09
	p value <sup>†</sup>	0.8212	0.0006	0.4796
Physical aspects	R*	0.21	-0.04	0.12
	p value <sup>†</sup>	0.0343	0.6829	0.3523
Emotional aspects	R*	0.07	-0.13	0.04
	p value <sup>†</sup>	0.5120	0.2120	0.7579
Pain	R*	0.23	-0.23	0.07
	p value <sup>†</sup>	0.0218	0.0219	0.5978
General health status	R*	0.06	-0.13	0.05
	p value <sup>†</sup>	0.5819	0.1901	0.6992
Vitality	R*	0.02	-0.19	0.28
	p value <sup>†</sup>	0.8767	0.0652	0.0210
Social aspects	R*	0.17	-0.22	-0.05
	p value <sup>†</sup>	0.1008	0.0301	0.6654
Mental health	R*	0.03	-0.25	0.17
	p value <sup>†</sup>	0.7429	0.0130	0.1745

\*R=Spearman's correlation coefficient, †p value=significance level.

## Discussion

In this study, the domains that were shown to be most compromised in SF-36 were physical aspects, functional capability, and pain. Elderly males showed higher scores in the domains of physical aspects, pain, and vitality. The older the age, the higher the scores for the physical aspects and pain domains. Those who were employed had a higher score in physical aspects. Those without a caregiver had higher scores for functional capability, pain, and social aspects. The higher the

family income, the higher the vitality domain score. The longer the hospital stay, the lower the scores in the functional capability, pain, social aspects, and mental health domains.

The findings of this research related to sociodemographic characteristics corroborate an international study carried out with elderly people at the Hospital Vlietland, in the Netherlands, and a national study, with elderly people at the Hospital das Clínicas, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista (Unesp), with similar average age mostly married and retired. However, the average of the period, in days of hospitalization in the national sample, was lower.<sup>7,15</sup>

The most prevalent morbidities found in the study were SAH and DM. With advancing age, the elderly become more susceptible to the emergence of one or more diseases, especially chronic-degenerative ones, which can negatively impact the perception of the QoL of this population, since they can contribute to the decline in functional capability and autonomy. National and international literature already points out that patients with a medical diagnosis of SAH and DM are at higher risk for falls when compared to those who do not have such comorbidities. Just as SAH and DM were the most prevalent comorbidities among respondents, it is important that nurses pay attention to the potential complications to which the pathophysiology of these diseases predisposes and offers preventive actions in the hospital environment, which, in turn, reduce the risk of falls of hospitalized elderly people.<sup>16-18</sup>

It was observed, among the hospitalized elderly, that the most compromised dimensions of QoL were: physical aspect, functional capability and pain. These findings differ from a research carried out at the Medical University of Warsaw, in Poland, with elderly people who were assisted at the outpatient clinic for the treatment of glucose metabolism disorders, in which the mean in all dimensions of the SF-36 was above 68 points, being the lowest scores in the dimensions of general health and vitality.<sup>19</sup> This result may be related to the fact that the hospitalization of the elderly is associated with the worsening of functional capability, which has the consequences of increasing dependence and decreasing autonomy, as well as increasing the risk for falls, institutionalization,

and premature death.<sup>20</sup> It appears in the literature that pain is common among hospitalized patients and is associated with worse QoL. Pain control is essential for comprehensive patient care, as well as the responsibility and commitment of the healthcare professional; however, there is still a lack of compliance with its management guidelines.<sup>21</sup>

A study that evaluated the QoL of men and women undergoing hemodialysis found that men had higher means,<sup>22</sup> as did the male patients in this study, who had higher scores in the domains of physical aspects, pain, and vitality than those of women. Older women tend to see aging as a more negative process than older men, probably due to cultural patterns of apology for the beauty of young women. This leaves them at greater vulnerability, not only to health problems, but to social isolation and emotional disorders, due to retirement, widowhood, and physiological changes.<sup>23</sup>

The elderly who were employed had a higher score in physical aspects when compared to the unemployed. For the performance of many work activities, it is essential that the worker is well physically. This may explain the result found in this research. Still, work is not only a source of income for human beings, as it interferes in the way the elderly person perceives himself/herself and even how he/she is perceived by society.<sup>24-25</sup>

Among the interviewees in this study, those without a caregiver had higher scores on functional capability, pain, and social aspects than patients with a caregiver. Hospitalization can be a greater risk for the elderly, as it results in decreased functional capability and loss of autonomy, often leading them to dependence on activities of daily living and the need for a caregiver to assist them in simple activities, how to eat or dress, negatively affecting your QoL. In addition, hospitalization can cause family and social distance.<sup>26</sup> Therefore, these results alert the need for nurses to include in their care plan for hospitalized elderly people the evaluation of functional capability and pain, in addition to guiding caregivers about maintaining the functionality of the elderly.<sup>9,27</sup>

The results of the present research showed higher scores in the physical aspect and pain domains, according to the older age. These findings may be associated with greater resilience in the researched group in relation to hospitalization. Resilience is generally defined as the ability of the individual or family to face setbacks and adversities, to be modified by them and to be able to overcome them. Faced with so many losses associated with aging, resilience presents itself as a latent resource, which can be activated by the elderly in the face of the challenges imposed by hospitalization.<sup>28</sup>

The longer the hospitalization time of the elderly in this study, the lower the scores in the functional capability, pain, social and mental health domains. It is known that, with hospitalization, the elderly may experience loss of functionality, pain, fatigue, and decreased quality of sleep, in addition to often leading to the removal of close friends and relatives during this period. Therefore, flexibility and longer hospital visits can favor the social aspect and become an important strategy to help coping with the daily adversities and feelings of loneliness of the elderly during the hospitalization period.<sup>28-29</sup>

A study with elderly hospitalized in Belo Horizonte, Minas Gerais, found that low income had a negative influence on the QoL of respondents.<sup>9</sup> Also in this study, the higher the income, the greater the vitality domain. With aging, retirement plays a fundamental role in the income of the elderly. Moreover, individuals become increasingly dependent on financial assistance from other residents of the household to pay their bills, buy medicine and maintain their standard of living. Thus, a better socioeconomic condition shows a positive association with the best QoL.<sup>30</sup>

This research had as limitations the fact that it was carried out in a single center, with assistance only provided to patients in the public healthcare system, which may not represent other realities, so that the results cannot be generalized. Additionally, it was a cross-sectional study with a small number of patients. Still, when applying the questionnaire to hospitalized

elderly, limitations of the instrument were identified for this population. The questionnaire is extended to patients with compromised clinical condition.

## **Conclusion**

In this study, the variables that were positively associated with QoL were male, employed, without a caregiver, older age, and family income. The variable that was negatively associated with QoL was longer hospital stay and having a caregiver.

In this research, hospitalized participants had lower scores in the domains of physical aspects, pain, and functional capability. Elderly males showed higher scores in the domains of physical aspects, pain, and vitality. The older the age, the higher the scores for the physical aspects and pain domains. Those who were employed had a higher score on physical aspects, and those without a caregiver had higher scores on functional capability, pain, and social aspects. The higher the family income, the higher the vitality domain score. The longer the hospital stay, the lower the scores in the functional capability, pain, social aspects, and mental health domains.

It is evident the importance that care for hospitalized elderly people is planned and implemented, taking into account the factors that interfere positively and negatively in their QoL. They also help to improve the care provided to the elderly, as knowledge of the factors that interfere positively or negatively in QoL is important to guide the conduct, treatment, and policies for hospitalized elderly.

Therefore, these results can contribute to nursing interventions aimed at controlling pain and maintaining the functional capability of hospitalized elderly. During hospitalization, nurses need to assess pain, functional capability and QoL of the elderly using validated scales. Thus, they can plan care to minimize or avoid loss of functional capability, prevent complications, and improve QoL, encouraging self-care and autonomy for this population. Whenever necessary, they should assume the role of provider of this care, seeking the best QoL.

It is suggested that new research be developed with a more robust design, so that there is an indication of effective interventions for clinical practice.

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