ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 07, Issue, 11, pp.17025-17028, November, 2017

ORIGINAL RESEARCH ARTICLE OPEN ACCESS

ASSESSMENT OF FRAILTY AND RELATED FACTORS AMONG THE ELDERLY CARED AT A REFERENCE CENTER

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ARTICLE INFO

Article History:
Received 10th August 2017
Received in revised form
24th September, 2017
Accepted 18th October, 2017
Published online 29th November, 2017

Key Words:
Aging,
Frailty,
Health.

ABSTRACT

This study aims to assess frailty and to identify the risk factors among the elderly cared at a reference center. It is a descriptive, exploratory study with a quantitative approach, carried out with 38 elderly cared at the Full Care Center for the Elderly Health, located in São Luís, the capital city of Maranhão, Brazil. One built the instrument for data collection with social-demographic data (gender, age, marital status, income and education). Brazilian validated version of Edmonton Frail Scale for the assessment of frailty. Barthel's Index for the assessment of the Basic Activities of Daily Life and by Lawton's Scale for the assessment of the Instrumental Activities of Daily Life. One conducted the descriptive analysis and the use of Kruskall-Wallis's Test, by adopting the significance level p≥0.005. By applying Kruskall-Wallis's Test between the categories of the frail scale and the study variables, one evidenced significant statistical difference between moderate frailty and dependence in the Instrumental Activities of Daily Life *(p=0.001)* and moderate frailty and illiteracy *(p=0.001)*. One verified that the frequence of frailty among the researched population is high and that the presence of moderate frailty is associated with the limitation in the Instrumental Activities of Daily Life and the elderly illiteracy.

Citation: Rinda Dewi Safitri, Risi Cicilia, Intan Galuh Bintari, Intan Permatasari Hermawan, Mustofa Helmi Effendi Rahaju Ernawati and Jola Rahmahani, 2017. "Assessment of frailty and related factors among the elderly cared at a reference center", *International Journal of Development Research*, 7, (11), 17025-17028.

INTRODUCTION

In Brazil, as well as in a big part of the world, one notices the increase in life expectancy of the population, and according to the United Nations data (2012), it is estimated that in 2050, 22% of the world population will be composed of people aged 60 or older.

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Aging is considered a complex process of multiple cultural, economic, political, demographic and symbolic determinations marked by biological losses, functionality decrease, social aspects in the working realm and in the several social groups that do not follow any linearity nor homogeneity patterns (FALEIROS, 2014). To WHO (2015), dramatic falls in the fertility rates and the increase of life expectancy have led to the fast aging of the world population, thus awakening an intense relationship between the dependence on good health conditions, longevity and the preservation of the functional capacity. Due to the population longevity, one knows that the chronic diseases contribute to the rise of frailty and dependence on other people, be they family members, friends or formal caretakers (MARENGO. TOLEDO. BARBOSA,

2016). Despite this phenomenon, the older a population is, the higher the rate of Non-Communicable Chronic Diseases, thus culminating in disorders by impairment in the independence, in the autonomy and in the functionality performed by the elderly person (COUTO et at., 2016). Frailty consists in a multidimensional syndrome that involves the interaction of several biologic, psychologic and social factors and has a thin relationship with higher risks of decline in the functional capacity, falls, delirium, institutionalization and death (CARNEIRO *et al*., 2017). The occurrence of diseases may affect the elderly general health state, making them more vulnerable to the development of several conditions, among them frailty (SOUSA *et al*., 2015). Psychosocial repercussions, such as dependence, depression and loneliness, have increasingly become more common among the frail elderly (MELLO *et al*., 2014). Zanin *et al*. (2017) state that the functional incapacity among the elderly may be considered a public health problem and therefore detect early frailty, reduce the risk of morbidity, mortality and hospitalization of the elderly. In front of such reality, the early identification of risk factors pre-elective to frailty may reduce or redirect new ways of dealing with the impacts on life quality of this population. From this perspective, this study aims to assess the frailty and identify the risk factors among the elderly cared at a reference center.

MATERIALS AND METHODS

This is a descriptive exploratory study with quantative approach, extracted from the Master's Dissertation of the Post-Graduation Program in Memory: Language and Society of the State University of Southwestern Bahia named "Memory and Social Representations of frail elderly about the dependence for the activities related to nutrition". The study was conducted with 38 elderly cared at the Full Care Center for the Elderly Health, located in São Luís, the capital city of Maranhão, Brazil. The choice of this place was due to the fact that it is one of the largest reference centers in the metropolitan region, which cares the frail elderly, the target population of this research. The adopted inclusion criteria were: preserved cognitive state as assessed by Folstein's Mini-Mental State Examination (MMSE) (scores above 7 points), being under care during the collection phase and having a caretaker. And the following exclusion criteria: the elderly newly admitted to the service and who were recurrently absent from the assistance.

The data collection instrument was constituted by social-demographic data (gender, age, marital status, income and education). the validated Brazilian version of Edmonton Frail Scale (FABRÍCIO-WEHBE *et al*., 2009), for the assessment of frailty. Barthel's Index (MINOSSO *et al*., 2010) for the assessment of the Basic Activities of Daily Life and by Lawton's Scale (LAWTON. BRODY. 1969) for the assessment of the Instrumental Activities of Daily Life. Edmonton Frail Scale assesses nine areas: cognition, general health state, functional independence, social support, medicine use, nutrition, mood, continence and functional performance. On this scale answers are divided in three columns A, B and C. Column A represents a score equal to zero. column B corresponds to one point. and column C represents two points, thus charaterizing individuals with a score between zero and four, those who do not present any frailty. between five and six, those seemingly vulnerable. from seven to eight, they present slight frailty. from nine to ten, moderate frailty. and eleven or more, severe frailty. Barthel's Index is composed of ten areas: nutrition, shower, bath, personal hygiene, intestinal elimination, vesical elimination, toilet use, chair-bed passage, walking and stairways. The sum of the items involves the total score between 0 and 100 points, 0-20 indicating total dependence. 21-60, serious dependence. 61-90, moderate dependence. 91-99, slight dependence. and 100, independence. Lawton's Scale assesses the abilities of using the phone, going shopping, preparing food, permorming household chores, taking their medicine, controlling their finances and traveling. This scale is composed of nine areas, with a total score that varies from 9 to 27 points, enabling a classification as dependent when reaching a score of maximum 9 points. semi-dependent characterized by a score from 10 to 18 points. and from 19 to 27 points, the elderly classified as independent. This study was approved by the Research Ethics Committee of Faculdade Independente do Nordeste under the Protocol number 1.859.528. In order to take part in the research the elderly signed the Written Informed Consent Form/WICF, which explained the objectives of the research study, with secrecy and preservation of confidencial information and the right of non-identification both of those involved and participants in the research. The data were analyzed by means of the statistical Program SPSS, version 22.0, with discriptive analysis and the use of Kruskall-Wallis's Test, by adopting the significance level $p \geq 0.005$.

RESULTS

In the social-demographic characterization of the elderly, one noticed that there was more frequence of female elderly (76.3%), age between 80 and 89 years (42.1%), single (68.4%), income according to retirement (89.5%) and education level of complete Elementary School (47.4%), according to data from Table 1.

Table 1. Social-demographic characterization of the elderly São Luís/MA, 2017

	N	%
Gender		
Female	29	76.3
Male	9	23.7
Age		
60 to 69	6	15.8
70 to 79	12	31.6
80 to 89	16	42.1
90 or older	4	10.5
Marital Status		
With a partner	12	31.6
Single	26	68.4
Income		
Retired	34	89.5
Pensioner	3	7.9
Retired + Pensioner	1	2.6
Education		
Illiterate	2	5.3
Incomplete Elementary School	7	18.4
Complete Elementary School	18	47.4
Complete Secondary School	9	23.7
Technical Education	1	2.6
Higher Education	1	2.6
Total	38	100.0

By means of Table 2, it is possible to notice that according to the assessment of the Frail Scale, 36.8% of the elderly were classified as seemingly vulnerable and 44.7% showed themselves as frail.

Table 2. Distribution of the elderly according to the Frail Scale São Luís/MA, 2017

	N	%
Frail Scale		
No frailty (0 to 4 points)	7	18.4
Seemingly vulnerable (5 to 6 points)	14	36.8
Slight frailty (7 to 8 points)	11	28.9
Moderate frailty (9 to 10 points)	6	15.8
Total	38	100.0

According to the functional capacity the elderly were classified as having serious dependence (57.9%) in the Basic Activities of Daily Life/BADL and as dependent (94.7%) in the Instrumental Activities of Daily Life/IADL, as shown in Table 3.

Table 3. Distribution of the elderly according to the functional capacity (BADL and IADL). São Luís/MA, 2017

	N	%
BADL		
Independence (100 points)	3	7.9
Slight dependence (≥ 60 points)	1	2.6
Moderate dependence (≤ 40 points)	12	31.6
Serious dependence (≤ 20 points)	22	57.9
IADL		
Independent	2	5.3
Dependent	36	94.7
Total	38	100.0

By using Kruskall-Wallis's Test between the frail scale categories and the study variables, one noticed significant statistical difference between moderate frailty and dependence in the IADL (*p=0.001*) and moderate frailty and illiteracy (*p=0.001*).

DISCUSSION

Identifying the presence of frailty among the elderly as well as risk factors for this impairment is extremely important in the realm of health because it generates the possibility of an early preventive intervention for the healthy aging. Upon assessing the social-demographic characteristics of the population, one noticed that more than ¾ of the elderly who attended the reference center were female, thus showing a tendency of predominance of the female gender in the populational aging and in the search for health care. Levorato *et al*. (2014) states that women look for the health units approximately twice more frequently than men, and that this further care contributes for women to have an increased longevity. Another interesting data was the observation that only 28.9% had at least complete Secondary Education, thus showing a population with low rates of education, which is confirmed by 5.3% of illiterate elderly, and 18.4% having incomplete Secondary Education. These findings are similar to the study by Luz *et al*. (2014) that shows a history of the elderly withdrawing in relation to education, explained by an only recent evolution towards the universal access to schools. One also understands that such low rates is a very bad indicator, because, among other factors, it reflects a bad health condition and the emergence of negative aging markers (LENTSCK *et al*., 2015). It was possible to notice that a big part of the sample (44.7%) showed themselves as frail, 28.9% with slight frailty, and 15.8% with moderate one. Besides, one notices that 36.8% are in a state of vulnerability for the concerned syndrome, and only 18.4% without any symptomatology. Such percentages reflect very bad health conditions of the investigated elderly, because of the high frailty scores when compared to other studies. Santos *et al*. (2016), in a study on populational basis conducted in Brazil, found a total prevalence of 23.8%, similar results to the findings by Libre *et al*. (2014). One understands that upon showing themselves as frail the elderly are susceptible to the triggering of health problems that once accumulated will generate a negative outcome, with the increase of comorbidities, falls, hospitalization, insanity, among other factors of physical and mental changes (CHEN. MAO. LENG, 2014). The terrible physical health conditions of the population are even more evidenced when one notices that 7.9% were independent for the BADL, and 57.9% presented serious dependence for the same activities. Upon assessing the IADL the data are corroborated with 94.7% being dependent. As well as frailty, a functional dependence brings with it a lot of damage to the elderly health. Pinto Júnior *et al*. (2016) noticed that such dependence is associated with heart diseases and the presence of depression, whereas Santana *et al*. (2017) noticed that the higher the dependence the deeper the feeling of sadness, impotence and insatisfaction with life among the elderly. Upon proceeding to the analyses of association among the variables of the study, one noticed that the relationship between frailty and functional dependence was present, because moderate frailty was associated with dependence in the IADL (p=0.001). This finding corroborates with the study by Reis Júnior *et al*. (2014), who found a similar association, and it is justified because one knows that among the effects of frailty it is common to find the decrease of the energy reserves and the ability of keeping and recovering the body homeostasis, causing limitation in the performance of voluntary activities and resulting in the loss of functionability and autonomy (FRIED *et al*., 2004). Freitas *et al*. (2016) states that with the presence of frailty, first the elderly have decrease in their level of independence for the IADL and only then, if frailty becomes severe, they present limitations in the BADL, thus corroborating with the results found in this research. Another item that was also associated with moderate frailty was the elderly illiteracy (p=0.001), reinforcing what was dicussed in the above paragraphs, which state that a low education level may influence in the emergence of bad health indicators (LENTSCK *et al*., 2015). One can also explain this association because one knows that among the factors that contribute to frailty is the cognitive state, and this has a direct relationship with the individual's education level (FARIA *et al*., 2013. REIS JÚNIOR *et al*., 2014). The study presents some limitations like the sample size, which resulted from the elderly accession to the research and the transversal character that impeached the generation of causality relations. However, through the obtained results, one notices that the identification of the prevalence of frailty and the factors associated with its presence showed extreme applicability in the practical realm of health, because they generate the possibility of the early elimination of markers that may contribute to the emergence of such syndrome, or the potentialization of protection factors for its prevention, avoiding that other problems occur in the physiological and functional aging. It was possible to conclude that the frailty distribution is high in the investigated population and that the presence of moderate frailty is associated with the limitation in the IADL and the elderly illiteracy.

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