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Hospitalization and mortality in institutionalized elderly

Hospitalização e mortalidade em idosos institucionalizados

Hospitalización y mortalidad en ancianos institucionalizados

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O presente estudo tem como objetivo avaliar as causas e índice de hospitalização e mortalidade em idosos institucionalizados, entre 2013 a 2016, numa ILPI da região Sul da cidade de São Paulo. Este é uma pesquisa retrospectiva realizada com prontuários de idosos institucionalizados. Avaliados o atestado de óbito, dados relacionados ao perfil antropométrico pessoal, antecedentes de saúde, diagnóstico, medicação em uso, manifestações clinicas, histórico de quedas, fraturas e, hospitalizações. Utilizou-se 25 prontuários, distribuídos em dois grupos, G1 composto de 19 pacientes vivas e, G2 seis indivíduos que foram a óbito. 100% eram do sexo feminino. O tempo médio de institucionalização 4,8±3,9 anos, a idade G2 foi significantemente maior (p=0,028), proporção de dependentes (p=0,04) e de hospitalizações (p=0,028). O G1 tinha maior proporção de indivíduos independentes, que realizavam as AVDs (p=0,002). Concluiu que os fatores que predispõem a hospitalização e a mortalidade de idosos institucionalizados é a idade avançada, dependência para realizar as atividades de vida diária e perda de locomoção.
Descritores: Mortalidade; Hospitalização; Idoso.

The objective was to evaluate the causes of hospitalization and mortality in institutionalized elderly. It is a retrospective study carried out with records of institutionalized elderly people from January 1, 2013 to December 1, 2016. We evaluated death certificate, data related to the personal anthropometric profile, health background, diagnosis, medication in use, clinical manifestations, history of falls, fractures, hospitalizations. We used 25 records, distributed in two groups, G1 composed of 19 living patients, G2 six individuals who died. 100% female. The mean time of institutionalization was 4.8 ± 3.9 years, G2 age was significantly higher (p=0.028), proportion of dependents (p=0.04) and hospitalizations (p=0.028). G1 had a higher proportion of independent individuals, who performed ADLs (p=0.002). We concluded that the factors that predispose hospitalization and mortality of institutionalized elderly people are old age, dependence to perform activities of daily living and loss of locomotion.
Descriptors: Mortality; Hospitalization; Elderly.

El presente estudio tiene como objetivo evaluar las causas e índice de hospitalización y mortalidad en ancianos institucionalizados, entre 2013 y 2016, en una ILPI de la región sur de la ciudad de São Paulo. Esta es una investigación retrospectiva realizada con expedientes médicos de ancianos institucionalizados. Fueron evaluados el atestado de óbito, datos relacionados al perfil antropométrico personal, antecedentes de salud, diagnóstico, medicación en uso, manifestaciones clínicas, histórico de caídas, fracturas y hospitalizaciones. Se utilizaron 25 expedientes distribuidos en dos grupos, G1 compuesto de 19 pacientes vivas y G2 de seis individuos que fueron a óbito, 100% eran del sexo femenino. El tiempo medio de institucionalización 4,8+ - 3,9 años, la edad G2 fue significativamente mayor (p=0,028), proporción de dependientes (p=0,04) y de hospitalizaciones (p=0,028). El G1 tenía mayor proporción de individuos independientes que realizaban las AVDs (p=0,002). Se concluyó que los factores que predisponen la hospitalización y la mortalidad de los ancianos es la edad avanzada, dependencia para realizar las actividades de la vida diaria y pérdida de locomoción.
Descriptores: Mortalidad, Hospitalización; Anciano.

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INTRODUCTION

Currently, population aging is a worldwide phenomenon. Especially in developing countries, like Brazil, the increase in the number of elderly is happening very quickly and progressively[1].

From the Decade of 1970, in almost all developing countries at the same time, the fertility rate began to decrease, and mortality continued shrinking, which contributed toa contractedand over aging population[2].

Increased access of the population to general networks of water and sanitation, greater access to health care, vaccination campaigns, among other public health actions, contributed decisively in the reduction of mortality levels in the country and, consequently, on the life expectancy of the Brazilian population. And about fertility, women's education and their insertion in the labor market, especially in the urban area are factors associated with its fast reduction[3].

In Brazil, there are more than 21 million people with 60 years old or more, which is about 11% of the total population[4].

In 2010, there were in the country 20.5 million of elderlies, about 39 for each group of 100 young people. It is estimated that in 2040, it will more than double, representing 23.8% of the Brazilian population and a proportion of almost 153 elderlies for every 100 young people[5].

Aging with fragility is a continuous and complex process involving the interaction of several factors, such as biological, psychological and social, that culminates in a favorable state for conditions that generate dependence and institutionalization, such as cognitive alterations, urinary incontinence, gait instability and falls[6].

Long-Stay Institutions for the Elderly (LSIE) are configured as a residential space with socio-care and health services for integral assistance[7].

The target of these establishments are people from 60 years old, dependent or independent, who do not have conditions to stay with their family or at home. These institutions must provide services in the areas of social, medical, psychological, nursing, physiotherapy, occupational therapy, dentistry and others, according to the needs of such age segment.

LSIE are places that must reproduce the residential environment, maintaining the characteristics of a home. They should not be marked by isolation, out of social life, nor constitute a space for the standardization of the elderlies life[8].

Hospitalization triggers in elderly people a series of events that often decrease theirfunctional capacity and quality of life and causes complications not related to the problem that led to hospital admission[9-11].

Thus, for many elderlies, hospitalization does not improve their health framework, on the opposite, there is a correlation with increasing the rate of mortality and morbidity, worsening their prognosis and predisposition to the process of fragilization[10,11].

It is clear the need to reorganize the assistance models, because of the demographic transition that impacts on health through changes in the profile of morbidity and mortality of the population. To this end, adequate care for the elderly should be focused on the prevention and identification of signs and symptoms that precede their death and hospitalization[12].

The objective of this study is to evaluate the causes and index of hospitalization and mortality in institutionalized elderlies, between 2013 and 2016, in a LSIE of the southern part of São Paulo city.

METHOD

This is a retrospective study with a quantitative approach, carried out in a long-stay institution for the elderly located in the southern part of São Paulocity. The period considered was January 1, 2013 to December 1, 2016.

From the selected records, a we carried out a retrospective analysis, considering the following data: patient identification (age and sex), background, time in the nursing home, number of falls, hospitalizations, number of fractures, medications and death certificate, when it was the case.

Information collected had a guarantee of secrecy that ensures the privacy and anonymity of the subjects regarding the confidential data involved in the research.

Data are presented on mean and standard deviation. The normality of the data was analyzed by means of the Korolmorgov-Sminov test. We used Kaplan Mayer method to assessmortality and hospitalization. It considered $p<0.05$ with statistical significance level.

The project was approved by the Research Ethics Committee of the Centro Universitário Adventista in São Paulo-CEP/UNASP.

RESULTS

25 patient records were selected between January 1, 2013 and January 1, 2016, which were distributed in two groups, the first consisting of 19 patients alive, and the second consisting of six individuals who were died.

All of them were female. It considered all the patients that enter the institution in this period, though for hospitalizations, falls and deaths we considered the last three years. This institution has a hospitalization capacity of 35 patients, but in this period, there were only 25 patients (Table 1).

Table 1. Anthropometric, clinical characteristics, and independence of the elderly. São Paulo-SP, 2017.

Variables	Alive (n=19)	Death (n=6)	P value
Age (years old)	80.7±8.1	88.1±5,7	**0.028**
BMI (kg/m2)	26.2±5.0	25.05±6,0	0.31
Sex (f) (%)	100.0	100.0	
Time institutionalized (years)	4.3±4.0	6.6±2.8	0.1
Hospitalization (%)	57.8	100.0	**0.028**
Falls (%)	42.1	33.3	0.35
Fractures (%)	15.7	0.0	0.15
Surgeries (%)	36.8	33.3	0.44
Locomotion (%)			
Independent	57.8	16.6	**0.04**
With help	21.0	16.6	0.41
Wheel chair	10.5	33.3	**0.09**
Restrict to bed	10.5	33.3	**0.09**
ADL (%)			
Perform ADL	47.3	0.0	**0.01**
Partially dependent	31.5	16.6	0.24
Dependent	21.0	83.3	**0.002**

The average age of the participants when monitoring began, was 84.3 (sd± 6.3 years). It was observed that 80% of the participants were alive at the end of the follow-up as in Figure 1.

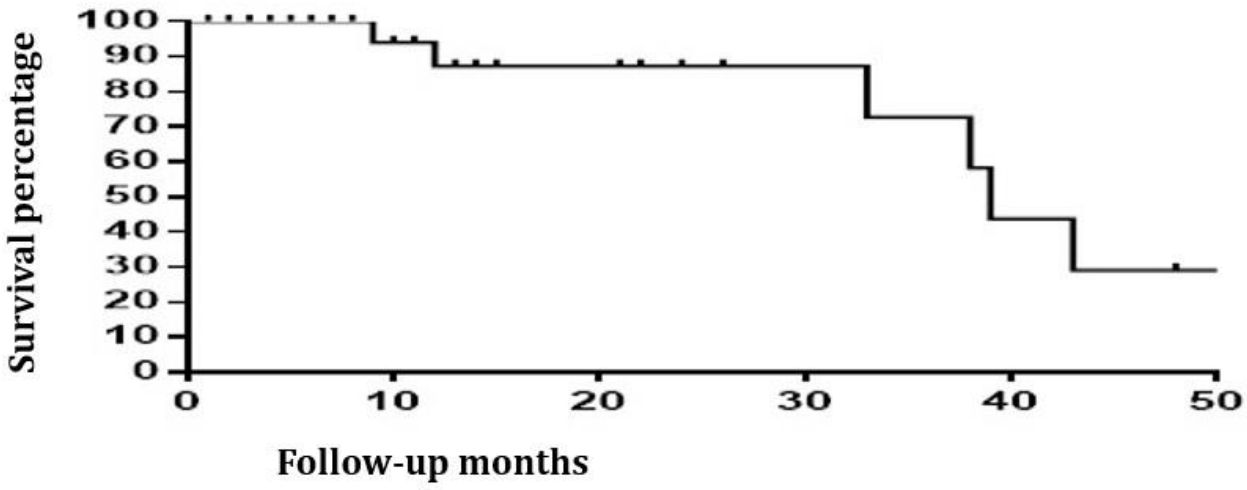

Figure 1. Evaluation of survival during the follow-up through Kaplan Meier method. São Paulo-SP, 2017.

It was evaluated the proportion of hospitalization during follow-up for both groups. It has been seen that 57% of group alive and 100% of the group death were hospitalized.

The two main causes of hospitalization for the group alive were falling and respiratory failure; and the causes of death of the second group were pneumonia and respiratory failure as shown in Figure 2.

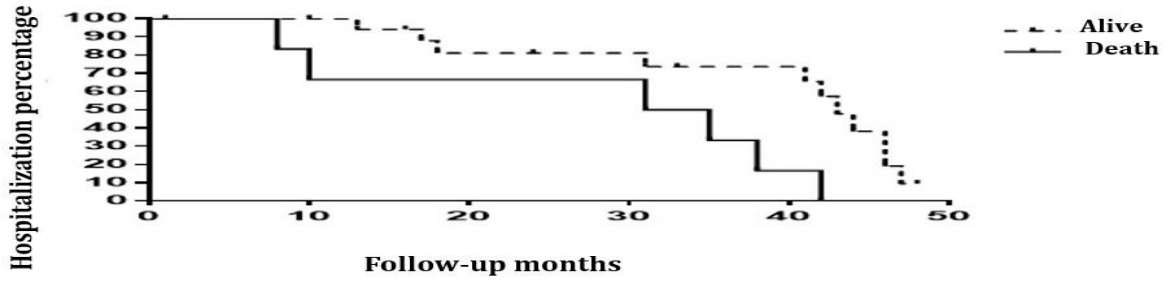

Figure 2. Evaluation of hospitalization in a period of 48 months. São Paulo-SP, 2017.

When evaluated the number of falls during the 48 months of follow-up, no difference was verified. The index falls of the group alive participant during the time of follow-up was 0.66 and to the group death was 0.44 as in Figure 3.

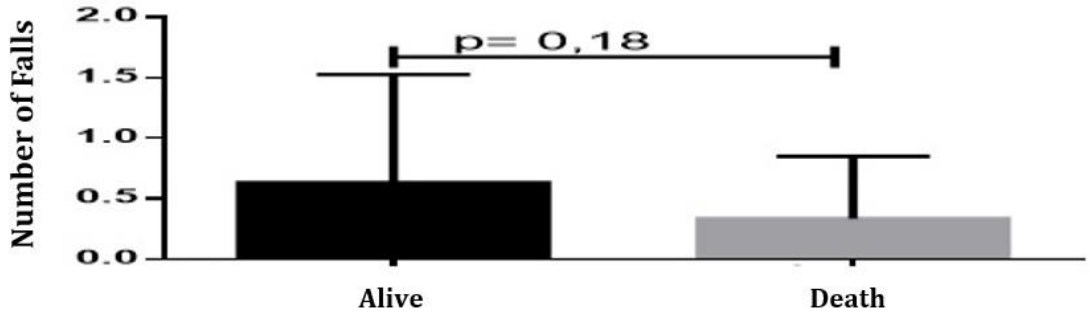

Figure 3. Evaluation of the number of falls for both groups during follow-up of 48 months. São Paulo-SP, 2017.

When evaluated the number of hospitalizations during the 48 months of monitoring, there was no significant difference. The rate of hospitalizations per participant of the group alive during the 48 months was 2.2 and the group deathwas 2.5 as in Figure 4.

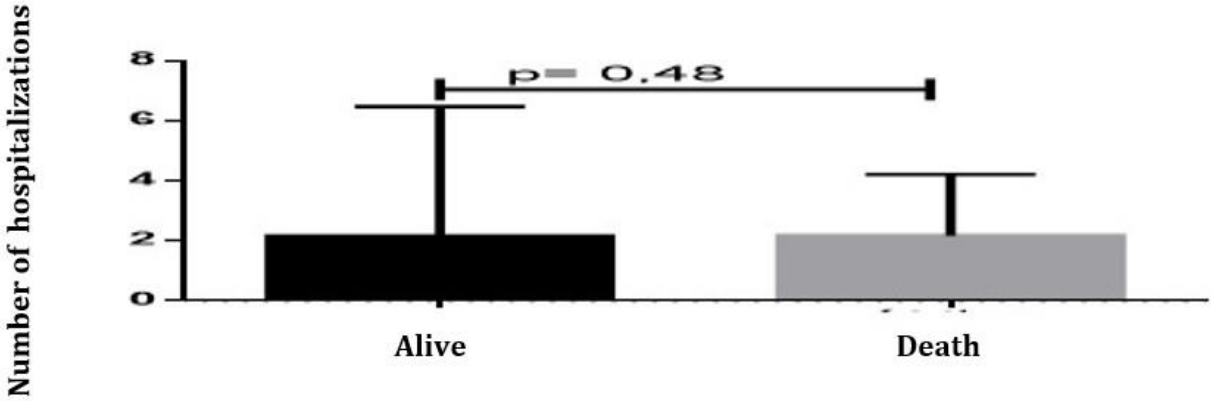

Figure 4. Evaluation of the number of hospitalizations for both groups during follow-up of 48 months. São Paulo-SP, 2017.

DISCUSSION

Among the main results, it was seen that the age of the group deathwas significantly higher, as well as the proportion of dependents and hospitalizations. The group alive, had higher proportion of independent individualswho performed all the ADL.

Research with medical records has been considered an appropriate and safe data collection method for longitudinal studies. Similar studies[7,13] used the same method of research.

The sample of this study was fully composed of female individuals, phenomenon explained by the feminization of ageing, with a growing and widespread tendency of women's longevity in the world, and in countries in developing countries like Brazil.

Feminization over 80 years old is a consequence of the greater exposure of men to external factors (alcohol, smoking, accidents and homicides). Other crucial factor is decreasing mortality of perinatal maternal and cancer of the uterus among women, in addition to the known hormonal factors of cardiovascular protection that extends up to a few years after menopause[14].

It observed in this study that the average age of the group death was significantly higher (88,1 ± 5.7) than the life expectancy among elderly people in Brazil, of 72 years old in 2010, and should reach 77.4 years in 2030[15]. As well as the proportion of dependent individuals 33.3% against 10.5%, besides hospitalizations were longer for group death. Hospitalization events are associated with adependence increase of the patients[16].

The alivegroup had a higher proportion of independent individuals, who performed all the ADL. The elderly of the alive groupperformed physical activities regularly, three times a week. Astudy[17] that evaluated the effectiveness of a program of physical activity for elderlies, using parameters related to quality of life, functional capacity and balance, demonstrated that there was significant improvement in functional capacity after the 16 sessions of 50 minutes each, twice a week.

Another study[18] showed that physical activity can be considered a low-cost alternative to minimizing the deleterious effects of the aging process experienced by individuals, and that the increase in life expectancy brings with it the need to add quality to the additional years, and maintain a good functional capacity and memory are fundamental parts of this process.

The average age of the participants of this study when the follow-up started was 84,3 (DP ± 6.3) years. It saw that 80% of the participants were alive at the end of the follow-up. Acting on this complex profile of needs,requires a health system with continuous and multidisciplinary assistance organization, renewing the work process, ensuring the actions and health services that promote health and well-being of the elderly population in a permanent way[5].

A study analyzing the effects of a year of physiotherapeutic intervention, showed that there was an improvement in the physical function of the elderly. The multidisciplinary intervention in the elderly care, withan integral and quality care is important[19].

Another research had the hospitalization prevalence of 23.9, a percentage less than this study, where it was seen that 57% of the group alive and 100% of the group death were hospitalized.

The two main causes of hospitalization for the group alivewere falls and respiratory failure; And for the group death were pneumonia and respiratory failure, however the average age of them was 75,1 ± 13,8 years. Another investigação[21] verified the average age of 79 years (sd±6.3) and, that 37.4% participants reported to have been hospitalized, this difference in the proportion of hospitalizations in relation to this study is possible given to the differentage of the population studied.

In this study, there was no difference in the index of falls between the groups alive and death during the 48-month follow-up. The fall rate per participant of the group alive was 0.66 and the group death was 0.44. Another study[22] found that 28.3% suffered falls in the last 12 months. However, if the analysis of this study is transferred to a 12-month follow-up, the index would be 5.5% for the group alive and 3.6% for the groupdeath.

When evaluated the number of hospitalizations during the 48 months of follow-up, we verified that there was no significant difference. The index of hospitalizations per participant of the group alive during the 48 months was 2.2 and for the group death was 2.5. Like another researches[5], we observed that despite the population growth, especially of the elderly population, there was a reduction of hospitalizations. These data point to a possible explanation: the reduction of the hospitalizations may be related to the improvement of the elderlies'quality of life and, consequently, to the reduction of the hospitalization needs by that population.

CONCLUSION

On the results, it can conclude that the factors that predispose hospitalization and mortality in institutionalized elderly peopleare advanced age, performing activities of daily living and locomotion.

The practice of exercises is important to minimize the deleterious effects that aging brings, besides multidiscipline care to elderly people, to improve health conditions and quality of life.

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CONTRIBUTIONS
Thais Regina Machado de Freitas e **Sandra Moreira Dutra** participated in the data collection and research development.
Claudia Kümpel was responsible for the co-supervision of research and editorial review.
Elias Ferreira Pôrto held research orientation, data analysis and critical review.

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