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Epidemiological clinical profile of the elderly attended at a public hospital in the south of the city of São Paulo between 2010 and 2016

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Perfil clínico epidemiológico de las personas mayores tratadas en un hospital público en la parte sur de la ciudad de Sao Paulo entre 2010 y 2016

Perfil clínico epidemiológico de idosos atendidos em um hospital público da zona sul da cidade de São Paulo entre 2010 e 2016

ABSTRACT

OBJECTIVE: To know the epidemiological and demographic profile of the elderly who attend a general hospital, on the outskirts of the city of São Paulo, Brazil. METHOD: This is a descriptive and analytical cross-sectional observational study, conducted in a Public Hospital in the Southern Region of São Paulo- SP, from January 2010 to December 2016, with people over 60 years of age. A nonparametric kolmogorov - Smirnov test was used. RESULTS: Demographic data show that the majority of the elderly who attend the hospital presented acute diseases, with cardiocerebrovascular diseases (30.25%), respiratory diseases (13.39%), infectious diseases (12.42%), gastrointestinal tract diseases (9.68%), trauma (8%), urogenital diseases (7.2%), cancer (3.25%). In the study of prevalence of acute diseases stratified by decades of life, an increase in prevalence was found: in the elderly over 80 years: pulmonary diseases, septicemia, diseases of the genitourinary system. CONCLUSIONS: Cardiovascular diseases are predominant, followed by respiratory diseases in a public hospital on the outskirts of the city of São Paulo. The knowledge of this profile has a great potential for hospital administrators to organize their services to serve this group of patients in a more humane and efficient way and a subsidy for primary health care actions.
DESCRIPTORS: Elderly; General Hospital; Morbidities; Acute injuries.

RESUMEN

OBJETIVO: Conocer el perfil epidemiológico y demográfico de los ancianos que asisten a un hospital general, en las afueras de la ciudad de São Paulo, Brasil. METODO: Se trata de un estudio observacional transversal descriptivo y analítico realizado en un Hospital Público de la Región Sur de São Paulo- SP, de enero de 2010 a diciembre de 2016, con personas mayores de 60 años. Se utilizó una prueba kolmogorov - Smirnov no paramétrica. RESULTADOS: Los datos demográficos muestran que la mayoría de los ancianos que asisten al hospital presentaron enfermedades agudas, con enfermedades cardiocerebrovasculares (30,25%), enfermedades respiratorias (13,39%), enfermedades infecciosas (12,42%), enfermedades del tracto gastrointestinal (9,68%), trauma (8%), enfermedades del sistema urogenital (7,2%), cáncer (3,25%). En el estudio de la prevalência de enfermedades agudas estratificadas por décadas de vida, se encontró un aumento de la prevalencia: en los ancianos mayores de 80 años: enfermedades pulmonares, septicemia, enfermedades del sistema genitourinario. Conclusiones: Las enfermedades cardiovasculares son predominantes, seguidas de las enfermedades respiratorias en un hospital público en las afueras de la ciudad de Sao Paulo. El conocimiento de este perfil tiene un gran potencial para que los administradores de hospitales organicen sus servicios para atender a este grupo de pacientes de una manera más humana y eficiente y un subsidio para las acciones de atención primaria de salud.
DESCRIPTORES: Ancianos; Morbilidades; Enfermedades y lesiones no transmisibles.

RESUMO

OBJETIVO: Conhecer o perfil epidemiológico e demográfico do idoso que frequenta   hospital geral, na periferia da cidade de São Paulo, Brasil. MÉTODO: Trata-se de um estudo observacional transversal descritivo e analítico, realizado em um Hospital Público da Região Sul de São Paulo- SP, no período de janeiro de 2010 a dezembro de 2016, com pessoas com mais de 60 anos. Utilizou-se teste não paramétrico de Kolmogorov – Smirnov. RESULTADOS: Os dados demográficos denotam que a maioria dos idosos que frequentam o hospital apresentaram agravos agudos, sendo prevalentes doenças cardiocerebrovasculares (30,25%), doenças do aparelho respiratório (13,39%), doenças infectocontagiosas (12,42%), doenças do trato gastrointestinal (9,68%), trauma (8%), doenças do aparelho urogenital (7,2%), câncer (3,25%). No estudo de prevalência de agravos agudos estratificado

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por décadas de vida encontrou-se: nos idosos acima de 80 anos um aumento da prevalência: doenças pulmonares, septicemias, doenças do aparelho geniturinário. Conclusões: As doenças cardio- vasculares são predominantes, seguidas das doenças do aparelho respiratório em um hospital público de periferia da cidade de São Paulo. O conhecimento deste perfil tem um potencial muito grande para administradores hospitalares organizarem seus serviços para atender de uma forma mais humanizada e eficiente este grupo de pacientes e seve de subsídio para as ações de atenção primária de saúde.

DESCRITORES: Idosos; Morbidades; Doenças e agravos não transmissíveis.

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INTRODUCTION

In Brazil, there was an increase of the population of 2,3% in the 40's, changing to 3% in the following decade. Mortality decreased by 25%, with the fertility rate remaining at 6,2 children, [1] favoring the younger sections of the population. In a subsequent period, the reduction in mortality became more accentuated and the fertility rate fell, today to 1,8 children per woman. All of this culminated, in the beginning of the 21st century, with the increase in the number of elderly people. According to IBGE data on aging in Brazil: in 2011 the elderly population was 23.5 million inhabitants and this number doubled in relation to 1992. [2]

Omram [3] in 1971 he proposed the term: epidemiological transition. According to the author, this phase characterizes the reduction in the birth rate of mortality, the aging of the population and the change from a major cause of death from infectious diseases to chronic degenerative diseases. In this decade, it was believed that life expectancy would reach 70 years and this indicator would slowly rise over time.

In 1986 Olshanky [4] describes a fourth phase within the epidemiological transition: 1- the phase of delayed degenerative diseases where there is a rapid decline in mortality rates in advanced ages and occurring at similar rates for men and women; 2- the age pattern of mortality due to causes remains the same as in the third stage, but the age distribution of deaths from degenerative diseases is deviated to more advanced ages; 3- relatively rapid increases in survival and the big killers are the diseases of the third stage, the chronic degenerative ones.

In a 2007 article on the epidemiological transition in Brazil, Lebrão [5] describes that 3 types of transition can be observed in the world: 1- Early initiation (Western European countries); 2- late initiation (Latin America and the Caribbean); 3- countries that have not started the epidemiological transition (Africa). Professionals working in a public hospital begin to notice a change in their daily lives. Today people over 60 are frequent in these services. [6,7,8]

The present research was carried out in a secondary and teaching hospital in the health system of the State of São Paulo, which operates on the outskirts of the city

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of São Paulo. In the last seven years, the general demand for hospital care has only increased: in 2010 there were 15680 hospitalizations, in 2016 there were 18249 hospitalizations when observing the range of people over 60 years of age in 2010 in absolute numbers there were 3618 hospitalizations and in 2016 there were 4279 admissions. Faced with this challenge, the researchers set out to check for the presence of the new epidemiological profile described by Omram[3] and Olshansky [4] and whether the pattern of late initiation described by Lebrão, within this age group of people over 60 years of age, through the epidemiological clinical characteristics of people who live on the outskirts of the southern region of the city of São Paulo.

METHODS

This is an observational study of a historical series. Therefore, adult hospitalizations between 2010 and 2016 were evaluated. The data were extracted from the electronic medical record in the form of the MV® system (they are information technology companies that develop management programs that allow the plan-

ning of executive resources in a hospital, for example). A report on the attendance of adults over 60 years of age from January 1st to December 31st of the following years was requested from the medical informatics of the hospital: 2010 to 2016.

The sample size reached refers to 18.001 people over 60 years of age, so the characteristics of the elderly who attend a Brazilian public hospital located on the outskirts of the city of São Paulo were described with a good power of observation. Data were collected: number of care, patient identification number, patient's name, age, sex, marital status, date of hospitalization, date of departure from hospital, neighborhood of residence, main reason for care classified by the attending physician, location discharge from the patient. The authors classified the reason for hospitalization by the international code of diseases ICD 10 in the form of chapters (A and B contagious infectious diseases, C neoplasms, D hematological diseases, E metabolic endocrine diseases, F psychiatric diseases, G neurological diseases, H ear diseases , I diseases of the cardio cerebrovascular system, J diseases of the respiratory system, K diseases of the gastrointestinal tract, N

diseases of the urogenital apparatus, R unspecific injuries, S and T traumas and external injuries). The Grajaú hospital serves the population that lives in the subprefecture of Capela do Socorro, a region in the extreme south of São Paulo. Em 2010, the districts of Grajaú, Cidade Dutra and Socorro had 594.930 inhabitants. There was a general mortality rate in the district of Grajaú of 4,45 per thousand inhabitants, Cidade Dutra of 5,27 per thousand inhabitants and Socorro 8,74 per thousand inhabitants (municipality of São Paulo with a rate of 6,23). In the three districts the major causes of death are diseases of the circulatory system, followed by diseases of the respiratory system and tumors, trauma comes in fourth place. As for the aging rate (proportion of people aged 60 and over per 100 individuals), there is: Grajaú 31,46; Dutra City 55,62; Socorro 128,95, the municipality of São Paulo has an index of 66.89. To compare qualitative variables, Pearson's chi-square test. To assess qualitative variables in age stratification, a nonparametric Kolomogorov - Smirnov test for adherence was used. For quantitative variable length of stay, Kruskall Wallis analysis of variance was used, the median was presented for this variable. A value of P <0,05 was considered statistically significant for this analysis. The project was submitted to the research ethics committees of the University and the Hospital, obtaining CAEE: 65935517.0.0000.008.

RESULTS

The main sociodemographic characteristics of the 27.729 hospitalizations of people aged over 60 between the years 2010 to 2016 at the Hospital are described in table 1. The proportion of people who reach the age of 60 and do not live with partners is noteworthy: 66,41% . Regarding the slight gender, predominance of the female sex: 50,11%. As for the distribution by the seasons, there is a homogeneous distribution, the climatic phenomena have little effect on the need for hospital admissions.

Regarding the general data, it can be said that hospital discharge was the majo-

Table 1– Characteristics of elderly patients in Grajaú, length of hospital stay and hospital mortality in this group of patients. São Paulo-SP, 2021.

VARIABLE	N	%
Gender		
Female	9020	50,11%
Male	8981	49,89%
Total	18001	100%
Marital Status		
With partner	3890	21,60%
No partner	12361	68,66%
Indeterminate	1750	9,74%
Total	18001	100%
Place of admission to the Hospital		
Emergency	12956	46,72%
Surgery	3170	11,43%
Clinic	8558	30,86%
Gynecology	475	1,71%
Orthopedic	1679	6,05%

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ICU	576	2,10%
Others	315	1,13%
Total	27729	100%
Seasons		
Summer	6670	24,05%
Spring	6686	24,11%
Autumn	7177	25,89%
Winter	7196	25,95%
Total	27729	100%
Hospital outcome		
Discharge	20811	75,06%
Death > 24 hours	3879	13,98%
Transfer	1977	7,13%
Death <24 hours	1062	3,83%
Total	27729	100%
Neighboorhoods that make up the sub-prefecture of Capela do Socorro		
Yes	13888	77,15%
No	4113	22,85%
Total	18001	100%

Source: Author, 2021.

Table 2 – Classification as to the acute injuries of patients over 60 years of age from 2010 to 2016, made by chapters of the ICD 10. São Paulo-SP, 2021.

CID CHAPTER 10	N	%
I – Cardio cerebrovascular	8389	30,25%
J-Respiratory system diseases	3715	13,39%
A+B-Septicemias and contagious infectious diseases	3445	12,42%
K-Gastrointestinal tract disease	2685	9,68%
S+T- Fractures and trauma	2220	8,00%
N- Diseases of the urogenital system	1999	7,20%
R- Non-specific causes	1413	5,09%
C- Neoplasms	902	3,25%
G-Diseases of the neurological system	892	3,21%
E- Endocrine-metabolic diseases	736	2,65%
L+M Diseases of the locomotor apparatus and connective tissue	430	1,55%
D- Hematological diseases	189	0,68%
F- Psychiatric illnesses	138	0,49%
Z- Lifestyle-related diseases	40	0,14%
H-Ear diseases	25	0,09%
Unclassified	511	1,84%
Total	27729	100%

Source: Author, 2021.

rity of the results achieved by the public hospital (75,06%). The total number of deaths was 4941 (17,81%) of the population studied.

Table 2 shows the data regarding the injuries in relation to patients over 60 years of age.

Pearson's chi square analysis for hospital mortality outcome (table 3). Significant differences were found in the variables: marital status, place of hospital stay, length of hospital stay. For acute conditions, differences were found in the following variables: cerebrovascular cardio, diseases of the gastrointestinal tract, diseases of the genitourinary tract, trauma and neoplasms. No significant differences were found in mortality by sex, and diseases of the pulmonary tract.

In the analysis stratified by age (table 4) in the study of demographic variables and hospital performance, we found:

1- The proportion of women exceeds that of men in the third stratum (over 80 years of age).

2- The proportion of elderly people without a partner remains constant in the 4 strata, in the elderly with partners there is a natural fall, the proportion of widowers increases.

3- The proportion of elderly people who have complete hospitalizations in the emergency sector is already increasing in the second stratum.

4- The proportion of hospital discharge follows the interpretation indicated in the previous item, with a significant difference in the non-parametric test.

As for acute conditions and stratification by decades of life (table 5), we can observe a significant difference in all conditions studied. However, two different distributions were presented: In a first group, we had an increase in the proportion due to the age of pulmonary diseases, contagious infections, and the genitourinary tract. In a second group we had a decrease in the proportion for decades of life: neoplasms, trauma, cardio cerebrovascular diseases and diseases of the gastrointestinal tract.

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DISCUSSION

The results in the distribution of prevalence of acute conditions by ICD 10 for the elderly are similar to the results found in other studies. [6,7,8] All studies found a proportion of around 30% of patients with cerebrovascular cardio problems in general hospitals. The diseases of Chapter I end up being those with the highest mortality in the world [11] and Brazil. [12] Chapter I diseases comprise acute myocardial infarction, stroke and other heart diseases. The prevalence of this group of chronic-degenerative diseases has become very important among the elderly in the beginning of the 21st century, it is a major cause of hospitalization.

The elderly patient in Grajaú has a slight predominance of females, mortality in the range of 18% and length of stay with a median of 5 days. A cross-sectional study [13] described the results of the Geriatric ward at the Hospital das Clínicas. There was a great predominance of women (63%), a mortality rate of 17%, with an average length of stay of 16 days. The data are not comparable because despite the study of the same group of patients, the characteristics of the services are different. Grajaú is a community hospital located in a peripheral region of the city of São Paulo. The geriatric ward at the Hospital das Clínicas is located within a tertiary hospital of greater complexity in the hospital care offered to the elderly. Even with these large epidemiological differences, it is interesting to note similar mortality.

In the analytical part of the data from Grajaú hospital, the factors that change hospital mortality are evident: the fact that the patient is single, stays in the hospital for a long time, begins and ends hospitalization in the emergency department. There is a higher mortality than the number of discharges in the elderly who are admitted to the hospital due to illnesses in cancer and contagious infectious diseases, which in this age group constitute many patients classified with septicemia. Grajaú has a mortality lower than the number of discharges in cardio cerebrovascular diseases, trauma, diseases of the gastrointestinal tract and genitourinary tract. In a previous study [13] found as predictors of mortality in the elderly population studied: delirium, neoplastic disease, albumin level <3,3 mg/dl, serum

Table 3- Association of independent socio-demographic clinical variables with in-hospital mortality in the elderly in the Grajaú hospital from 2010 to 2016. São Paulo-SP, 2021.

VARIABLE	MORTALITY (%)	DISCHARGE RATIO(%)	X^2	P
Gender				
Female	16,25	83,75		
Male	16,54	83,45	0,36	0,56
Marital Status				
With partner	11,96	88,04		
Without partner	21,55	78,45	125	<0,0001
Season				
Spring	15,08	84,92		
Summer	16,19	83,80		
Autumn	17,04	82,95		
Winter	17,17	82,83	11,8	0,008
Inpatient sector				
Emergencies	19,66	80,34		
Other sectors	10,54	89,45	189	<0,0001
Length of hospital stay				
>7 days	23,50	76,50		
<7 days	12,60	87,40	462	<0,0001
Capela do Socorro				
Yes	16,71	83,29		
No	15,37	84,62	5,47	0,019
Cardio cerebrovascular	14,70	85,30		
Other acute injuries	17,09	82,91	19,96	<0,0001
Contagious infectious diseases	61,81	38,19		
Other acute injuries	9,72	90,28	5182	<0,0001
Lung diseases	15,37	84,63		
Other acute injuries	16,57	83,42	3,01	0,08
Diseases of the gastrointestinal tract	7,73	92,27		
Other acute injuries	17,44	82,56	154,78	<0,0001
Trauma	3,54	94,46		
Other acute injuries	17,44	82,56	227,90	<0,0001
Cancer	23,81	76,19		
Other acute injuries	15,96	84,03	31,34	<0,0001
Genitourinary tract	5,17	94,83		
Other acute injuries	18,41	81,58	424,86	<0,0001

Source: Author, 2021.

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Table 4- Proportion of prevalence stratified by decades of life in the elderly treated at Hospital do Grajaú from 2010 to 2016. São Paulo-SP, 2021.

VARIABLE	PROPORTION (%) 60-69 ANOS	PROPORTION (%) 70-79 ANOS	PROPORTION (%) 80-89 ANOS	PROPORTION (%) >90 ANOS	* X²	P
Gender						
Female	31,57	30,15	25,08	13,17		
Male	39,64	34,26	19,39	6,70	33,60	<0,01
Marital Status						
With partner	39,85	36,03	18,91	5,19		
Without partner	39,02	35,24	12,84	12,88	107	<0,01
Season						
Spring						
Summer	35,47	32,27	22,21	10,02		
Autumn						
Winter	35,71	32,13	22,27	9,87	0,07	NS**
Inpatient sector						
Emergencies	32,48	31,95	23,94	11,61		
Other sectors	38,39	32,43	20,71	8,45	152	<0,01
Hospital Outcome						
Discharge	37,90	32,57	21,12	8,40		
Death	23,62	30,93	28,24	17,19	402	<0,01
Capela do Socorro Subdistrict						
Yes	36,67	32,94	19,89	10,53		
No	32,25	29,93	29,50	8,28	112	<0,01
Median length of stay in days	4	4	4	4	H*** 0,27	0,96

Source: Author, 2021. * Kolmogorov- Smirnov test two samples ** NS: Not significant *** Analysis of variance: Kruskal– Wallis

Table 5- Proportion of prevalence stratified by decades of life in the elderly treated at Hospital do Grajaú from 2010 to 2016. São Paulo-SP, 2021.

VARIABLE	PROPORTION (%) 60-69 YEARS	PROPORTION (%) 70-79 YEARS	PROPORTION (%) 80-89 YEARS	PROPORTION (%) >90 YEARS	* X²	P
Cardio cerebovascular	36,46	33,98	21,71	7,84		
Other acute injuries	35,22	32,20	22,24	9,94	33,56	<0,01
Contagious infectious diseases	25,74	30,58	27,80	15,85		
Other acute injuries	37,00	32,43	21,14	9,10	207	<0,01
Lung diseases	27,29	31,25	26,40	15,04		
Other acute injuries	36,88	32,35	21,60	9,15	147	<0,01
Diseases of the gastrointestinal tract	48,91	31,63	15,16	4,28		
Other acute injuries	34,17	32,26	23,00	10,55	210	<0,01
Trauma	44,46	30,15	16,74	8,64		
Other acute injuries	34,82	32,38	22,72	10,06	75,82	<0,01
Cancer	39,62	32,67	21,74	5,96		

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Other acute injuries	35,46	32,91	20,65	10,08	8,76	<0,05
Genitourinary tract	29,37	33,46	24,62	12,53		
Other acute injuries	36,08	32,20	22,24	9,94	33,45	<0,01
Heart diseases	37,67	33,99	21,33	6,80		
Cerebrovascular diseases	9,68	46,77	32,00	11,53	460	<0,01

Source: Author, 2021. * Kolmogorv- Smirnov test

creatinine> 1,3 mg/dl, history of heart failure, immobility and advanced age.

American cohort study [14] describes the positive impact of marriage on cancer patients: married people discover the disease earlier, are able to undergo treatment until the end (chemotherapy and surgery) more frequently when compared to the group of singles. According to the IBGE, [15] the total number of married people in the Brazilian population exceeds the single population in people over 15 years of age. According to the 2009 household sample survey, in a universe of 145,3 million inhabitants, 45,8% or 66,6 million were married, and 42,8% of the total, or 62,2 million people, were single. The survey found that widowers have a 5,9% share of the total, followed by divorcees with a 5,4% share. The study in Grajaú signals the importance of the variable in the population studied, it must be taken into account in the elderly care process in the Capela do Socorro region. Often the elderly who are seen at the hospital due to the disease process leave the hospital with reduced functional capacity, without a family to care for at home, perhaps this observation has an important impact on in-hospital mortality, single people stay longer in the hospital and elderly people with more than 7 days of hospitalization have a higher mortality.

Regarding the stratification by decades of life of the elderly in Grajaú, it can be observed that men and women have a different distribution, this is the second early peak in male mortality. The first peak of early death comes from deaths due to trauma and murder in young adults.[16] Some studies show that men and women have a different experience when they reach old age. [17,18] Men take less care and seek medical services in more advanced states of disease, women take more care, and begin to have acute lethal injuries at older ages. The data from the present study show that the male prevalence is higher in the first two strata: 60 to 79 years old, whereas the female predominance occurs in the stratum from 80 years old.

The lack of planning for this population shows a sad phenomenon that in no way can we get used to and find common. The hospital has a greater demand than its supply of beds. It happens that many hospitalizations of the elderly become improvised in the emergency department of the general hospital in Grajaú. The stratified analysis makes it clear that as of the second stratum (over 70 years old) there is already a predominance of hospitalizations in the emergency department of the hospital. In the public system, the elderly are never seen as a priority. The government of the state of São Paulo has the project: an elderly-friendly hospital. [19] It is a very interesting initiative in four stages of structuring for the hospital organization of care for people over 60 years old.

Regarding the study of the analysis of acute conditions, it is notorious to observe the panel of what happens to the elderly in the Capela do Socorro region. There is a tendency towards an increase in chronic non-communicable degenerative disease. There is a first wave of hospitalizations of elderly people with heart, brain, gastrointestinal tract diseases, trauma and cancer. Some will stay in these acute conditions, some will respond to therapy and will continue to monitor their chronic conditions and geriatric syndromes. In the second wave for the very long-lived elderly, one can observe the increase in the prevalence of septicemia, lung diseases and diseases of the genitourinary tract (infections and renal insufficiency). A cohort study[20] patients with coronary artery disease were followed up. The authors captured patients in 2002 and followed them for 10 years. In this period of time it was found that coronary patients are more likely to die from non-cardiovascular causes (21,3% versus 16,6% p= 0,002). The four major non-cardiovascular reasons for death are highlighted: cancer, pneumonia, septicemia and kidney disease.

It should be noted that the late transition as described by Lebrão [5] is already present in this hospital on the outskirts of São Paulo. If we see that the number of hospital admissions grows in many elderly people (people over 80 years old) for respiratory and renal reasons (kidney failure and infection in the genitourinary tract). We have observed the 10 main causes of death in the world as lung cancer, chronic obstructive pulmonary disease and bronchopneumonia occupy the fourth, fifth and sixth largest causes of death in high-income countries, respectively. [11] Kidney disease is the ninth leading cause of death. [11] In the Brazilian epidemiological transition we have the moment described by Omram and Olshansky with hints of social underdevelopment due to homicide and traffic accidents occupy the seventh and tenth leading causes of death in Brazil. [12]

Study limitations: the study has an information bias, as these are very heterogeneous medical situations classified by the hospital's clinical staff. There is little decrease in the variation because it is considered the main reason for hospital discharge, where the patient underwent several clinical evaluations and tests of complementary propaedeutics. Survival bias is considered, where the most serious diseases end up killing patients more qui-

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ckly and its prevalence is underestimated. In the elderly, functional capacity is important. The hospital has instituted the "palliative performance scale"(PPS)[21] since November 2015, but only a selected sample is made of this assessment of functional capacity, a suggestion is the analysis of functional capacity for every patient over 60 years old who is admitted to the hospital.

CONCLUSION

The data allow reflection on the care of people over 60 years of age, the need to draw up advanced life guidelines emerges, and the need for the health professional to respect the autonomy of their patient. Today with the advancement in the area of information technology, it is observed that much information about hospitalized patients is available in the information technology departments of hospitals. Computer science also makes it possible to integrate this network, a situation that we do not see today. The intuitive health planning that is so common in Brazilian territory should be abandoned. The present study shows that there is a need to study similar results in other hospitals in the state of São Paulo and Brazil. Assuming the heterogeneity of the elderly public, it is believed that it will always be possible to find differences between the elderly in different Brazilian geographic locations. The authors believe that actions for this audience should be implemented according to the characteristics of the population found in similar observational studies. Elderly people like pregnant women and children are vulnerable populations. The difference is that, at the moment, the public health system focuses attention on pregnant women and children as a priority, solutions for the elderly are always procrastinated for better economic periods that never arrive in the national territory. ◾

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