OLDER ADULTS HOSPITALIZED IN A TEACHING HOSPITAL: CLINICAL CHARACTERISTICS AND OUTCOMES

IDOSOS INTERNADOS EM UM HOSPITAL ESCOLA: CARACTERÍSTICAS CLÍNICAS E DESFECHOS

ADULTOS MAYORES INTERNADOS EN UN HOSPITAL ESCUELA: CARACTERÍSTICAS CLÍNICAS Y DESENLACES

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ABSTRACT

Objective: to investigate the causes of older adult hospitalizations, demographic and clinical profiles, and patient outcome. **Method:** quantitative cross-sectional study conducted with 14,892 electronic medical records during 12 months. We carried out a descriptive analysis of the variables of the sample characterization, and an associative test using chi-square statistics. **Results:** most patients assessed were male, had primary education, lived with a partner, were white and Catholics, and had cardiovascular diseases, followed by neoplasms and gastrointestinal diseases in both sexes. The average age of the patients was 72.1 years, and the average length of hospital stay was 5.9 days. There was a significant association between diagnosed diseases, sex ($p < 0.001$), and ethnicity ($p = 0.023$) of the patients. The most common outcome was hospital discharge. **Conclusion:** chronic diseases were the main causes of older adult hospitalizations and led to increased length of hospital stay. The assessment of these factors provides subsidies for identifying problems and performing best nursing interventions. **Descriptors:** Older Adult; Hospitalization; Clinical Evolution.

RESUMO

Objetivo: investigar as causas de internação dos idosos hospitalizados, o perfil demográfico, o perfil clínico e o desfecho. **Método:** estudo quantitativo, transversal de análise de 14.892 prontuários eletrônicos, no período de 12 meses. Foi realizada uma análise descritiva das variáveis de caracterização amostral e aplicação do teste associativo pela estatística qui-quadrado. **Resultados:** a maioria dos pacientes avaliados era do sexo masculino, com grau de instrução fundamental, com companheiro, do lar, brancos, católicos e com doenças cardiovasculares, seguidas de neoplasias e doenças gastrointestinais em ambos os sexos. A idade dos pacientes apresentou média de 72,1 anos e a média da permanência hospitalar foi de 5,9 dias. Houve associação significativa entre as doenças diagnosticadas, o sexo ($p < 0,001$) e a etnia ($p = 0,023$) dos pacientes. O desfecho mais comum foi a alta dos pacientes. **Conclusão:** as doenças crônicas foram as principais causas de hospitalização dos idosos, acarretando mais tempo na hospitalização. A investigação destes fatores fornece subsídios para identificação dos problemas e realizar melhores ações de enfermagem. **Descritores:** Idoso; Hospitalização; Evolução Clínica.

RESUMEN

Objetivo: investigar las causas de hospitalización de adultos mayores, perfil demográfico, perfil clínico y desenlaces. **Método:** estudio cuantitativo transversal con análisis de 14.892 registros médicos electrónicos de un período de 12 meses. Se realizó un análisis descriptivo de las variables de caracterización de la muestra y se aplicó la prueba chi-cuadrado. **Resultados:** la mayoría de los pacientes evaluados eran hombres, con educación primaria, vivían en pareja, eran blancos, católicos y tenían enfermedades cardiovasculares, seguidas de neoplasias y enfermedades gastrointestinales en ambos sexos. El promedio de edad de los pacientes fue de 72,1 años y de la estancia hospitalaria fue de 5,9 días. Hubo una asociación significativa entre enfermedades diagnosticadas, sexo ($p < 0.001$) y etnia ($p = 0.023$) de los pacientes. El resultado más común fue el alta hospitalaria. **Conclusión:** las enfermedades crónicas fueron las principales causas de hospitalización de los adultos mayores, llevando a un tiempo más prolongado de internación. La investigación de estos factores proporciona subsidios para identificación de problemas y realizar mejores intervenciones de enfermería. **Descritores:** Adulto Mayor; Hospitalización; Evolución Clínica.

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INTRODUCTION

We experience a permanent aging process from birth to death. Senility is the last stage of the natural evolution of life. It is characterized by a succession of biological, economic, and political and social parameters changes that are part of the everyday life of these individuals at this stage.¹

The older adult population has been exhibiting a greater growth rate than the total population. Due to its characteristics, this population has implications for planning the social and economic development of a country, since the main objective is to qualitatively improve the health of this age group of the population in order to achieve better quality of life.² One of the main impacts of population aging is the change in the morbimortality profile, which is characterized by significant increase in the occurrence of chronic degenerative diseases.³

Data on the health situation and the need for medical attention are paramount for planning prevention strategies, healthcare, and health promotion. Brazil has a high rate of hospitalizations and rehospitalizations among individuals aged 60 years or more. Consequently, healthcare cost in this age group is also greater than in the other age groups.⁴

Due to the decreased ability to respond to stress, and the greater vulnerability of this age group, the diseases that trigger the hospitalizations of older adults require permanent and intensive care. In these cases, family support and follow-up are of great importance.⁵ On the other hand, hospitalizations cause suffering to older adults, because, when they are away from their social context, they lose a part of their autonomy, particularly with respect to their habits, behaviors, and routines, which are changed by the hospital routine.⁶

The health profile of older adults should be assessed by health professionals and their managers. The goal of this procedure is to develop strategies for health promotion and prevention of diseases and their harms. In this way, there will be improvement in the quality of life of this population and a greater access to healthcare.⁷

Based on these aspects, we carried out an exploratory research to investigate the causes of hospitalizations that most affect hospitalized older adults. We assessed the demographic and clinical profiles of these older adults and their outcomes after hospitalization (hospital discharge or death).

We believe that these causes can be prevented and treated if diagnosed early.

METHOD

This is a quantitative, documentary, retrospective, cross-sectional study. We assessed the electronic medical records of older adult patients cared for in the in-patient units of a teaching hospital, located in the State of São Paulo, Brazil, from January 2014 the December 2014. The purpose was to determine the causes of hospitalizations, the demographic and clinical profiles of these older adults, and their outcomes after hospitalization. The aforementioned hospital functions as a reference center for the local population, nearby towns, and even other states. It has state-of-the-art technology to treat its patients.

The sample consisted of 14,892 medical records of older adult patients aged over 60 years, cared for during 12 months in the in-patient units of the hospital. Older adult patients who had been hospitalized during the entire length of stay in the emergency or intensive care units were excluded from the study.

The parameters studied in the medical records were the demographic data, such as age, sex, ethnicity, marital status, and occupation. We also analyzed clinical variables, such as reasons for hospitalizations, type of hospitalization (clinical or surgical), and patient outcomes.

For the descriptive analysis of sociodemographic and clinical data, we used measures of location, dispersion, and variability (average, standard deviation, maximum and minimum). For quantitative and categorical variables, we used simple frequency (number and frequency). For the association between the diseases diagnosed, sex, and ethnicity, we used the chi-square test. The research project was approved by the Research Ethics Committee of FAMERP, under consolidated Opinion CAAE: 41857015.0.0000.5415.

RESULTS

Table 1 describes the variables of the sample characterization of the patients assessed in the study.

Table 1. Variables of the sample characterization of older adult patients cared for in the in-patient units of a teaching hospital. São José do Rio Preto (SP), Brazil, 2014.

Sample characterization	No.	%
Sex	14,892	100
Female	6,878	46.2
Male	8,014	53.8
Educational level	13,500	100
Illiterate	1,815	13.4
Literate	164	1.2
Primary education	9,183	68
Secondary education	1,493	11.1
Higher education	845	6.3
Marital status	14,028	100
Lived with a partner	8,750	62.4
Did not live with a partner	5,278	37.6
Occupational status	14,067	100
Agricultural sector	1,355	9.6
Retired	3,161	22.5
Commercial sector	698	5
Housewife	4,652	33.1
Business sector	56	0.4
Educational sector	164	1.1
Industrial sector	66	0.5
Health sector	162	1.1
Service sector	3,595	25.6
Other sectors	158	1.1
Ethnicity	14,860	100
White	13,902	93.5
Black or mestizo	936	6.3
Asian	22	0.2
Religion	14,070	100
Catholic	11,291	80.2
Spiritist	404	2.9
Evangelical	2,026	14.4
Other	349	2.5

The results indicate that, of the patients assessed, 8,014 (53.8%) were male, 9,183 (68%) had primary education, 8,750 (62.4%) lived with a partner, and 4,652 (33.1%) were housewives, followed by 3,595 (25.6%) workers in the service sector, 13,902 (93.5%)

were white, and 11,291 (80.2%) were Catholic.

Table 2 shows the percentage of clinical variables of the patients assessed in the study.

Table 2. Clinical variables of older adult patients cared in the in-patient units of a teaching hospital. São José do Rio Preto (SP), Brazil, 2014.

Clinical variables	No.	%
Healthcare plan	14,892	100
Private healthcare	3,264	21.9
Unified Health System (public)	11,628	78.1
ICD group	14,892	100
Cardiovascular diseases	3,689	24.8
Skin diseases	182	1.2
Endocrine diseases	146	1
Gastrointestinal diseases	1,733	11.6
Gynecological diseases	150	1
Hematological diseases	155	1
Nephrorological diseases	1,473	9.9
Neurological diseases	456	3.1
Ophthalmological diseases	172	1.1
Orthopedic diseases	893	6
Respiratory diseases	1,058	7.1
Pain	367	2.5
Infections	1,368	9.2
Neoplasms	1,953	13.1
Other	536	3.6
Traumas	561	3.8
Type of hospitalization	14,892	100
Surgical	6,942	46.6
Clinical	7,950	53.4

Patient outcome	14,891	100
Hospital discharge	13,160	88.9
Abandoned the hospital	62	0.5
Death	1,565	10.5
Other	11	0.1
Patient referral	93	0.6

According to the data of Table 2, 11,628 (78.9%) patients had been cared for by the Unified Health System (SUS), 3,689 (24.8%) had cardiovascular diseases, followed by 1,953 (13.1%) with neoplasms, and 1,733 (11.6%) with gastrointestinal diseases. Regarding less prevalent diseases, 155 (1.0%) had hematologic diseases, 150 (1.0%) had gynecological diseases, and 146 (1%) had endocrine diseases. Of all the patients, 7,950 (53.4%) had been hospitalized for clinical issues, and the outcome of 13,160 (88.4%) had been hospital discharge.

The average age of the patients was 72.1 years, with standard deviation of 8.6 years and average of 71 years. The data did not

follow the normality assumption, due to the presence of several discrepant high values. The minimum age was 60 years and the maximum 103 years. The average length of hospital stay was 5.9 days, with a standard deviation of 8.8 days, and average of three days. The minimum length of hospital stay was one day and the maximum 227 days. The data did not follow the normality assumption and length of stay distribution exhibited several discrepant high values.

Table 3 shows the association between diseases diagnosed, sex, and ethnicity. It is worth noting that, to enable this analysis, non-white patients were grouped into a single group called non-white ethnicity.

Table 3. Association between diseases diagnosed, sex, and ethnicity of older adult patients cared for in the in-patient units of a teaching hospital. São José do Rio Preto (SP), Brazil, 2014.

Diagnosed diseases	Sex				Ethnicity			
	Female		Male		White		Non-white	
	No. (6,878)	% (100)	No. (8,014)	% (100)	No. (13,902)	% (100)	No. (958)	% (100)
Cardiovascular diseases	1,604	43.5	2,085	56.5	3,432	93.2	250	6.8
Skin diseases	82	45.1	100	54.9	168	92.3	14	7.7
Endocrine diseases	73	50	73	50	133	91.1	13	8.9
Gastrointestinal diseases	764	44.1	969	55.9	1,629	94.1	103	5.9
Gynecological diseases	150	100	0	0	140	94	9	6
Hematological diseases	64	41.3	91	58.7	151	97.4	4	2.6
Nephrorological diseases	620	42.1	853	57.9	1,382	94.1	86	5.9
Neurological diseases	236	51.8	220	48.2	413	90.6	43	9.4
Ophthalmological diseases	79	45.9	93	54.1	167	97.1	5	2.9
Orthopedic diseases	584	65.4	309	34.6	847	95.2	43	4.8
Respiratory diseases	511	48.3	547	51.7	984	93.4	70	6.6
Pain	215	58.6	152	41.4	340	93.2	25	6.8
Infections	598	43.7	770	56.3	1,270	92.8	98	7.2
Neoplasms	790	40.5	1163	59.5	1,835	94.2	114	5.8
Other	270	50.4	266	49.6	495	92.9	38	7.1
Traumas	239	42.6	322	57.4	516	92.3	43	7.7

p value¹

<0.0010.023

¹p value obtained by the chi-square test with p <0.05

The results of Table 3 indicate a significant association between diseases diagnosed, sex ($p < 0.001$), and ethnicity ($p = 0.023$) of the patients. In the case of the association between diseases and sex, most diseases diagnosed had occurred more often in male patients. However, endocrine, gynecological, neurological, and orthopedic diseases, as well as cases of pain, had been more frequent in female patients.

With respect to ethnicity, all cases of diseases were more prevalent in white patients. However, the association was linked to the fact that there was a greater difference between the percentages of disease

occurrence among non-white older adults. For these patients, the most frequent diseases were neurological, endocrine, skin diseases and traumas, followed by infections and other diseases. These diseases mentioned had percentage scores close to 10%. These values represent an enough difference to promote significant association between diseases diagnosed and the ethnicity of the patients assessed in the study.

DISCUSSION

Concurrent with population aging, it is also possible to observe an increase in chronic diseases and their complications. This

situation requires a longer use of health services for treatment, more costly interventions, and use of more complex technologies to provide appropriate care to older adults.⁸

In this context, it is also possible to note a proportional increase between chronic diseases and the number of older adult hospitalizations. In addition, the length of hospital stay increases accordingly.⁹

Regarding the data obtained in the present study, there was a predominance of male patients. The low demand for health services in basic healthcare units and greater exposure to external factors can contribute to that finding.¹⁰⁻¹

The low compliance of men with disease prevention programs is related to the cultural belief that man should be invulnerable, strong, and manly. Such concepts would be weakened by seeking health services. In this way, individuals seek health services when the problems become unbearable, which causes the highest number of hospitalizations, complications, and deaths.¹²

The low level of education found is related to the difficulty of access to education that occurred in the past, since the incentive to study and its appreciation have been more recently intensified, thus reaching younger age groups.^[13] Average age of 72 years, white ethnicity, and being married are in line with data found in other studies.¹⁴

Cardiovascular diseases were the main reasons for hospitalizations. Another study conducted in Maceió, State of Alagoas, Brazil, also pointed out a greater number of older adult hospitalizations due to circulatory diseases.¹⁵

In addition to being the leading cause of hospitalizations, cardiovascular diseases are also the leading cause of death among older adults, for both younger (60-79 years) and long-lived (over 80 years), the latter being even more important. Just as in the present study, a study conducted in the State of Rio Grande do Norte, Brazil, also pointed out neoplasms and diseases of the gastrointestinal tract as causes of mortality among older adults.¹⁶

The Family Health Strategy performs actions for disease prevention, health promotion, and minimization of damages. This national project is important for the reduction of acute processes of circulatory diseases and, consequently, the reduction in the number of older adult hospitalizations.¹⁷

The main outcome of the older adults was hospital discharge. The average length of

hospital stay in the in-patient units was 5.9 days (standard deviation = 8.8 days) and the median was 3.0 days. Nursing care is fundamental for patient outcomes. Early planning of hospital discharge performed by the nursing team, together with the multidisciplinary team, reduces the number of iatrogenic events, functional decline, length of hospital stay, bad outcomes after hospital discharge, mortality, and the number of rehospitalizations.¹⁸

Older adult patients demand extensive healthcare from the nursing team. However, the number of these health professionals, for the most part, falls short of what is needed. In this way, healthcare quality is compromised, contributing to a greater number of problems, such as pressure ulcers and falls. In addition, this low quality hinders the identification of each patient's needs.¹⁹

Another important factor is the referral and counter-referral of patients from the Family Health Strategy to hospital units. Communication between primary and tertiary healthcare facilitates hospital discharge planning, and promotes the necessary adjustment so that individualized health care can be effective.²⁰

Although most diseases were prevalent in men, some had a higher percentage of occurrences, such as neoplasms, hematological diseases, nephrological diseases, and traumas. As previously mentioned, men tend to resort less to medical appointments and seek emergency care. This fact leads to the aggravation of these diseases and a higher rate of male mortality.²¹

Studies carried out in the southern and the northern regions of Brazil indicated a greater number of services provided due to trauma in female older adults. This finding differs from what we found in our study. Those studies have also indicated falls as the main cause of trauma among older adults.²²⁻³

The high number of falls in older adults can be directly related to the fragility syndrome, whose one of its main features is gait changes. Studies show that this syndrome mainly affects long-lived older adults and female older adults, resulting in the risk of falls.²⁴

With respect to hematologic diseases, a study conducted in the State of Minas Gerais, Brazil, indicated the prevalence of anemia, which had also been more frequently observed in men.²⁵ On the other hand, neoplasms did not show significant differences between sexes according to a study conducted in the State of Rio Grande do Sul, Brazil. That study

found that breast cancer was more prevalent in women and prostate cancer in men.²⁶

Among nephrological diseases, urinary tract infection has great prominence among older adults due to multiple factors, such as anatomical and functional changes of the urinary tract and urinary incontinence, among others. Literature data suggest a higher incidence of urinary tract infections in female older adults, which differs from the data found in the present study.²⁷

CONCLUSION

This present study made it possible to confirm that chronic diseases were the leading causes of older adult hospitalizations. In addition, cardiovascular diseases were the main cause of such hospitalizations. Increased survival rate has also led to a greater occurrence of chronic diseases, thus causing increased length of hospital stay. The assessment of these factors provides subsidies for identifying problems and performing best nursing interventions.

Actions directed to the prevention of these diseases in the framework of basic healthcare are of great importance for a change in this Brazilian panorama. It is also important to define strategies for controlling and preventing the worsening of chronic diseases. The training provided to older adults' caregivers by a multidisciplinary team during hospitalization, and the development of early plans for hospital discharge, as well as performing counter-referral to basic healthcare services, are contributing factors to avoid rehospitalizations.

The main limitation of the present study was the impossibility to obtain data that might have contributed to the research—such as pre-existing comorbidities—via the system used in the institution where the study was conducted. Data such as the presence of diabetes and hypertension would contribute to a broader view of these older adults' health profile.

REFERENCES

1. Araújo DD, Carvalho RLR, Chianca TCM. Nursing diagnoses identified in records of hospitalized elderly. Invest Educ Enferm [Internet]. 2014 [cited 2016 June 6];32(2):225-35. Available from: <http://docplayer.com.br/2087400-Nursing-diagnoses-identified-in-records-of-hospitalized-elderly.html>.
2. Pomar CCB, Satiesteban RR, Fuentes IAP, Blanco JCG. Caracterización de ancianos hospitalizados en una unidad de cuidados intensivos. MEDISAN [Internet]. 2014 [cited 2016 May 15];18(4):537-43. Available from: <http://scielo.sld.cu/pdf/san/v18n4/san11414.pdf>.
3. Nascimento ERP, Silva SG, Souza BC, Souza DD, Germer Netto A. Ambiente de uma emergência hospitalar para o cuidado ao idoso: percepção dos profissionais de enfermagem. Esc Anna Nery [Internet]. 2015 [cited 2016 May 29];19(2):338-42. Available from: <http://www.scielo.br/pdf/ean/v19n2/1414-8145-ean-19-02-0338.pdf>.
4. Marques LP, Confortin SC. Doenças do aparelho circulatório: principal causas de internações de idosos no Brasil entre 2003 e 2012. Rev Bras Cienc Saúde [Internet]. 2015 [cited 2016 May 30];19(2):83-90. Available from: <http://periodicos.ufpb.br/ojs/index.php/rbcs/article/view/23631/15055>.
5. Reis CCA, Sena ELS, Menezes TMO. Vivências de familiares cuidadores de pessoas idosas hospitalizadas e a experiência de intercorporeidade. Esc Anna Nery [Internet]. 2016 [cited 2016 Set 13];20(3): e20160070. Available from: <http://www.scielo.br/pdf/ean/v20n3/1414-8145-ean-20-03-20160070.pdf>.
6. Chernicharo IM, Ferreira MA. Meanings of care of the hospitalized elderly from the perspective of caregivers. Esc Anna Nery [Internet]. 2015 [cited 2016 Jun 7];19(1):80-5. Available from: http://www.scielo.br/pdf/ean/v19n1/en_1414-8145-ean-19-01-0080.pdf.
7. Vieira GB, Alvarez AM, Sena AC, Fagundes MAF. Elderly knowledge about the access rights to health care. Cienc Cuid Saude [Internet]. 2015 [cited 2016 May 22];14(4):1528-36. Available from: <http://periodicos.uem.br/ojs/index.php/CienCuidSaude/article/view/28291/16540>.
8. Pimenta FB, Pinho L, Silveira MF, Botelho ACC. Factors associated with chronic disease among elderly receiving treatment under the Family Health Strategy. Cienc Saúde Coletiva [Internet]. 2015 [cited 2016 May 16];20(8): 2489-98. Available from: http://www.scielo.br/pdf/csc/v20n8/en_1413-8123-csc-20-08-2489.pdf.
9. Souza ICP, Silva AG, Quirino ACS, Neves MS, Moreira LR. Perfil de pacientes dependentes hospitalizados e cuidadores familiares: conhecimento e preparo para as práticas do cuidado domiciliar. Rev Min Enferm [Internet]. 2014 [cited 2016 May 25];18(1):164-72. Available from: <http://www.reme.org.br/artigo/detalhes/916>

10. Yoshida VC, Andrade MGG. O cuidado à saúde na perspectiva de trabalhadores homens portadores de doenças crônicas. *Interface Comum Saúde Educ* [Internet]. 2016 [cited 2016 Set 20];20(58):59-610. Available from: <http://www.scielo.br/pdf/icse/v20n58/1807-5762-icse-1807-576220150611.pdf>.

11. Lima DF, Barlem ELD, Santos SSC, Tomaschewski-Barlem JG, Ramos AM, Mattos KM. Avaliação dos fatores que dificultam a alimentação de idosos hospitalizados. *Rev Rene* [Internet]. 2014 [cited 2016 June 10];15(4):578-84. Available from: <http://www.revistarene.ufc.br/revista/index.php/revista/article/view/1622/pdf>.

12. Santos RO, Ferreira LS, Carvalho FLO, Soares APG, Pereira RSF. Fatores que influenciam a baixa adesão masculina ao atendimento prestado pela Estratégia de Saúde da Família Sede II do município de Sítio do Quinto/BA. *Rev saúde UniAGES* [Internet]. 2016 [cited 2016 Dez 18];1(1):58-87. Available from:

<http://npa.faculdadeages.com.br/index.php/revistadesaude/article/view/4/5>.

13. Oliveira TC, Medeiros WR, Lima KC. Diferenciais sócio demográficos da mortalidade de idosos em idades precoces e longevas. *Rev baiana saúde pública* [Internet]. 2015 [cited 2016 May 27];39(2):249-61. Available from: http://inseer.ibict.br/rbsp/index.php/rbsp/article/viewFile/2063/pdf_622.

14. Gutierrez BAO, Silva HS, Shimizu HE. Biopsychosocial aspects and the complexity of care of hospitalized elderly. *Acta Paul Enferm* [Internet]. 2014 [cited 2016 June 08];27(5):427-33. Available from: <http://www.scielo.br/pdf/apv/v27n5/1982-0194-apv-027-005-0427.pdf>.

15. Carvalho VL, Silva BMSD, Santos JST. Hospitalized elderly: clinical profile and characteristics of the physiotherapy service. *J Nurs UFPE on line* [Internet]. 2015 [cited 2016 June 12];9(9):9224-9. Available from: http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/7897/pdf_8549.

16. Oliveira TC, Medeiros WR, Lima KC. Diferenciais de mortalidade por causas nas faixas limítrofes de idosos. *Rev Bras Geriatr Gerontol* [Internet]. 2015 [cited 2016 May 28];18(1):85-94. Available from: <http://www.scielo.br/pdf/rbagg/v18n1/1809-9823-rbagg-18-01-00085.pdf>.

17. Pedreira RBS, Lobo LM, Medeiros ACM, Sampaio PC, Reis MC, Pinto Júnior EP. Hospitalizações por doenças do aparelho circulatório em idosos e estratégia saúde da

família. *Arq Ciênc Saúde* [Internet]. 2015 [cited 2016 May 18];22(3):31-6. Available from:

http://www.cienciasdasaude.famerp.br/index.php/racs/article/view/52/pdf_40.

18. Caldas CP, Veras RP, Motta LB, Guerra ACLC, Carlos MJ, Trocado CVM. Atendimento de emergências e suas interfaces: o cuidado de curta duração a idosos. *Bras Econ Saúde* [Internet]. 2015 [cited 2016 June 05];7(1):62-9. Available from: <http://files.bvs.br/upload/S/2175-2095/2015/v7n1/a4757.pdf>.

19. Toffoletto MC, Barbosa RL, Andolhe R, Oliveira EM, Ducci AJ, Padilha AG. Factors associated with the occurrence of adverse events in critical elderly patients. *Rev Bras Enferm* [Internet]. 2016 [cited 2016 Dez 10];69(6):977-83. Available from: http://www.scielo.br/pdf/reben/v69n6/en_0034-7167-reben-69-06-1039.pdf.

20. Thieme RD, Pinto LM, Macedo DS, Palm RCM, Schieferdecker MEM. Elaboração e implantação de protocolo de alta responsável para idosos com doenças crônicas hospitalizados e com necessidades alimentares especiais. *Demetra* [Internet]. 2014 [cited 2016 June 10];9(Supl.1):269-86. Available from: <http://www.e-publicacoes.uerj.br/index.php/demetra/article/view/10347/9701#.WREUeuXyVlU>.

21. Freire GA, Nardi EFR, Santos LMR, Sawada MO. Mortalidade por causas externas em idosos no Paraná, Brasil de 2001-2010. *Cient Ciênc Biol Saúde* [Internet]. 2013 [cited 2016 July 18];15(2):161-7. Available from: <http://www.pgsskroton.com.br/seer/index.php/JHealthSci/article/view/744/713>.

22. Rodrigues J, Mantovani MF, Ciosak SI. Elderly and trauma: profile and triggering factors. *Rev Enferm UFPE on line* [Internet]. 2015 7 [cited 2016 July 18];9(3):7071-. Available from: http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/7305/pdf_7384.

23. Silva HC, Pessoa RL, Menezes RMP. Trauma in elderly people: access to the health system through pre-hospital care. *Rev Latino-Am Enfermagem* [Internet]. 2016 [cited 2016 Dez 18];24: e2690. Available from: <http://www.scielo.br/pdf/rlae/v24/0104-1169-rlae-24-02690.pdf>.

24. Certo A, Sanchez K, Galvão A, Fernandes H. A síndrome da fragilidade nos idosos: revisão da literatura. *Actas gerontol* [Internet]. 2016 [cited 2017 Jan 11];2(1):1-11. Available from:

<http://www.actasdegerontologia.pt/index.php/Gerontologia/article/view/56/60>.

25. Milagres CS, Moraes KBD, Franceschini SCC, Sant'Ana LFR, Lima LM, Ribeiro AQ. Prevalência e fatores associados à presença de anemia em idosos do município de Viçosa (MG), Brasil. *Ciênc Saúde Coletiva* [Internet]. 2015 [cited 2016 July 18];20(12):3733-41. Available from: <http://www.scielo.br/pdf/csc/v20n12/1413-8123-csc-20-12-3733.pdf>.

26. Viero FT, Lara JM. Perfil socioeconômico e clínico de pacientes em tratamento oncológico em um município do Norte do Rio Grande do Sul. *Rev Iniciação Cientific ULBRA* [Internet]. 2015 [cited 2016 July 18];13:80-90. Available from: <http://www.periodicos.ulbra.br/index.php/ic/article/view/1418/1188>.

27. Tavares IVB, Sá AB. Perfil de prescrição de antimicrobianos para as infecções do tracto urinário nos cuidados de saúde primários. *Rev Port Med Geral Fam* [Internet]. 2014 [cited 2016 July 20];30:85-100. Available from: <http://www.scielo.mec.pt/pdf/rpmgf/v30n2/v30n2a04.pdf>.

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