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Hospitalizations of the Elderly due to Primary Care-Sensitive Conditions in the South-Central Region of the State of Paraná

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Abstract

Hospitalizations due to Primary Care-Sensitive Conditions (HPCSC) are caused by diseases whose care must be carried out at the first level of care and when not carried out lead to hospitalization, such as bacterial pneumonia, complications of diabetes mellitus, systemic arterial hypertension, asthma, among others. In order to analyze the main groups of diseases that cause HPCSC in elderly people in the South-Central region of the state of Paraná, a descriptive, exploratory, and ecological study of elderly people aged 60 to 74 years was carried out from 2008 to 2018 using the Hospital Information System of the Unified Health System (HIS/UHS), available on the website of the UHS Department of Informatics (DATASUS). In the analyzed period, there were 19,948 hospitalizations of elderly people aged 60 to 74 years due to PCSC. 10,007 (50.16%) cases were of men and 9,941 (49.84%) of women; the group of causes with the highest incidence of hospitalization were pulmonary diseases at 23.86%, followed by bacterial pneumonia at 20.47%, and heart failure at 12.59%; and these three groups accounted for more than 50% of all hospitalizations. The findings demonstrate a higher male incidence of HPCSC, with lung diseases, pneumonia, and heart failure being the main pathologies that affect the elderly population in the studied region. This reinforces the idea that promotion and prevention actions can help to reduce the number of hospitalizations and improved quality of life.

Keywords: Primary Health Care. Hospitalization. Elderly.

INTRODUCTION

In the 1990s in the United States of America (USA), considering the high rates of hospitalization for some diseases, the problems with and difficulties in accessing health services, and the low resolution of Primary Health Care (PHC) lead to the creation of a diagnosis list of Hospitalizations due to Primary Care-Sensitive Conditions (HPCSC) with the objective of evaluating the North American public system by aiming to monitor HPCSCs[1].

Primary Health Care-Sensitive Conditions

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(PCSC) are diseases whose care must be carried out at the first level of care and when not carried out can lead to hospitalizations, such as bacterial pneumonias, complications of diabetes mellitus and systemic arterial hypertension, and asthma, among others[2].

In Brazil, in 2008, an Ordinance of the Health Care Secretariat of the Ministry of Health (SAS/MS 221) was launched with the aim of evaluating the nation's PHC using HPCSC indicators[3].

The main categories of PCSC described in this ordinance are: diseases preventable by immunization; non-infectious gastritis and its complications; anemias; nutritional deficiencies; ear, nose and throat infections; bacterial pneumonias; asthma, lung diseases; systemic arterial hypertension; angina; heart failure, cerebrovascular diseases; diabetes mellitus; epilepsy; kidney and urinary tract infections; skin and subcutaneous tissue infections; inflammatory diseases of the female pelvic organs; gastrointestinal ulcers; and diseases related to prenatal care and childbirth[4].

The neglect and high values of HPCSC represent a fragility and low resolution of PHC. Therefore, the identification of the most prevalent groups among populations allows for the restructuring of policies and programs, as well as the reformulation of actions directed at diseases for each specific region since the current Brazilian territory is vast, possesses a great cultural, demographic, and socioeconomic diversity[5].

In 1991, the Family Health Program (FHP) began to be implemented in Brazil with the aim of increasing access and expanding prevention actions and health promotion. In 1994, the Ministry of Health then launched the FHP as the National Policy for Primary Care (NPPC) aiming to change the existing biomedical model. Later, from the 2000s onwards, it was renamed as Family Health Strategies (FHS) through ordinance 2488/GM to replace the traditional Primary Care (PC) model, by working in territories, performing household registration, situational diagnoses, actions addressed to health problems in an agreeable manner with the community where it operates, while seeking to care for individuals and families at the same time[6].

Thus, PHC is based on being the first level of health care, the gateway to the health system. The population must have access to basic specialties, which are: Internal Medicine, Pediatrics, Obstetrics, and Gynecology[7]. It must also develop actions to resolve health problems, coordinating with other levels of complexity in the health system, thus, forming an integrated network of services[8]. Studies show that PHC is capable of solving about 80% of the population's health needs and problems[7].

With the prospect of a large increase in the elderly population, investing in studies that can contribute to the organization of health services and assist in planning the necessary actions for effective and quality care. Therefore, knowing the profile of hospitalizations among the elderly population becomes important for planning and monitoring public policies and directing financial and human resources[9].

The expansion of FHS coverage will facilitate the population's access to services at this level of care, and at the same time, the quality of the care received will contribute to the reduction of HPCSC[10].

The objectives of this study were to analyze the main groups of causes of Hospitalizations due to Primary Care-Sensitive Conditions in elderly individuals aged 60 to 74 years old, and to identify the HPCSC variables according to sex, age group, residence, and cause group.

METHOD

This was a descriptive, exploratory, and ecological study. Where information was collected on HPCSC of elderly individuals aged 60 to 74 years old, in the Hospital Information System of the Unified Health System (HIS/UHS), available on the website of the SUS Department of Informatics (DATASUS) in the public domain, for the period from 2008 to 2018.

Data collection took place in a systematic way, in the Ministry of Health programs and in line with the guidelines of DATASUS/TABNET and Decree 221 of 2008.

In this study, data of HPCSC's of elderly people living in the 15 municipalities that belong to the 7th Health Region of PR, located in the South-Central region of the state, were analyzed.

Among the indicators for the classification of the sample were age, sex, cause of hospitalizations of patients residing in the municipalities of Bom Sucesso do Sul, Chopinzinho, Clevelândia, Colonel Domingos Soares, Colonel Vivida, Honório Serpa, Itapejara d'Oeste, Mangueirinha, Mariópolis, Palmas, Pato Branco, São João, Saudade do Iguaçu, Sulina, and Vitorino, which were observed and registered in the Information System by municipality of residence.

The study was approved by the Research Ethics Committee (REC) of Western University of Santa Catarina (UNOESC) under opinion № 4.019.881.

The data were collected with the help of the Excel Program and are presented as tables and graphs. The analysis of the results is supported by national and international literature on the researched subject.

RESULTS

The results of this study show that in the South-Central Region of the State of Paraná there were 19,948 hospitalizations of elderly aged 60 to 74 years for PCSC in the period from 2008 to 2018, where 10,007 (50.16%) cases were men and 9,941 (49.84%) were women; as seen in figure 1.

In figure 2 demonstrates the annual total of HPCSCs over the period studied. There was a peak in 2009 of 2,032 hospitalizations and this index decreased in the subsequent 5 years. In 2014, the lowest number of HPCSCs was obtained, totaling 1,609, increasing again later in 2015 and maintaining high levels until 2018, but in smaller numbers, indicating a gradual decrease.

When looking at table 1, the municipality of Pato Branco had the highest number of HPCSCs with 4902 cases, followed by Coronel Vivida with 2883 and Palmas with 2203 cases. 2009 was the year with the highest incidence.

Analyzing the HPCSCs according to group of cause, table 2 shows that in the population studied, the groups of causes with the highest incidence were lung diseases 23.86%, followed by bacterial pneumonia at 20.47%, and heart failure at 12.59%. These 3 groups were responsible for about 56.89% of all hospitalizations of the elderly aged 60 to 74 years old in the study period.

As can be seen in table 3, the city of Pato Branco had the highest number of hospitalizations for lung diseases with 1169 cases, and males prevailed with 621 cases whiles females were of 548 cases.

Another city with high numbers was Coronel Vivida with 1002 hospitalizations. Of these, 478 were men and 524 were women; thus, there was a prevalence among females.

The pneumonia group was the second

group with the highest incidence with 4,085 hospitalizations, and a prevalence of 2,134 male cases and 1,951 female cases.

It can be seen in table 4 that the municipality of Clevelândia had the highest number of hospitalizations for this group of causes with 920 cases, where there was a prevalence of 472 female cases and 448 male cases.

The third pathology with the highest incidence of hospitalizations was Heart Failure with 2,513 hospitalizations, and a prevalence of 1,281 female cases and 1232 male cases.

Pato Branco was the municipality with the highest number of hospitalizations for Heart Failure, as shown in table 5. There were 657 cases, with a prevalence of 356 male cases and 301 female cases.

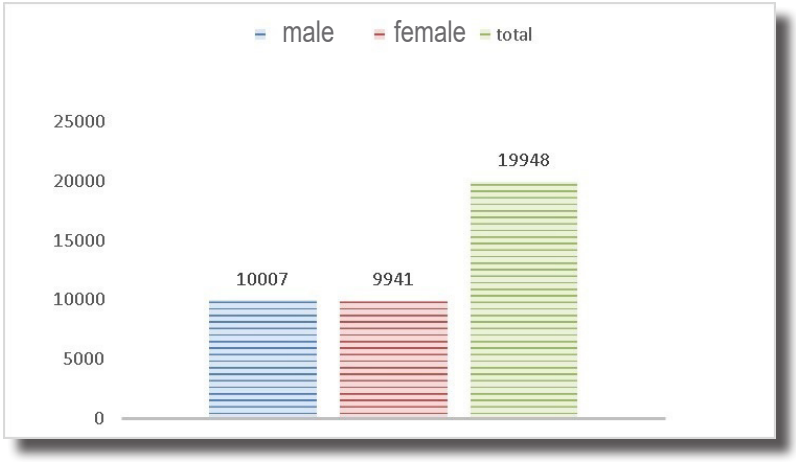
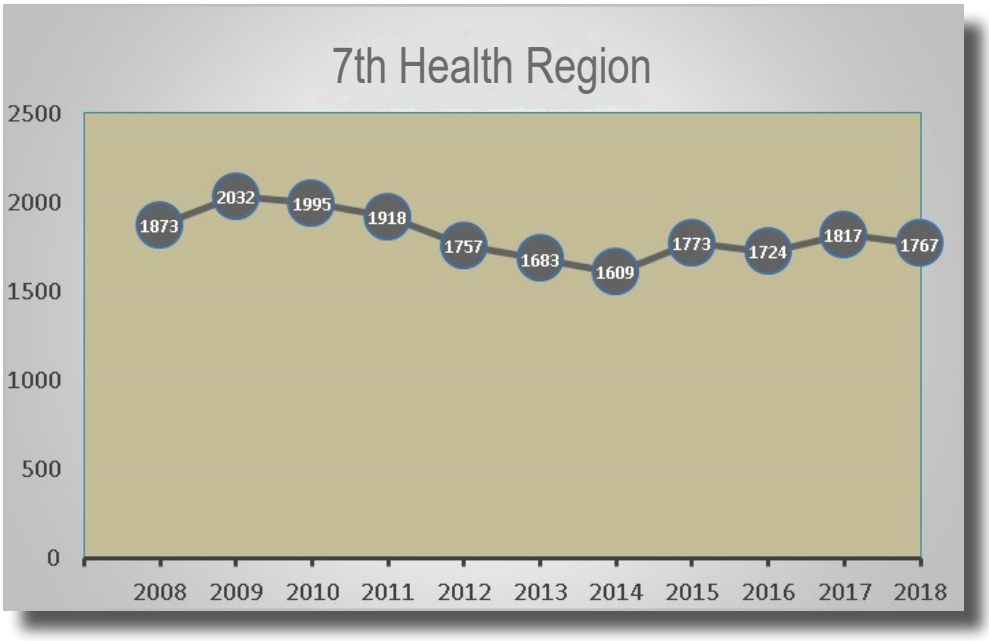


Figure 1 – Total number of admissions for Primary Care-Sensitive Conditions in the period from 2008 to 2018 by sex, in the area covered by the 7th Health Region of Pato Branco, PR.



Source: Datasus, 2020

Figure 2 – Annual general total of Hospitalizations due to Primary Care-Sensitive Conditions in the period from 2008 to 2018, in the area covered by the 7th Regional Health of Pato Branco, PR.

Table 1 – Total Hospitalizations by municipality in the period from 2008 to 2018 of the elderly population aged 60 to 74 years in the area covered by the 7th Health Region of Pato Branco-PR.

CITY	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Bom Sucesso do Sul	21	6	14	14	21	15	19	21	21	17	22	191
Chopinzinho	190	193	193	151	139	163	183	218	161	186	160	1937
Clevelândia	185	195	191	195	169	137	169	194	206	199	186	2026
Coronel Domingos Soares	12	39	28	18	21	33	30	35	49	42	53	360
Coronel Vivida	352	339	279	319	352	268	156	260	183	170	205	2883
Honório Serpa	61	56	59	58	42	16	11	9	10	11	20	353
Itapejara d'Oeste	32	16	23	20	19	26	28	28	28	30	31	281
Mangueirinha	152	154	151	133	150	151	155	189	178	163	191	1767
Mariópolis	93	88	96	87	79	24	31	30	42	43	36	649
Palmas	166	243	236	223	169	220	198	159	213	218	158	2203
Pato Branco	380	418	449	464	385	406	429	418	471	549	533	4902
São João	101	148	136	100	109	113	91	79	34	59	75	1045
Saudade do Iguaçu	42	34	35	48	38	58	62	70	74	52	47	560
Sulina	48	56	64	40	42	31	21	25	23	51	22	423
Vitorino	38	47	41	48	22	22	26	38	31	27	28	368
7th Health Region	1873	2032	1995	1918	1757	1683	1609	1773	1724	1817	1767	19948

Fonte: Datasus, 2020; Ministério da Saúde, 2020

Table 2 – Total Hospitalizations by group of Causes (ICD 10) and percentage by sex in the period from 2008 to 2018 of the elderly population aged 60-74 years old in the area covered by the 7th Health Region of Pato Branco, PR.

GROUPS OF CAUSES	MALE (%)	FEMALE (%)	TOTAL (%)
1st Preventable Diseases by Immunization and Sensitive Conditions	12 (0.06%)	7 (0.03%)	19 (0.09%)
2nd Infectious gastritis and its complications	325 (1.62%)	410 (2.05%)	735 (3.68%)
3rd Anemia	259 (1.29%	302 (1.51%)	561(2.81%)
4th Nutritional and metabolic deficiencies	107 (0.53%)	84 (0.42%)	191 (0.95%)
5th Ear, Nose and Throat Infections	24 (0.12%)	16 (0,08%)	40 (0.20%)
6th Pneumonia	2134 (10.69%)	1951 (9.78%)	4085 (20.47%)
7th Asthma	627 (3.14%)	816 (4.09%)	1443 (7.23%)
8th Pulmonary Diseases	2419 (12.12%)	2341 (11.73%)	4760 (23.86%)
9th Hypertension	229 (1.14%)	361 (1.80%)	590 (2.95%)
10th Angina	-	-	-
11th Heart Failure	1232 (6.17%)	1281 (6.42%)	2513 (12.59%)
12th Cerebrovascular Diseases	856 (4.29%)	696 (3.48%)	1552 (7.78%)
13th Diabetes Mellitus	424 (2.12%)	565 (2.83%)	989 (4.95%)
14th Epilepsy	133 (0.66%)	64 (0.32%)	197 (0.98%)
15th Kidney and Urinary Tract Infection	405 (2.03%)	210 (1.05%)	615 (3.08%)
16th Skin and subcutaneous tissue infections	227 (1.13%)	273 (1.36%)	500 (2.50%)
17th Inflammatory Diseases of the Female Pelvic Organs	-	17 (0.08%)	17 (0.08%)
18th Gastrointestinal Ulcers	613 (3.07%)	549 (2.75%)	1162 (5.82%)
Total	10007 (50.16%)	9941 (49.84%)	19948 (100%)

Fonte: Datasus, 2020

Table 3 – Total Hospitalizations due to Lung Diseases, according to sex and municipality in the period from 2008 to 2018 of the elderly population aged 60-74 years in the area covered by the 7th Health Region of Pato Branco, PR.

CITY	LUNG DISEASES		
	MALE	FEM.	TOTAL
Bom Sucesso do Sul	36	20	56
Chopinzinho	125	156	281
Clevelândia	227	182	409
Coronel Domingos Soares	35	76	111
Coronel Vivida	478	524	1002
Honório Serpa	64	47	111
Itapejara d'Oeste	40	18	58
Mangueirinha	116	110	226
Mariópolis	153	93	246
Palmas	310	419	729
Pato Branco	621	548	1169
São João	77	50	127
Saudade do Iguaçu	63	36	99
Sulina	30	21	51
Vitorino	48	38	87
7th Health Region	2419	2341	4760

Source: Datasus, 2020

Table 4 – Total Hospitalizations due to Pneumonia, according to sex and municipality in the period from 2008 to 2018 of the elderly population aged 60-74 years in the area covered by the 7th Health Region of Pato Branco, PR.

CITY	PNEUMONIA		
	MALE	FEM.	TOTAL
Bom Sucesso do Sul	23	8	31
Chopinzinho	222	255	477
Clevelândia	448	472	920
Coronel Domingos Soares	32	44	76
Coronel Vivida	220	188	408
Honório Serpa	10	12	22
Itapejara d'Oeste	23	10	33
Mangueirinha	209	229	438
Mariópolis	86	41	127
Palmas	166	156	322
Pato Branco	447	341	788
São João	107	67	174
Saudade do Iguaçu	72	63	135
Sulina	40	37	77
Vitorino	29	27	56
7th Health Region	2134	1951	4085

Source: Datasus, 2020

Table 5 – Total Hospitalizations due to Heart Failure according to sex and municipality in the period from 2008 to 2018 of the elderly population aged 60-74 years in the area covered by the 7th Health Region of Pato Branco, PR.

CITY	HEART FAILURE		
	MALE	FEM.	TOTAL
Bom Sucesso do Sul	11	13	24
Chopinzinho	99	106	205
Clevelândia	114	156	270
Coronel Domingos Soares	26	15	41
Coronel Vivida	109	170	279
Honório Serpa	14	15	29
Itapejara d'Oeste	35	7	42
Mangueirinha	161	117	278
Mariópolis	38	33	71
Palmas	117	231	348
Pato Branco	356	301	657
São João	48	48	96
Saudade do Iguaçu	27	26	58
Sulina	53	22	75
Vitorino	25	16	41
7th Health Region	1232	1281	2513

Source: Datasus, 2020

DISCUSSION

Thinking about population aging is necessary. It is estimated that in 2020 Brazil will have approximately 13 million elderly people (12.4%) and in the year 2060 more than a third of the population will be made up of people aged 60 years or more (33.7%). This indicates that there will be a possible overload on the health system because the elderly population uses the services in a higher proportion than other age groups[3].

In a study on the trend of hospitalizations and mortality of elderly people due to PCSC in Santa Catarina, 842,682 elderly hospitalizations were accounted for during the study period (2008-2015) and 303,757 of them were due to PCSC. Of these, women were responsible for 51.4% of hospitalizations and men for 48.6%[3]. Diverging with the results herein, as in the studied region, men were responsible for 50.16% of hospitalizations and women for 49.84%, with a small variation.

In a study in the South-Central region of Brazil, in the age group of 60 years or more, circulatory system diseases are the most prevalent, with Heart Failure, Angina, and Cerebrovascular Diseases as the main groups of causes with the highest rates of HPCSC[11]. This does not corroborate the data from the South-Central region of the state of Paraná, as the data found in this region demonstrated a prevalence of HPCSC due to chronic obstructive pulmonary diseases, followed by bacterial pneumonia and heart failure. These 3 subgroups accounted for about 56.89% of all hospitalizations of elderly aged 60 to 74 years in the study period.

The practice of caring for the elderly requires a global, interdisciplinary, and multidimensional approach, taking into account the physical, psychological, and social factors that influence the health of an elderly person, as well as the environment in which they are inserted, aiming to detect and prevent injuries while preserving autonomy, independence, and encouraging self-care[12].

Research focused on HPCSC in the state of Paraná in the years 2000 to 2011 focusing on four basic causes, Systemic Arterial Hypertension (SAH), Diabetes Mellitus (DM), Cerebrovascular Diseases (CbV), and Chronic Congestive Heart Failure (CHF), identified 5,219,427 hospitalizations throughout the state where 691,253 were of these researched pathologies, or rather, 13% of all hospitalizations[13].

Hospitalizations due to PCSC do not assess the patient's clinical condition or the quality of the medical treatment that led to hospitalization, but the effectiveness of policies and actions taken to face such health problems[14].

Analyzing the relationship between HPCSC and FHS coverage is important due to their direct relationship. A study conducted in the period from 2000 to 2007 found an increase in FHS coverage and a reduction in hospitalizations due to PCSC in the state of São Paulo. However, this did not happen uniformly, which raises the hypothesis that the PHC did not reach the necessary quality[15].

Thus, investigations on HPCSC can contribute as a theoretical subsidy for the strengthening of the UHS, as well as present reflections that enable interdisciplinary actions to be implemented, aiming at the main morbidities and PCSCs that may lead to hospitalization. Moreover, they may provide managers and professionals in the studied municipalities with an alternative perspective for creating policies to improve PHC actions and implementing practices aimed at health promotion and disease prevention.

CONCLUSION

The findings of this study demonstrate that surveys aimed at HPCSC rates allow for the assessment of the strengths and weaknesses of the FHS teams, showing that promotion and prevention actions can help to reduce the number of hospitalizations and provide the elderly with a better quality of life.

Therefore, it is necessary to deepen research aimed at PCSC so that they can be used as a theoretical subsidy in the creation of policies that help municipalities to achieve a PHC of excellence, thus, providing the elderly population with a perspective of healthy aging.

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