

# Health services use among elderly people living in the community\*

UTILIZAÇÃO DE SERVIÇOS DE SAÚDE POR IDOSOS VIVENDO NA COMUNIDADE

UTILIZACIÓN DE SERVICIOS DE SALUD POR ANCIANOS VIVIENDO EN LA COMUNIDAD

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## ABSTRACT

The objective of this study was to analyze the patterns in health service use among elder patients who sought public health services in Guarapuava, Paraná, Brazil. Home interviews were conducted with 359 aged individuals, who were selected using stratified proportional sampling. The interviews were conducted from January 2010 to April 2010 at the homes of the participants using sections I and III of the Brazil Old Age Schedule (BOAS). An association analysis was performed using the  $\chi^2$  test. The health services that were used the most over the last three months were medical appointments (49.6%) and clinical exams (38.4%). Women used health services more often ( $p=0.0240$ ) than men. Additionally, 55.6% of the participants reported not seeking dental care. The aged population represents a large component of health service users, and the public health network of the city must be organized according to the increasing demand for therapeutic diagnostic procedures.

## DESCRIPTORS

Aged Population  
Health Services  
Dental Care for the Aged Population  
Epidemiology  
Geriatric Nursing

## RESUMO

O objetivo deste estudo foi analisar o padrão de utilização dos serviços de saúde por idosos cadastrados nos serviços públicos de Guarapuava-PR. Realizou-se inquérito domiciliar com 359 idosos selecionados por meio de amostragem estratificada proporcional. As entrevistas foram aplicadas entre janeiro e abril de 2010 no domicílio do idoso, utilizando-se as seções I e III do questionário BOAS (Brazil Old Age Schedule). Para apreciação aplicou-se análise de associação por meio do teste  $\chi^2$ . Os serviços de saúde mais utilizados pelos idosos nos últimos três meses foram à consulta médica (49,6%) e os exames clínicos (38,4%). As mulheres utilizaram mais os serviços de saúde ( $p=0,0240$ ); 55,6% dos idosos relataram não procurar os serviços dentários. Conclui-se que a população idosa é grande usuária dos serviços de saúde e a rede pública do município necessita se organizar frente a uma demanda crescente por procedimentos diagnósticos terapêuticos.

## DESCRITORES

Idoso  
Serviços de Saúde  
Assistência Odontológica para Idosos  
Epidemiologia  
Enfermagem geriátrica

## RESUMEN

Se apuntó a analizar el estándar de utilización de servicios de salud por ancianos registrados en servicios públicos de Guarapuava-PR. Averiguación domiciliar, con participación de 359 ancianos seleccionados por muestra estratificada proporcional. Las entrevistas se realizaron de enero a abril de 2010 en el domicilio de los ancianos, utilizándose las secciones I y III del cuestionario BOAS (Brazil Old Age Schedule). Se utilizó el análisis de asociación mediante test  $\chi^2$ . Los servicios de salud más utilizados por los ancianos en los últimos tres meses fueron la consulta médica (49,6%) y los exámenes clínicos (38,4%). Las mujeres hicieron mayor uso de los servicios de salud ( $p=0,0240$ ); 55,6% de los ancianos informaron no solicitar los servicios odontológicos. Se concluye en que la población anciana es una gran usuaria de los servicios de salud, la red pública municipal necesita organizarse frente a una demanda creciente de procedimientos diagnósticos terapéuticos.

## DESCRIPTORES

Ancianos  
Servicios de Salud  
Cuidado Dental para Ancianos  
Epidemiología  
Enfermería geriátrica

\* Extracted from the dissertation "Conhecendo o idoso na comunidade: subsídios para a equipe e para os serviços de saúde, Guarapuava – PR", Graduate Program in Nursing, State University of Maringá, 2010. <sup>1</sup>RN. Doctoral student in Nursing at University of São Paulo at Ribeirão Preto College of Nursing. Professor of the Nursing Department at Universidade Estadual do Centro-Oeste. Guarapuava, PR, Brazil. caliopepilger@hotmail.com <sup>2</sup> Mathematician. Ph.D.. Professor of the Mathematics Department at Universidade Estadual do Centro-Oeste Irati, PR, Brazil. menon@unicentro.br <sup>3</sup>RN. Ph.D.. Associate Professor of the Nursing Department at State University of Maringá. Maringá, PR, Brazil. tafmathias@uem.br

## INTRODUCTION

The aged population comprises people over 60 years of age and represents the patient population with the highest demand for health care services. This demand has intensified due to the increasing longevity of the Brazilian population, which is now similar to that of other nations.

Epidemiological studies have demonstrated that the use of health care services is based on a set of determining factors that directly influence the patient approach to services, particularly among elderly patients. With the aging process, elderly people are displaced from one care level to another level; however, these patients often have decreased access to health care services that specialize in geriatric care<sup>(1)</sup>. Comparisons among different age groups have indicated higher prevalence rates in the use of health care services among aged people than younger people<sup>(2)</sup>. The determining factors for the use of healthcare services and the frequency of use include geographic and socioeconomic variations, individual needs, quality of life, health-related knowledge, and morbidity profiles<sup>(3)</sup>.

A major public policy objective in several countries is the reduction of inequality regarding access to healthcare services. An action plan that will reduce inequality and assess in-force policies must be based on the healthcare services that are accessed, the sociodemographic profiles of the patients and their individual needs<sup>(4)</sup>.

Studies have analyzed the social, cultural and epidemiological factors that are associated with the use of health care services, particularly whether there is standardized use of services by elderly people. The demand for healthcare services stems from a number of factors. Knowing these factors, healthcare professionals and managers may develop new care models and determine the improvements that can be made to address the needs of elderly people.

This study was therefore aimed at analyzing the patterns in health service use among aged patients who sought public primary healthcare services in the city of Guarapuava, Paraná.

## METHODS

This cross-sectional study was performed using home-based interviews. The population comprised all aged patients who sought treatment at the Primary Healthcare Units (PHUs) in the city of Guarapuava, Paraná. The population of the city was estimated to be 172,128 in 2009, of which 14,981 were aged individuals<sup>(5)</sup>. The city has 30 PHUs and 29 Family Healthcare Teams, which cover 96.4% of the territory.

The following calculation of the sample was performed using proportional stratified sampling of all the aged patients who sought treatment at the 30 PHUs in the city:

$$n_0 = \frac{(Z \alpha/2)^2}{4d^2}$$

where  $z \alpha / 2 = z_{0.025} = 1.96$ ; confidence level = 5%;  $n = (N \cdot n_0) / (N + n_0)$ ;  $d$  = margin of error.

Lists that contained the names of 5,508 patients over 60 years of age who were enrolled in the Primary Care Information System (PCIS) of each Family Healthcare Strategy (FHS) team from each municipal PHU during December 2009 were obtained. The sample comprised 359 elderly individuals who were proportionally selected according to the total number of patients at each PHU. To select the interviewees, the patients were randomly sorted, and all of the patients had the same chance of being included.

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The Brazil Old Age Schedule (BOAS) questionnaire was used as the data collection instrument. The questionnaire is a multidimensional tool that encompasses the physical and mental aspects, daily activities and socioeconomic conditions of the elderly<sup>(6)</sup>. The study employed section I (general information, such as sex, age, educational level, marital status, family organization, origin, and the degree of satisfaction with life) and section III (medical and dental service use) to determine the care needs of the population and the correlation between health service use and the sociodemographic variables.

The home-based interviews involved either the patients or their caregivers when there were communication restrictions with the patients. The interviews were conducted from January 2010 through April 2010 by specifically trained interviewers. Overall, 13 people refused to participate in the study.

The data were double-entered into an Excel sheet and then corrected and analyzed using the *Estatistic* program, the  $\chi^2$  test and Fisher's exact test. The right of the patients to participate or withdraw from the study at any time was fully respected, and the privacy of the collected information was ensured by Free and Clarified Consent Forms.

The research project was approved by the Permanent Ethics Committee for Human Research of the State University of Maringá according to resolution 196/96 of the National Health Council (Review 492/2009).

## RESULTS

The healthcare services that were used the most by the interviewees during the three months before the

interviews were medical appointments, clinical/laboratory exams and emergency care services. The results indicated a higher prevalence of women ( $p=0.0029$ ,  $p=0.0208$  and  $p=0.0019$ ) (Table 1).

Regarding the sociodemographic characteristics, Table 2 shows a more frequent use of healthcare services by

women compared with men ( $p=0.0240$ ). People who were over the age of 80 years, married, or living with someone else most frequently used healthcare services within the three months that preceded the interview (92.5%, 90.3%, and 89.6%, respectively) (Table 2). However, these findings lack statistical significance.

**Table 1** - Healthcare service use according to gender, Guarapuava, PR, 2010.

Variables	Men		Women		PR	CI	p value
	N	%	N	%			
<b>Consulted a doctor</b>							
Yes	50	39.1	127	55.5		1	
No	78	60.9	102	44.5	1.37	1.12-1.67	0.0029
<b>Underwent a clinical/laboratory exam</b>							
Yes	39	30.5	99	42.9		1	
No	89	69.5	132	57.1	1.22	1.04-1.43	0.0208
<b>Received physiotherapeutic treatment</b>							
Yes	5	3.9	11	4.8		1	
No	123	96.1	218	95.2	1.01	0.96-1.06	0.6943
<b>Sought emergency service help</b>							
Yes	6	4.7	36	15.7		1	
No	122	95.3	193	84.3	1.13	1.06-1.21	0.0019
<b>Received medication at the hospital</b>							
Yes	10	7.8	22	9.6		1	
No	118	92.2	207	90.4	1.02	0.95-1.09	0.5692
<b>Required hospitalization</b>							
Yes	10	7.8	20	8.7		1	
No	118	92.2	210	91.3	1.01	0.95-1.08	0.7725
<b>Consulted a dentist</b>							
Yes	5	3.9	8	3.5		1	
No	123	96.1	222	96.5	1.00	0.95-1.04	0.5238

\* The percentage calculations excluded absent or ignored responses.

**Table 2** - Healthcare service use according to sociodemographic variables, Guarapuava, PR, 2010.

Variables	Use		No use		PR	CI	p value
	N	%	N	%			
<b>Gender</b>							
Women	207	91.6	19	8.4		1	
Men	108	83.7	21	16.3	1.94	(1.08-3.46)	0.0240
<b>Age</b>							
60-69 years	189	88.7	24	11.3		1	
70-79 years	87	87.0	13	13.0	1.15	(0.61-2.17)	0.6580
80 years and older	37	92.5	3	7.5	0.63	(0.20-2.01)	0.3154
<b>Educational level</b>							
Secondary or +	24	88.9	3	11.1		1	
Primary	167	86.1	27	13.9	1.25	(0.41-3.85)	0.4833
None/cannot read, cannot write	124	92.5	10	7.5	0.67	(0.20-2.28)	0.3759

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Variables	Use		No use		PR	CI	p value
	N	%	N	%			
<b>Marital status</b>							
Married/share home	186	90.3	20	9.7	1		
Single widow(er)/ divorced	129	86.6	20	13.4	1.38 (0.77-2.48)		0.2747
<b>Family organization</b>							
Lives with someone	276	89.6	32	10.4	1		
Lives alone	39	83.0	8	17.0	1.64 (0.80-3.34)		0.1804
<b>Family income</b>							
3 + minimum salary	20	80.0	5	20.0	1		
1-3 salaries	160	90.4	17	9.6	0.48 (0.19-1.19)		0.1149
Up to 1 salary	89	90.8	9	9.2	0.46 (0.17-1.25)		0.1237
<b>Home</b>							
Urban	250	87.7	35	12.3	1		
Rural	65	92.9	5	7.1	0.58 (0.24-1.43)		0.2231

\* The percentage calculations excluded absent or ignored responses.

Aged patients with a higher educational level used dental services more frequently than aged patients with primary educational levels ( $p=0.0332$ ) or no education ( $p=0.0034$ ) (Table 3).

The majority of the aged patients used public health services when they needed medical care (70.4%), and

only 12.1% of the patients reported having a healthcare insurance plan. Regarding dental services, 55.6% of the aged patients reported that they did not seek dental care. Among the patients who sought dental care, 25.9% used public health services and approximately 14.8% utilized private services (Table 4).

**Table 3** - Dental service use according to sociodemographic variables, Guarapuava, PR, 2010.

Variáveis	Use		No use		PR	CI	p value
	N	%*	N	%*			
<b>Sex</b>							
Men	59	46.1	69	53.9	0.96 (0.79-1.17)		0.6635
Women	97	43.7	125	56.3	1		
<b>Age</b>							
60-69 years	93	44.1	118	55.9	1		
70-79 years	43	43.9	55	56.1	1.00 (0.81-1.24)		0.9739
80 years and older	19	48.7	20	51.3	0.92 (0.66-1.27)		0.5922
<b>Educational level</b>							
Secondary or +	19	67.9	9	32.1	1		
Primary	88	46.3	102	53.7	1.67 (0.96-2.91)		0.0332
None/cannot read, cannot write	49	37.7	81	62.3	1.94 (1.11-3.38)		0.0034
<b>Marital status</b>							
Married/share home	95	45.9	112	54.1	1		
Single widow(er)/ divorced	61	42.7	82	57.3	1.06 (0.88-1.28)		0.5493
<b>Family organization</b>							
Live with someone	137	45.1	167	54.9	1		
Live alone	19	41.3	27	58.7	1.07 (0.82-1.39)		0.6324
<b>Family income</b>							
3 + minimum salary	12	52.2	11	47.8	1		
1-3 salaries	80	45.7	95	54.3	1.14 (0.73-1.78)		0.5592
Up to 1 salary	34	35.1	63	64.9	1.36 (0.86-2.13)		0.1288
<b>Home</b>							
Urban	131	46.1	153	53.9	1		
Rural	25	37.9	41	62.1	1.15 (0.93-1.43)		0.2246

\* The percentage calculations excluded absent or ignored responses.

**Table 4** - Types of medical and dental services used according to gender, Guarapuava, PR, 2010.

Healthcare services	Men		Women		Total	
	N	%*	N	%*	N	%
<b>Most frequently used medical service</b>						
Public institution	88	69.3	162	71.1	250	70.4
Healthcare plan	11	8.6	32	14.0	43	12.1
Private doctor	8	6.3	12	5.3	20	5.6
Others	1	0.8	1	0.4	2	0.6
No service used	19	15.0	21	9.2	40	11.3
<b>Dental services</b>						
Public institution	35	27.8	56	24.9	91	25.9
Healthcare plan	5	4.0	4	1.8	9	2.6
Private dentist	17	13.5	35	15.6	52	14.8
Others	-	-	4	1.7	4	1.1
No service used	69	54.8	126	56.0	195	55.6

\* The percentage calculations excluded absent or ignored responses.

## DISCUSSION

This study was based on a representative sample that comprised aged people living in Guarapuava. Other people who did not use the available healthcare services were identified in addition to the people who were approached at the PHUs. However, the core sample was composed of only elderly patients who sought treatment at the PHUs.

The aged population is a major component of healthcare service users, mainly public services, due to the increase in the prevalence of non-transmissible chronic diseases and physical disabilities<sup>(2)</sup>. In this study, 70.4% of the aged patients used the medical services that were provided by public institutions, and only 11.3% of the patients did not seek any healthcare services within the three months that preceded the interview.

Women used the medical services more frequently than men, and this finding is supported by other studies<sup>(3)</sup>. Studies that were conducted in several countries indicated that women regularly visited their doctor due to gynecological and obstetric factors. Additionally, women were more aware of health risks than men because they had more access to information. In Brazil, studies have indicated that women use healthcare services more frequently than men; this pattern remained even when the data were disaggregated due to the restriction or the lack of restriction to activities that were based on the healthcare status of the patient<sup>(7)</sup>.

In Brazil, the ratio between the proportional cost of admissions to public hospitals and the proportion of aged people among the Brazilian population progressively increases with age: 2.3, 2.4 and 4.3 among the age groups of 60-69 years, 70-79 years and  $\geq 80$  years, respectively<sup>(2)</sup>.

The annual hospital admission rate of aged people varies among countries: 10% in Japan, 14% in the United

Kingdom, 16% in Germany and 18% in the US and Canada. In this study, the rate of hospital admissions among aged people within the three-month period in Guarapuava was 8.4%, which is below the percentages that have been observed in other countries. Strategies can be adopted to decrease the number of admissions and readmissions, such as the creation of a geriatric care assessment unit, discharge planning, geriatric assessment, nutritional interventions, nursing interventions, geriatric counseling by doctors and gerontological interventions by other healthcare professionals who are part of a multiprofessional team<sup>(8)</sup>.

Differences have been observed among countries regarding the prevalence of doctor visits. The proportions of aged people who had not visited the doctor within the previous six months were 1% in Japan, 14% in Germany, 31% in Canada, 33% in the United Kingdom, and 40% in the US<sup>(2)</sup>. In this study, 50.1% of the aged subjects did not have any medical appointments within the three months before the interview. Overall, 11% of the aged people in the city had sought emergency services. This finding may be due to the risk factors that are associated with in the aged population or with a lack of resolution regarding the actions of the PHUs.

Elderly individuals who were 80 years of age or older represented 11.8% of the subjects who used medical services. This finding is in agreement with those in the literature, which indicate that individuals of advanced age are more likely to seek medical appointments and use medical services<sup>(9-10)</sup>.

Aged individuals who were divorced or separated and widowers used medical and dental services less frequently. However, aged widows used the services more frequently, which may be explained by the greater longevity of women or by their greater willingness to talk about their health problems and seek medical services, including services for less severe problems, compared with

men<sup>(11)</sup>. In contrast, a previous study demonstrated that separation or divorce caused both men and women to seek these services more frequently<sup>(10)</sup>.

The proportion of aged individuals with healthcare insurance plans who sought the services was small (12%). This percentage was similar to that found in the city of Bambuí, Minas Gerais where the proportion was 19.3%<sup>(12)</sup>. Healthcare insurance plans in Brazil cover approximately 5 million people who are 60 years of age or older and who represent 29.4% of the aged population<sup>(13)</sup>.

The clientele for healthcare insurance plans predominantly comprise people with higher incomes. Aged individuals with lower educational levels and family incomes that are lower than that of the general population often do not have healthcare insurance plans. This group has a different profile regarding the use of healthcare services with more frequent use of public services, which was observed in the aged population that was interviewed in Guarapuava.

The findings on the use of dental services by the aged population revealed a need to broaden public and private access to these services for this population. The study demonstrated that 54.3% of the interviewees had not utilized the dental services that were offered by the city, and only 3.6% of the individuals had visited the dentist within the three previous months. In Brazil, the variation in family income is directly correlated with access to healthcare services. The percentage of individuals who never visit the dentist is nine times higher among individuals who earn one minimum salary compared with individuals who earn over 20 Brazilian minimum salaries<sup>(14)</sup>.

The data that were extracted from the National Survey on Oral Health and the National Household Sample Survey indicate that the use of dental services in Brazil is low because the percentage of individuals who never visited the dentist is high<sup>(15)</sup>.

To increase the number of patients who use dental services, the combination of visits to the doctor and visits to the dentist could be an effective strategy for the aged population. Additionally, oral health programs that emphasize preventive actions and the maintenance of curative care could be conducted. Nurses and multiprofessional teams should both seek out information and be adequately trained on the materials, resources and orientation related to the oral health of the aged population<sup>(16)</sup>. In addition, these professionals should inform the population of the specialized services that are available at the Dental Specialization Center in Guarapuava. This center provides specialized care in many areas of dentistry, such as periodontics, minor oral bone and soft tissue surgery, endodontics, and diagnoses of oral cancer, for all age groups.

The public oral health services in Brazil have been historically characterized by predominantly curative and low-complexity care that is restricted to a subset of the general population. The vast majority of Brazilian cities provide

these services only to children 6-12 years of age at school. Adults and elderly people were granted access to only emergency services. Therefore, dentistry in Brazil is one of the most socially excluding areas of healthcare<sup>(17)</sup>.

The Final Report of the 3<sup>rd</sup> National Conference on Oral Health (CNSB7) revealed that oral health remains a feature of social exclusion. To change this perspective, qualified, competent professionals must offer more than assistance-based services. This area of health care requires intersectorial policies that are focused on healthcare promotion, the universalization of access, public responsibility and, most importantly, the commitment of the three spheres of government<sup>(18)</sup>.

The Ministry of Health has been working to improve the social exclusion scenario regarding oral health in Brazil. The Decree GM/MS 1444 from December 28, 2000 created the Oral Health Teams (OHTs), which were integrated into the Family Health Program (FHP). This action has intensified government efforts since 2002. The number of OHTs has tripled, and the covered population was doubled to 61.8 million people after the implementation of these teams. The amount of funding increased nine times, and R\$545 million was invested in oral health programs in 2006<sup>(17)</sup>.

When analyzing social differences, it is important to determine whether the use of medical and dental services is correlated with family income or educational levels. In this study, differences were observed in the dental services that were used according to the family income and educational level of the subjects who sought primary care services. Aged individuals with a lower income and lower educational levels used dental services less frequently.

The SUS (National Unified Health System) in Guarapuava is the only source of payment for the services that are used by the aged population compared with other payment alternatives, such as medical insurance and healthcare plans. This study demonstrated that individuals who were 60 years of age or older either use healthcare plans or directly pay for private care, especially in the area of dentistry. This finding may be the result of the comprehensive participation in healthcare plans that are financially covered by Brazilian companies, which encompass approximately 80% of the general population<sup>(13)</sup>. In addition, the choice of insurance plan is based on decisions regarding the source of healthcare for aged individuals, which depends on the needs and resources of their families and not only on the condition of the elderly person<sup>(19)</sup>.

The aged population presents distinct characteristics among cities and communities. Additionally, aged people have individual and specialized needs, and this group has differences according to gender, ethnic and cultural origin, location (rural or urban zones), and educational level. These differences are fundamental to healthcare conditions, life expectancy, quality of life and health in old age<sup>(20)</sup>.

## CONCLUSION

The recent National Health Policy guidelines indicate that the aged population is a priority for the SUS, and the norms and duties of the policy consider the health of aged individuals to be a grounding paradigm. However, such guidelines do not propose the means to diagnose and understand the pre-existing conditions and the physical, physiological and mental capacities of this group.

The SUS needs to be reorganized to meet the growing demand for the diagnostic and therapeutic procedures that are related to chronic diseases and for healthcare services that address the physical, mental and social rehabilitation of aged individuals. Healthcare indicators that can identify aged individuals who are at a high risk for functional losses, such as falls, difficulty in performing basic daily activities, and difficulty in accessing medical and dental services, and indicators that can account for the low socioeconomic profile of this age group should be made a priority. These policies must guide focused actions toward the promotion of health, disease prevention and rehabilitation.

This study revealed a low percentage of aged patients who sought treatment at the PHUs within the three months before the study onset. The PHUs offer dental and physiotherapy services; however, the most frequently used services were medical appointments and laboratory exams.

The study found that educational level and family income influenced the use of health services, especially dental care. Regarding the use of public and private healthcare services, the aged population uses public services more frequently. This finding is consistent with the profile of the interviewed population that comprised people who sought treatment at the PHUs.

Several restrictions to the development of this study must be considered because they may have influenced the results and the interpretations of the findings. Only

aged individuals who sought treatment at the PHUs were interviewed, and these individuals may not represent the age group in the city. Elderly people who resided in areas that were assisted by the FHS but were not enrolled in the public programs when the sample was constituted were not included in the study. The study was conducted in a city in the countryside of Paraná; however, the population in this area has demonstrated patterns in healthcare service use that are similar to those found throughout Brazilian cities by family healthcare teams.

Studies that analyze healthcare service use, such as this study, emphasize the need to develop care models that focus on the characteristics and demands of the aged population. These models should identify the individual demands of these patients, create new services, establish intersectorial networks and provide integrated care for chronic diseases.

In addition, this research enables us to understand the consumption patterns of healthcare services in a given population, thus reducing the costs that are associated with high-complexity services and specialties in favor of primary and secondary healthcare actions.

The findings of this study are essential to enhance our knowledge regarding the health characteristics of elderly people.

From the perspective of the healthcare professional, we highlight the relevance of their work in caring for the aged population, specifically in the primary care realm. When professionals are acquainted with aged individuals in the community and are aware of the determining factors of their healthcare service use, they can more appropriately address the multiple interfaces, peculiarities and differences in this patient population. This understanding can improve care management practices for aged individuals to preserve their independence and autonomy. The healthcare services that are provided to the aged population should be priority actions in the public policies that are aimed at this population.

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