Socio-demographic and health characteristics of elderly individuals: support for health services[1]

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This is a sectional epidemiological study including a household survey. It describes the socio-demographic and health conditions of elderly individuals residing in Guarapuava, PR, Brazil. The study's sample consisted of 359 elderly individuals enrolled in primary health care units in the city. Interviews were conducted from January to April 2010 using sections I and II of the Brazil Old Age Schedule questionnaire. The results revealed that most interviewees were women (64.3%), health self-perception was considered 'good' by 54.6%, and the most prevalent diseases were hypertension (34.9%), diabetes mellitus (12,4%) and arthritis/arthrosis (12.2%). Most elderly individuals use dental prostheses (74.4%) and 56.5% wear glasses or contact lenses. The conclusion is that knowledge concerning the social, demographic, and health profiles of these individuals favors the implementation of actions specific to this age group by health providers, and helps managers to develop health indicators.

Descriptors: Aged; Public Health Nursing; Epidemiology; Health of the Elderly.

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Características sociodemográficas e de saúde de idosos: contribuições para os serviços de saúde

Trata-se de estudo epidemiológico seccional com inquérito domiciliar, com o objetivo de descrever as características sociodemográficas e as condições de saúde de idosos do município de Guarapuava, PR, Brasil. A amostra do estudo foi composta por 359 idosos inscritos nas UBSs do município. As entrevistas foram realizadas de janeiro a abril de 2010, utilizando-se a seção I e II do questionário *Brazil Old Age Schedule* - BOAS. Os resultados demonstraram que o sexo feminino foi prevalente (64,3%), a autopercepção de saúde foi boa para 54,6% dos idosos, as doenças mais relatadas foram hipertensão (34,9%), diabetes mellitus (12,4%) e artrite/artrose (12,2%). A maioria dos idosos utiliza prótese dentária (74,4%), 56,5% óculos ou lente de contato. Conclui-se que o conhecimento do perfil sociodemográfico e de saúde desses idosos favorece a implantação de ações específicas para essa faixa etária pelos profissionais de saúde que trabalham nesse município, além de auxiliar os gestores para formular indicadores de saúde.

Descritores: Idoso; Enfermagem em Saúde Pública; Epidemiologia; Saúde do Idoso.

Características sociodemográficas y de salud de ancianos: contribuciones para los servicios de salud

Se trata de un estudio epidemiológico seccional con encuesta domiciliar con el objetivo de describir las características sociodemográficas y las condiciones de salud de ancianos del municipio de Guarapuava, PR, Brasil. La muestra del estudio fue compuesta por 359 ancianos inscritos en las UBS del municipio. Las entrevistas fueron realizadas de enero a abril de 2010 utilizando la sección I y II del cuestionario *Brasil Old Age Schedule* - BOAS. Los resultados demostraron que el sexo femenino fue prevalente (64,3%), la autopercepción de salud fue buena para 54,6% de los ancianos; las enfermedades más relatadas fueron hipertensión (34,9%), diabetes mellitus (12,4%) y artritis/artrosis (12,2%). La mayoría de los ancianos utiliza prótesis dentaria (74,4%), 56,5% lentes o lente de contacto. Se concluye que el conocimiento del perfil sociodemográfico y de salud de estos ancianos favorece la implantación de acciones específicas, para este intervalo etario, por los profesionales de salud que trabajan en este municipio, además de auxiliar a los gestores para formular indicadores de salud.

Descriptores: Anciano; Enfermería en Salud Pública; Epidemiología; Salud del Anciano.

Introduction

Brazil has experienced important changes in its demographic profile and in its population's age structure with increased life expectancy accentuating the aging process. The advancement of technologies in the health field, greater attention to primary health care, development of public health policies directed to elderly individuals, and the new paradigm of health promotion, among other factors, have contributed to individuals achieving increasingly older ages with health[1].

A total of 697,000 individuals turned 60 years old between 2008 and 2009, which represents an increase of 3.3%; the total Brazilian population increased 1% in the same period. In 2009, 11.3% of the Brazilian population was 60 years old or older in comparison to 11.1% in 2008 and 9.7% in 2004[2].

Guaranteed access to quality health services for the elderly population is a new challenge for those planning health care delivery. Knowledge concerning the needs of elderly individuals, especially those living in their community, as well as the factors that determine the use of health services and social conditions, are important to support the planning of health care provided to this age group[3].

Studies addressing multidimensional knowledge concerning elderly individuals living in the community and using health services are extremely important. The study allows the detection of health problems, such as disorders that interfere in these individuals' autonomy and also make them more dependent on others to perform daily tasks. The design of appropriate actions requires one to recognize social, economic, and emotional factors that influence elderly individuals' perceptions and how they search for health services[4].

Because elderly individuals have specific characteristics, health care directed to this population requires careful assessment on the part of health providers as well as epidemiological studies designed to analyze the health and epidemiological profile of this age group in order to facilitate the identification of problems underlying their main complaints, which implies integral care. Such actions facilitate planning specific care for elderly individuals with their particularities and support the implementation of public policies intended for seniors. Hence, this study describes the socio-demographic and health characteristics of elderly individuals in the city of Guarapuava, RS, Brazil.

Method

This is an epidemiological sectional study including a household survey that addressed the socio-demographic and health conditions of elderly individuals registered in Primary Health Care (PHC) units residing in the city of Guarapuava, RS, Brazil with an estimated population of 172,128 inhabitants and 14,981 elderly individuals[5].

A list provided by the nurse responsible for all 30 PHC units in the city was used in sampling. The 359 interviewed individuals were selected among 5,508 60 years old or older individuals registered on 'forms A' from the Family Health Strategy (FHS). Forms A are registration forms used in following-up families in the Primary Care Information System.

The sample was computed through stratified proportional sampling considering the number of elderly individuals in each of the 30 PHC units in the city through the following equation:

$$n0 = \frac{(Z \, \alpha \, / \, 2)^2}{4 \, d^2}$$

Where: $z \, \alpha \, / \, 2 = z \, 0.025 = 1.96$; confidence level= 95%; $n=(N.n0)/(N+n0)$; d=margin of error. The 359 elderly individuals were selected through a simple and random draw, proportional to the total number of individuals registered in each PHC unit.

Information was obtained through questionnaires applied by interviewers to elderly individuals residing in the selected households or to the caregivers when the individuals presented an impairment compromising communication. Thirteen refused to participate in the study and a new individual was randomly drawn for each refusal.

A total of 11 interviewers were selected: undergraduate students or professionals with a bachelor's degree who were trained in four meetings of four hours each. The interviewers received information concerning the study's objective, the importance and the role of the interviewers, concepts used, structure of questions, ethical aspects and ways to approach the interviewees in their households. Among the main difficulties mentioned during data collection were: outdated addresses, difficulty locating streets, and difficulty accessing certain streets and regions of the city. Data collection began January 23rd 2010 and ended on April 4th 2010.

The Brazil Old Age Schedule[6] (BOAS) questionnaire was used to collect data. It is a multidimensional tool that covers various dimensions of elderly individuals' lives such as physical and mental aspects, daily tasks, and social and economic conditions.

BOAS is divided into nine sections and two were used in this study (I and II). The analyzed variables were: gender, educational level, marital status, family arrangements, paid job, family income, residence, main health problems, types of devices used, characteristics of oral health and health self-perception.

Interviews took an average of 47 minutes (minimum of 20 and maximum of 185 minutes). Data were directly coded in the questionnaires and stored in an Excel spreadsheet, which were then analyzed through the statistical program Estatistica. Double entry was used to check for inconsistencies later. Data were analyzed using simple frequency through the Chi-square test and Fischer's exact test.

The research project was approved by the Ethics Committee for Research Involving Human Subjects at the State University of Maringá in accordance with resolution 196/96, National Council of Health (Protocol 492/2009).

Results

Of the 359 interviewed individuals 64.4% were women and 35.6% were men with an average age of 68.8 ± 9.09 years, varying from 60 to 98 years old. In relation to monthly family income (per capita), the minimum income was USD 69.48 and the maximum

was R$ 6.567.00. In relation to state of origin, 91.4% of men and 92% of women were born in the state of Paraná, Brazil.

In relation to educational level, 21.4% were illiterate. Younger individuals, from 60 to 69 years old, were more educated and the 80 years old or older individuals had at most completed primary school (5% of the total) (Table 1). The results concerning marital status indicate that 57.7% were married or cohabited and 34.5% were widowed. Of the total of elderly individuals, 86.4% live with a family member or caregiver, mainly in multigenerational homes: with a spouse and/or children and/or children-in-law, or with grandchildren.

A total of 56.9% of individuals in the job market were 70 to 79 years old; these individuals were already retired but kept a paid job. A total of 71.3% received up to one times the minimum wage (Table 1).

Table 1 – Distribution of elderly individuals according to age and socio-demographic variables. Guarapuava, PR, Brazil, 2010

Variables	Idade							
	60-69		70-79		80 or older		Total	
	N	%*	N	%*	N	%*	N	%*
Gender								
Male	72	56.2	44	34.4	12	9.4	128	35.6
Female	145	62.8	58	25.1	28	12.1	231	64.4
Educational level								
None	31	14.3	23	22.5	8	20.0	62	17.3
Primary school	129	59.4	46	45.1	19	47.5	194	54.0
Middle School	13	6.0	4	3.9	2	5.0	19	5.3
High school	3	1.4	3	2.9	-	-	6	1.7
Bachelor's degree	3	1.4	-	-	-	-	3	0.8
Do not know how to read or write	38	17.5	26	25.5	11	27.5	75	20.9
Marital Status								
Married/cohabitating	144	66.4	50	49.0	13	32.5	207	57.7
Widowed	53	24.4	46	45.1	25	62.5	124	34.5
Divorced/separated	16	7.4	4	3.9	-	-	20	5.6
Never married	4	1.8	2	2.0	2	5.0	8	2.2
Family arrangement								
Lives alone	24	11.1	14	13.7	11	27.5	49	13.6
Lives with someone	193	88.9	88	86.3	29	72.5	310	86.4
Paid job								
Retired and paid job	44	20.3	58	56.9	3	7.5	105	29.2
Retired	173	79.7	44	43.1	37	92.5	254	70.8
Per capita income								
0 to 1 one times the minimum wage†	163	75.1	70	68.6	23	57.5	256	71.3
1 to 3 times†	50	23.0	32	31.4	17	42.5	99	27.6
More than 3 times†	4	1.8	-	-	-	-	4	1.1
Residence								
Rural area	64	29.5	17	16.7	9	22.5	90	25.1
Urban area	153	70.5	85	83.3	31	77.5	269	74.9

* Percentage computed excluding unanswered or ignored variables.
† Minimum wage at the time of the study USD 322.17/mo.

Table 2 shows the distribution of health problems reported by the elderly individuals, expressed as frequency in relation to the total number of reported diseases; the same individual may present more than one health problem. Of the 359 elderly individuals, 11.6% (63) reported no disease; 17.2% of which were men and 9% were women. Hypertension was the most frequently reported disease with 34.9% (30.5% men and 37.1% women), followed by diabetes with 12.4% and arthritis/arthrosis with 12.2%.

Table 2 – Distribution of elderly individuals according to gender and main reported health problems. Guarapuava, PR, Brazil, 2010

Health Problems	Male		Female		Total	
	N*	%	N*	%	N*	%
Arterial hypertension	53	30.5	136	37.1	189	34.9
Diabetes mellitus	28	16.1	39	10.6	67	12.4
Arthritis/arthrosis	16	9.2	50	13.6	66	12.2
Heart disease	15	8.6	32	8.7	47	8.7
Asthma/bronchitis	8	4.6	22	6.0	30	5.5
Depression	4	2.3	17	4.7	21	3.9
Gastritis	5	2.9	14	3.8	19	3.5
Cholesterol	3	1.7	13	3.5	16	3.0
Cancer	6	3.4	6	1.6	12	2.2
Kidney diseases	6	3.4	5	1.4	11	2.0
No disease	30	17.2	33	9.0	63	11.6

*Reported more than one health problem.

Another aspect related to how the interviewed elderly individuals perceived their health concerns the type of prostheses or aid devices they used. Of these, 56.5% use glasses or contact lenses (51.6% men and 59.3% women); 74.4% use dentures, artificial teeth or fixed bridges (60.2% men and 82.3% women) and 3.6% a hearing aid (Table 3).

Table 3 – Distribution of elderly individuals according to gender and type of aids used. Guarapuava, PR, Brazil, 2010

Device	Male		Female		Total		p value
	N*	%†	N*	%†	N*	%†	
Glasses or contact lenses	66	51.6	137	59.3	203	56.5	0.4516
False teeth, dentures or fixed bridges	77	60.2	190	82.3	267	74.4	0.0723
Cane	4	3.1	6	2.6	10	2.8	0.7773
Wheelchair	3	2.3	1	0.4	4	1.1	0.1032
Crutch	-	-	2	0.9	2	0.6	0.2932
Hearing device	8	6.3	5	2.2	13	3.6	0.0569

*Reported more than one health problem.
† Percentages were computed not taking into account the unanswered or ignored variables.

Concerning the characteristics of the elderly individuals' oral health, we observed that 37.5% of them needed to replace their prosthesis; 73.5% reported they lacked most of their teeth (66.2% men and 77.5% women); and 68.5% reported no problems hindering mastication (Table 4).

Table 4 – Distribution of elderly individuals according to gender and oral health characteristics. Guarapuava, PR, Brazil, 2010

Variables	Male		Female		Total	
	N	%*	N	%*	N	%*
Use a prosthetic device						
Yes	77	60.2	190	82.3	267	74.4
No	51	39.8	41	17.7	92	25.6
Need to replace the prosthesis						
Yes	38	29.7	96	41.9	134	37.5
No	90	70.3	133	58.1	223	62.5

(continue...)

Table 4 – (continuation)

Variables	Male		Female		Total	
	N	%*	N	%*	N	%*
Lack teeth						
No	13	10.2	21	9.1	34	9.5
Not many	30	23.6	31	13.4	61	17.0
Most	84	66.2	179	77.5	263	73.5
Some dental problem hindering mastication						
Yes	40	31.5	72	31.4	112	31.5
No	87	68.5	157	68.6	244	68.5

*Percentages were computed not taking into account the unanswered or ignored variables.

Current self-perception of health was considered 'good' by 54.8% and 'poor' by 31.7% of the elderly individuals. Compared to the last five years, 38.6% of the individuals perceived their health to be 'worse', 32.1% to be 'better' and 29.3% considered it to have improved. When they compared themselves to people they knew or who were the same age, 46.9% believed themselves to be in better health; 29.3% considered themselves to be in an equal condition; and 38.6% in worse condition (Table 5).

Table 5 – Distribution of elderly individuals according to gender and health perception. Guarapuava, PR, Brazil, 2010

Health perception	Male		Female		Total		P-value
	N	%*	N	%*	N	%*	
Current health Perception							
Great	12	9.4	10	4.4	22	6.2	-
Good	72	56.3	124	54.1	196	54.8	0.1036
Poor	38	29.7	75	32.8	113	31.7	0.0630
Very poor	6	4.6	20	8.7	26	7.3	0.0248
Compared to the last five years							
Better	36	28.3	77	34.2	113	32.1	-
About the same	42	33.1	61	27.1	103	29.3	0.1729
Worse	49	38.6	87	38.7	136	38.6	0.4895
Compared to people the same age							
Better	64	50.4	102	44.9	166	46.9	-
About the same	38	29.9	84	37.0	122	34.5	0.1940
Worse	25	19.7	41	18.1	66	18.6	0.9239
Satisfaction with life							
Satisfied	104	82.5	193	83.9	297	83.4	-
Dissatisfied	22	17.5	37	16.1	59	16.6	0.7389
Perception of visual acuity					359		
Great	9	7.0	10	4.3	19	5.3	-
Good	60	46.9	102	44.2	162	45.1	0.3803
Poor	52	40.6	89	38.5	141	39.3	0.3768
Very poor	7	5.5	30	13.0	37	10.3	0.0256
Perception of auditory acuity							
Great	29	22.8	57	24.7	86	24.0	-
Good	57	44.9	117	50.6	174	48.6	0.8766
Poor	39	30.7	51	22.1	90	25.2	0.1904
Very poor	2	1.6	6	2.6	8	2.2	0.6157
Perception of oral health							
Great	8	6.7	21	9.1	29	8.3	-
Good	38	31.7	31	13.4	69	19.7	0.0128
Poor	50	41.6	179	77.5	229	65.2	0.4845
Very poor	24	20.0	-	-	24	6.8	-

*Percentages were computed not taking into account the unanswered or ignored variables.

In relation to the level of satisfaction with life, 82.7% of the elderly individuals reported satisfaction and 16.4% dissatisfaction (Table 5). In relation to their perception concerning visual acuity (with or without glasses), 50.4% considered it to be 'good' and 'great', while 49.6% considered it either 'poor' or 'very poor' (*p*=0.025). Hearing was considered 'good' by 48.6% (44.9% men and 50.6% women) and 24% considered it 'great'. Oral health was considered 'poor' by 65.2% of the studied individuals (41.6% men and 77.5% women).

Discussion

Among the study's, results the greater percentage of women (64.4%) stands out. It may be related to the greater life expectancy of women in relation to men and confirms the view related to the feminization of aging, which has been attributed to less exposure on the part of women to certain risk factors compared to men, such as those found in the work environment, a lower prevalence of smoking and alcohol consumption, differences related to attitude in the face of diseases and disabilities, and greater coverage of gynecology-obstetric care[7-8].

We observed that 21.6% of the elderly women do not know how to read and write while 21.2% are literate, though have no formal education; only one man (1.4%), among those 60 to 69 years old had a bachelor's degree. This context shows how low levels of education influence the lives of elderly individuals at this point of life and why so many public initiatives and non-governmental actions are designed to encourage literacy and the continuing education of adults and elderly individuals. Education influences social and economic life and also the search for health services[9]. Data from the National Household Sample Survey (PNAD) reveal that 9.4% of 60 to 64 years old Brazilian individuals are illiterate and this percentage reaches 29.4% of those 65 years old or older[2].

Widowed women predominated (43.7%), which may be explained by the fact that elderly women were also the majority of participants in this study, due to their greater life expectancy. Another explanation is that widowed men usually find another partner, especially in advanced age[10]. Most women, once they became widowed, live by themselves, as seen in a study conducted in Korean communities, which reported 10 widowed men and 87 widowed women out of 97 elderly individuals living in 32 rural communities. The deaths of their husbands was the reason these women lived alone, which is a phenomenon with characteristics common to other communities from different countries[11].

A total of 32.5% of women and 23.4% of men still have a paid job in addition to their retirement. Having an income reflects a positive and relevant aspect of active aging. It contributes to the family income and the elderly individual has financial autonomy in relation to health, social and eating needs[12].

Hypertension, diabetes and arthritis/arthrosis were the most common diseases, which confirms observations from previous studies addressing the elderly population[13-14]. The frequency of self reported hypertension was 30.5% among men and 37.1% among women and represented 34.9% of the total of reported diseases. Epidemiological studies have shown not only increased prevalence of hypertension as people age, but also that its occurrence is associated with other risk factors such as lifestyle and eating habits, all of these independently associated with an increased risk of heart disease. Such a fact corroborates this study's results, which show that 8.7% of the elderly individuals reported heart disease[15].

Despite the large literature reporting the benefits of controlling diabetes, American population surveys report an increase in the prevalence of diabetes and a decline in glycemic control in this population from 1988 to 2000[16]. Arthritis or arthrosis is the main cause of impairment in the American population and its prevalence is expected to increase with population aging[17].

In Brazil, despite its high prevalence among the elderly population, arthritis is not one of the priorities of public health. Its inclusion in the public health agenda is recommended in order to improve the diagnosis and implementation of educational programs emphasizing self-care intended to prevent impairment[18].

In relation to the use of an aid device, this study revealed a large number of elderly individuals using glasses (56.5%) and dental prostheses (74.4%). Devices used to help people with some level of dependency, whether it is oral, visual, or auditory or concerning mobility are important to ensure one's autonomy and independence. The prescription of appropriate devices to aid elderly individuals who experience some level of dependency is essential to promoting and preserving their functional capacity[19].

Health self-perception is a strong indicator concerning the health of elderly individuals because it consistently predicts the survival of this population[13]. Studies show that a 'good' health self-perception is one of the most reported indicators[20-21]. In Guarapuava, 54.6% of the interviewees reported 'good' health and 31.5% reported 'poor' health. In the context of health,

'poor' self-perception increases the risk of mortality, while at the same time interfering with one's satisfaction with life and subjective wellbeing[22]. The elderly individuals health self-perception should be acknowledged by clinicians to help the implementation of individual actions intended to promote their health condition.

Oral health was considered 'good' by 37.3% of the participants and 'poor' by 34%. Oral health perception can be influenced by personal values such as the belief that some pain and impairment is inevitable with age, which explains a similar prevalence of both 'good' and 'poor' oral health. The use of some prosthesis was reported by 76% of the interviewees, information that corroborates other studies' results[21,23-24] and suggests that lost teeth were replaced in most cases. Health perception, understood as a subjective and particular aspect of individuals and its relation to other daily aspects, deserves to be deeply investigated as well as the way these relations can guide behavior and attitudes, particularly in the senior population[21].

The studies' findings related to oral health also suggest that currently there is a lack of public health policies related to oral health accessible to this age group. There is a lack of information for this population concerning the benefits of oral rehabilitation, oral hygiene, and the importance of periodic visits to the dentist[24].

Conclusion

Collecting information from the elderly population living in the community in order to investigate socio-economic aspects and their individual health perception is essential for public managers because it aids the implementation of strategies and public actions that improve these individuals' physical, mental and social wellbeing. These should be based not only on these individuals' rights but also on their real needs and risk factors, such as the implementation of projects to construct Day hospitals, specific hospital facilities, geriatric units with appropriate structure and installations and qualified professionals.

Even though health self-perception, visual and auditory acuity were considered to be 'good' by the interviewees, who also reported being satisfied with their lives, the city has some challenges concerning health care provided to individuals older than 60 years old. These challenges are related to the high prevalence of chronic diseases and the use of medication, which are important indicators that require constant quality care. The profile of physical and oral health found in this study related to family income and educational level draw our attention because these factors can influence the disease process, posing difficulties in accessing the health services, deficits in self-care and hindering treatment adherence.

In relation to such data, we verify the need for health professionals, especially nurses, to become better qualified and prepared to work in the context of health promotion, prevention and the rehabilitation of degenerative chronic diseases and also devise and structure preventive actions in social, cognitive and physical activities. An example of such activities are groups composed of elderly individuals that encourage a healthier social life with the implementation of recreational, physical and cultural activities aimed to enable them to change behavior and habits in the face of situations that pose a risk to their health such as hypertension, diabetes or those related to oral health.

This profile is also an essential component in the identification of the social, demographic and specific health characteristics of this population. Such information is not found in other data sources and is very important for public health plan actions directed to seniors. These are real and specific data that can be used in planning by health providers and managers to provide integral care to elderly individuals.

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