





Health services access and use by older adults, by health micro-regions

Acesso e utilização dos serviços de saúde por idosos segundo microrregionais de saúde

Acceso y uso de servicios de salud por adultos mayores, según microrregiones de salud

Thaislane Milene Oliveira¹ ; Pollyana Cristina dos Santos Ferreir¹ ;
Nayara Gomes Nunes Oliveira¹ ; Darlene Mara dos Santos Tavares¹ 

¹Universidade Federal do Triângulo Mineiro, Uberaba, MG, Brazil

ABSTRACT

Objective: to describe and compare the older adults' sociodemographic and clinical characteristics, and their access to, and use of, health services, by three health micro-regions in Minas Gerais. **Method:** this cross-sectional household survey interviewed 1,635 older adults living in the Health Micro-regions of the Southern Triangle of Minas Gerais. Descriptive analyses and chi-square test were performed ($p < 0.05$). **Results:** comparisons among the groups revealed significant differences by age group ($p < 0.001$), number of morbidities ($p < 0.001$), continuous medication use ($p < 0.001$) and no dental appointment in the prior year ($p = 0.005$). **Conclusion:** in the context of health care territorialization and regionalization, public policies should consider older adults' sociodemographic characteristics and clinical conditions, in order to propose action strategies to favor service access and use by this population.

Descriptors: Unified Health System; Health Services Accessibility; Aged; Health Services for the Aged.

RESUMO

Objetivo: descrever e comparar as características sociodemográficas e clínicas dos idosos, e o acesso e a utilização dos serviços de saúde, segundo três microrregionais de saúde de Minas Gerais. **Método:** inquérito domiciliar transversal realizado com 1.635 idosos residentes nas Microrregionais de Saúde do Triângulo Sul, em Minas Gerais. Procederam-se às análises descritivas e teste *qui-quadrado* ($p < 0,05$). **Resultados:** na comparação entre os grupos obteve-se diferença significativa em relação à faixa etária ($p < 0,001$), número de morbidades ($p < 0,001$), uso contínuo de medicamentos ($p < 0,001$) e não realizar consulta com dentista no último ano ($p = 0,005$). **Conclusão:** as políticas públicas devem considerar os fatores sociodemográficos e as condições clínicas dos idosos, mediante o contexto da territorialização e regionalização em saúde, para proposição de estratégias de ação que favoreçam o acesso e uso dos serviços por essa população.

Descritores: Sistema Único de Saúde; Acesso aos Serviços de Saúde; Idoso; Serviços de Saúde para Idosos.

RESUMEN

Objetivo: describir y comparar las características sociodemográficas y clínicas de los adultos mayores y su acceso y uso de los servicios de salud por parte de tres microrregiones de salud en Minas Gerais. **Método:** esta encuesta de hogares de corte transversal entrevistó a 1.635 adultos mayores residentes en las Microrregiones de Salud del Triángulo Sur de Minas Gerais. Se realizaron análisis descriptivos y prueba de *chi-cuadrado* ($p < 0.05$). **Resultados:** las comparaciones entre los grupos revelaron diferencias significativas por grupo de edad ($p < 0,001$), número de morbilidades ($p < 0,001$), uso continuo de medicación ($p < 0,001$) y ausencia de consulta dental en el año anterior ($p = 0,005$). **Conclusión:** en el contexto de territorialización y regionalización asistencial, las políticas públicas deben considerar las características sociodemográficas y las condiciones clínicas de los adultos mayores, con el fin de proponer estrategias de acción que favorezcan el acceso y uso de los servicios por parte de esta población.

Descritores: Sistema Único de Salud; Accesibilidad a los Servicios de Salud; Anciano; Servicios de Salud para Ancianos.

INTRODUCTION

The process of population aging has been accelerating in several countries, including Brazil¹. This change in the demographic profile reflects in new demands to be faced by the health care sector, since aging usually leads to a greater number of morbidities and functional disabilities, as well as to the need for more specialized and more expensive services².

Access to health services has an influence on demographic dynamics, with positive impacts on mortality and life expectancy, and may be considered a key determinant of quality of life and socioeconomic development³. Furthermore, the use of these services is multi-causal and is related to individual and structural factors, as well as to social environmental aspects, which play a major role in the demand for health services^{4,5}.

Acknowledgment to the Minas Gerais State Research Support Foundation (FAPEMIG), APQ #0189417, and to the National Council of Scientific and Technological Development (CNPq), APQ #407978/2016-0, for financial support.

Corresponding author: Pollyana Cristina dos Santos Ferreira. E-mail: pollyana.ferreira@uftm.edu.br

Responsible Editor: Cintia Fassarella

A research study based on data from the 2013 National Health Survey found that people living in the South and Southeast regions have greater access to health services⁵. A review of the literature on the older adult population showed that the association between socioeconomic factors and use of and access to health services varied according to the countries and to the type of service used. This review also identified that individuals with lower income and schooling presented the lowest use and the highest number of access problems; moreover, this inequality was lower in countries having a universal health system⁶.

In this context, it is essential to conduct population-based studies addressing sociodemographic and clinical characteristics of older adults, in addition to their access to and use of health services, since they can provide data that may be used to design health care strategies targeted at this population⁵.

Therefore, considering that nationwide research studies on this theme were conducted in specific cities and that findings from these surveys may contribute to the planning of health actions⁷, the present study aimed to describe and compare the sociodemographic and clinical characteristics of older adults, and their access to and use of health services in three health micro-regions in the state of Minas Gerais, Brazil.

METHOD

This household, cross-sectional, and analytical survey was developed in the urban area of a health macro-region in the state of Minas Gerais, Brazil, consisting of three health micro-regions that include 27 municipalities, of which 08 belong to micro-region I, 11 to micro-region II, and 08 to micro-region III.

The study population was selected by multiple-stage cluster sampling and consisted of older adults living in the urban area of the aforementioned health macro-region. Sample size calculation considered a 25.0% prevalence⁵ of use of the health services in the last weeks prior to the interview, with an accuracy of 1.5% and a 95% confidence interval, for a finite population of 75,726 individuals over 60 years of age living in the urban area of the health macro-region, yielding a sample of 1,659 older adults.

Sample selection was made using a multi-stage cluster technique. The first stage considered the arbitrary draw of 50% of the census sectors of each municipality of the health macro-region, through systematic sampling. The number of households to be selected in each municipality was calculated based on the total number of older adults living in the 27 municipalities of the health macro-region. Subsequently, the number of households was divided by the number of census sectors, obtaining a similar number of older adults to be interviewed within each census sector. Finally, the first household was randomly selected within each census sector, and the remaining households were selected in a standardized direction until saturation of the sample. It is emphasized that one older adult per household was recruited. If there was more than one older adult living in the household, the interview was conducted with the one who made the first contact with the interviewer.

The inclusion criteria were as follows: being 60 years old or older and living in the urban area of health micro-regions in Triângulo Sul. Older adults with cognitive decline and communication problems, such as deafness not corrected by hearing aids and several speech disorders, were excluded.

A total of 1,659 older adults were interviewed from March 2017 to June 2018, of which 24 presented with cognitive decline. Thus, the sample consisted of 1,635 older adults, of which 347 lived in micro-region I, 326 in micro-region II, and 962 in micro-region III.

Cognitive decline, an exclusion criterion, was assessed by the Mini Mental Status Examination (MEEM)⁸. Sociodemographic data, number of morbidities, and occurrence of hospitalization in the last 12 months were obtained by administering a structured questionnaire elaborated by the Research Group in Collective Health of the Federal University of Triângulo Mineiro (*Universidade Federal do Triângulo Mineiro, UFTM*).

Depressive symptoms were investigated using the Brazilian version of the Geriatric Depression Scale short form⁹ (GDS-15), with scores ranging from zero to 15 points and scores above five being considered indicative of depressive symptoms.

The access to and use of health services were assessed by two sections of the questionnaire of the National Household Sample Survey¹⁰. The questions addressed access to and use of health services in the three care levels¹⁰ and are widely used in the scientific literature^{3,5-7}.

The following sociodemographic variables were included in the study: gender (female; male), age group (60-70 years old; 70-80 years old; 80 years old or older); marital status (single; lives with a partner; widowed; separated/divorced); schooling in years of study (none; 1-5; 5 or more), and individual monthly income in minimum wages (no income; ≤1; >1).

The following health variables were included: number of morbidities (0-5; 5 or more); hospitalization in the last 12 months (yes; no); and sign of depressive symptoms (yes; no).

In terms of access to health services, the following variables were considered: attendance to the same health care facility (yes; no); medical consultation in the last 12 months (yes; no); medications of continuous use (yes; no); and dental consultation in the last year (yes; no).

With regard to the use of health services, the following variables were included: treatment related to own health in the last two weeks (yes; no); nature of the service (public; private); and satisfaction with the service (positive; negative).

The interviews were conducted by ten interviewers, who underwent training and qualification on how to manage research ethical issues and were accompanied by field supervisors.

An electronic database was built using the Excel® software and data was entered through double typing. Inconsistencies between the two databases were verified and corrected, when necessary. After this procedure, the database was imported for analysis to the Statistical Package for Social Sciences (SPSS®) software, version 22.0.

The following analyses were performed: descriptive, expressed as absolute and relative frequencies; and bivariate, by using the chi-square test ($p < 0.05$).

The project was approved by the Committee of Ethics in Research with Human Beings of UFTM, opinion No. 493,211. The interview was conducted, after the consent of the older adults and the signing of the Free and Informed Consent Form.

RESULTS

In the three health micro-regions, there was predominance of women, of individuals living with partner, with 1-5 years of schooling, and with a monthly income ≤ 1 minimum wage (Table 1). A comparison between the groups revealed a significant difference in terms of age group ($p < 0.001$), since there was a greater proportion of older adults aged 60-70 years old living in health micro-regions I and II, while those aged 70-80 years old predominated in micro-region III (Table 1).

TABLE 1: Distribution of the sociodemographic variables of the older adults, according to the three health micro-regions (n=347). Minas Gerais, Brazil, 2018.

Variables	Health micro-regions						p*
	I		II		III		
	n	%	n	%	n	%	
Gender							
Female	222	64.0	212	65.0	644	66.9	0.564
Male	125	36.0	114	35.0	318	33.1	
Age group (in years old)							
60-70	186	53.6	143	43.9	359	37.3	<0.001
70-80	101	29.1	128	39.3	398	41.4	
80 or more	60	17.3	55	16.8	205	21.3	
Marital status							
Single	23	6.6	23	7.1	66	6.9	0.790
Lives with a partner	163	47.0	147	45.1	410	42.6	
Widow/Widower	129	37.2	118	36.2	378	39.3	
Separated/Divorced	32	9.2	38	11.6	108	11.2	
Schooling (years of study)							
None	62	17.9	83	25.5	171	17.8	0.120
1-5	185	53.3	169	51.8	501	52.1	
5 or more	100	28.8	74	22.7	290	30.1	
Individual monthly income							
No income	15	4.4	24	7.4	53	5.5	0.092
≤ 1 minimum wage	191	55.0	188	57.6	499	51.9	
> 1 minimum wage	141	40.6	114	35.0	410	42.6	

Note: *Chi-square ($p < 0.05$).

There was a lower proportion of older adults with five or more morbidities in micro-region I, compared with micro-regions II and III ($p < 0.001$). In the three groups, there was predominance of individuals with no signs of depressive symptoms and who were not hospitalized in the last 12 months (Table 2).

TABLE 2. Distribution of the health variables, according to the three health micro-regions (n=347). Minas Gerais, Brazil, 2018.

Variables	Health micro-regions						p*
	I		II		III		
	n	%	n	%	n	%	
Number of morbidities							
None	12	3.5	4	1.2	13	1.4	<0.001
1-5	160	46.1	107	32.8	293	30.5	
5 or more	175	50.4	215	66.0	656	68.2	
Sign of depressive symptoms							
Yes	75	21.6	68	20.9	228	23.7	0.494
No	272	78.4	258	79.1	734	76.3	
Hospitalization (last 12 months)							
Yes	42	12.1	56	17.2	165	17.2	0.075
No	305	87.9	270	82.8	797	82.8	

Note: *Chi-square ($p < 0.05$).

With regard to access to health services, in the three micro-regions there was a higher percentage of older adults who sought the same health care facility and attended to a medical consultation in the last 12 months (Table 3). A statistically significant difference was found in relation to the use of medications of continuous use ($p < 0.001$), with a greater proportion of older adults in micro-region III, compared with micro-regions I and II (Table 3). In the three health micro-regions, there was predominance of older adults who did not attend a dental consultation in the last year, with a lower proportion in micro-region II compared to micro-regions I and III ($p = 0.005$) (Table 3).

TABLE 3: Access to and use of health services by older adults, according to the three health micro-regions (n=347). Minas Gerais, Brazil, 2018.

Variables	Microrregionais de saúde						p*
	I		II		III		
	n	%	n	%	n	%	
Attendance to the same health care facility							
Yes	291	83.9	265	81.3	813	84.5	0.394
No	56	16.1	61	18.7	149	15.5	
Medical consultation in the last 12 months							
Yes	295	85.0	281	86.2	853	88.7	0.163
No	52	15.0	45	13.8	109	11.3	
Medications of continuous use							
Yes	293	84.4	272	83.4	874	90.9	<0.001
No	54	15.6	54	16.6	88	9.1	
Dental consultation in the last year							
Yes	75	21.6	95	29.1	198	20.6	0.005
No	272	78.4	231	70.9	764	79.4	
Treatment related to own health in the last two weeks							
Yes	62	17.9	70	21.5	199	20.7	0.442
No	285	82.1	256	78.5	763	79.3	
Nature of the service							
Public	38	61.3	56	80.0	189	61.3	0.079
Private	24	38.7	14	20.0	77	38.7	
Satisfaction with the health service							
Positive	57	91.9	66	94.3	183	92.0	0.872
Negative	5	8.1	4	5.7	16	8.0	

Note: *Chi-square ($p < 0.05$).

With regard to the use of health services, most of the adults of the three health micro-regions did not seek for treatment related to their own health in the two last weeks, used public health services, and were satisfied with the health service (Table 3).

DISCUSSION

In the present research study, the characteristics related to the following variables were similar in the three health micro-regions: gender, marital status, schooling, income, hospitalization, sign of depressive symptoms, attendance to the same health care facility, medical consultation in the last 12 months, and use of health services. There were differences in the number of morbidities, with a lower proportion in micro-region I; in dental consultation in the last year, with a lower proportion in micro-region II; and in age group and use of medications of continuous use, with an older population and greater proportion of use of medications of continuous use in micro-region III.

The predominance of the female gender in the three health micro-regions corroborates national¹¹⁻¹³ and international¹⁴ studies with older adults in the community. Life habits such as smoking, healthy eating, and physical activity, as well as genetic and physiological factors, are different between men and women¹⁵. These elements interact throughout people's life, being able to modulate health and increasing propensity to diseases with aging¹⁵. Conversely, when associated with historical, socioeconomic, cultural, and geographic aspects, these elements may contribute to greater life expectancy among women worldwide¹⁵. The feminization of the aging process is related to the health demands, such as need for specialized professionals, in addition to projects aimed at this population, involving self-care guidance, promotion of social participation and protection against violence, in order to promote healthier aging¹⁶.

With regard to the age group, the results for health micro-regions I and II are in line with those of Brazilian research studies that found a higher percentage of older adults aged 60–70 years old^{12,17}. The increase in the proportion of older adults represents a new challenge to primary health care, in order to promote better quality of life in old age and facilitate access to health services for this population¹⁸. Therefore, it is crucial that health professionals identify characteristics that refer to priority care, such as functional changes resulting from the aging process, which may be more evident among long-lived older adults¹⁹. In this sense, it is inferred that, among the three health micro-regions, micro-region III faces the greatest challenge for meeting the health demands, since it has a population with more advanced age.

With regard to marital status, the present study corroborates data from national research studies, in which there was prevalence of older adults living with a partner^{11,13}. However, the high percentage of widowed individuals also stands out. Living with a partner can positively contribute to health-related aspects²⁰. Conversely, a literature review showed that widowhood among older adults can favor the search for medical emergency, psychiatric, and mental health services, in addition to increasing mortality rates²¹.

Low schooling, observed in the three micro-regions, is consistent with a study on the use of health services by older adults in Indonesia²². A systematic literature review pointed to the fact that, in research studies conducted with older adults living in developed countries, low schooling and low income were related to access difficulties and a higher chance to interrupt the search for health services⁶. In view of the impact of socioeconomic factors on health-related issues, Family Health Teams emerge as a way to provide services to individuals who need them the most, through primary care, so as to minimize inequalities that have a negative impact on access to health services²³.

In line with the current study, the presence of comorbidities among older adults was assessed in national¹⁰ and international²⁴ surveys, being more frequent among women^{10,24}. When comparing the three micro-regions, micro-region I showed the lowest proportion of older adults with five or more morbidities, which can be related to the fact that it had the youngest population among the micro-regions. The studies also revealed that the occurrence of comorbidities was higher among the oldest adults^{10,25}. Considering these aspects, it is worth noting the importance of monitoring the presence of diseases among older adults. In this sense, early diagnosis and planning of actions able to postpone or prevent complications become essential in an attempt to preserve functionality in older adults²⁶.

As for hospitalization, although there was no significant difference between the groups, the results for the three micro-regions were similar to those of national²⁷ and international²² studies, with predominance of older adults who were not hospitalized in the last 12 months. Access to primary health care services in an effective manner can be a favorable strategy to reduce unnecessary hospitalizations among older adults¹¹.

With regard to the presence of depressive symptoms, there was no significant difference between the groups; however, it is worth noting that its frequency in the three health micro-regions was higher than that found in national²⁸ and international¹⁴ studies conducted with community-dwelling older adults. Worse financial condition and greater number of comorbidities²⁸ may have contributed to these results. These factors must be assessed, as they can hinder access to health services²⁸. Thus, health professionals should identify positive cases for tracking depressive symptoms,

in order to promote early diagnosis, relating their causes, and then start to plan actions favoring access to and use of the health services, considering the needs of this population.

The highest percentage of older adults sought the same facility when requiring health care and attended to a medical consultation in the last year⁵. Higher levels of schooling are associated with a higher percentage of medical consultations in the last 12 months⁵. In this sense, although most the older adults have low schooling, more than 80% consulted a physician last year, which can be an indication that the health system intended to reduce health-related inequalities.

With regard to the high frequency of use of medications of continuous use, similar results were observed among older adults who participated in the Health, Well-Being and Aging Study (*Estudo Saúde, Bem-Estar e Envelhecimento*, SABE), which also identified an association between polypharmacy and risk for death in a 4-year follow-up period among the oldest individuals²⁹. Conversely, access to medications by means of Governmental Pharmaceutical Care Programs had an impact on reducing the number of admissions in public services and the mortality rates among Brazilian older adults with chronic diseases³⁰. Data from the National Survey on Access, Use and Promotion of Rational Use of Medications (*Pesquisa Nacional sobre Acesso, Utilização e Promoção do Uso Racional de Medicamentos*, PNAUM) showed that the use of medications, especially polypharmacy, was greater among individuals aged from 70 to 79 years old and was also significant among those aged 80 years old or older³¹. This finding may justify the predominance of older adults taking medications in micro-region III, since it is the one that had the greatest proportion of individuals with more advanced age, compared to micro-regions I and II. Considering the trend of increase in the use of medications by older adults, there is the need to plan strategies to promote access to medications via the Unified Health System (*Sistema Único de Saúde*, SUS) and the discussion on the rational use of medications by this population³¹.

The percentage of older adults who consulted a dentist last year in the three micro-regions was lower than that identified in Brazilian studies^{5,12}. However, data obtained from health micro-region II were similar to those of a research study³² conducted with Chilean older adults (31.5%). The higher number of dental consultations by older adults was related to a better economic condition, according to a systematic literature review⁶. In this context, the low income of the older adults assessed in the present study may have contributed to the lesser search for these services.

Although there was a greater proportion of older adults in health micro-region II who reported having attended a dental consultation last year, it is not possible to ascertain if this search was greater because there was a greater need for the service or because dental coverage was better in the aforementioned micro-region. In a research study conducted with older adults living in the city of Pelotas (RS), the shortage of dental health teams compromised access to the service³³. Therefore, public policies that reinforce the expansion of available dental teams are essential to encourage use and ensure access of older adults to these services.

The predominance of older adults who did not seek treatment related to their own health in the last two weeks corroborates research data involving community-dwelling older adults^{5,34}; with the public service being the most searched¹³. With regard to satisfaction with the health service, lower schooling levels were associated with better evaluation of the care delivered by the SUS⁵, which can explain the higher prevalence of positive perceptions about the health service used, since the majority of the older adult population assessed in the present study had low schooling.

These results show the relevance of the SUS as the source of access to and use of health services among older adults aged 60 years old or older in the country. However, these results reinforce the need to invest in the public service for satisfying the demands of the older adult population, which is consistent with the implementation of effective actions targeted at this population, as recommended by the Ministry of Health³⁵. In this sense, health regionalization and territorialization can favor knowledge on the specificities of the served population, with the purpose of involving the several facets regarding care, such as health promotion, disease prevention, early diagnosis, treatment, and rehabilitation, in a process that considers the social determinants of health and illness.

The limitation of this study consists of its cross-sectional design, which does not allow establishing a causal relationship between the investigated factors. In this context, multicenter, cohort research studies are suggested, so as to contribute to the planning of health policies targeted at this population. The following strengths referring this study stand out: the selection of a representative sample of three health micro-regions and the data presented, since they broaden knowledge on the access to and use of health services by older adults in the setting under study, and may thus strengthen or subsidize health actions and policies.

CONCLUSION

The older adults assessed in this study were predominantly female, had low income and schooling, and lived with a partner. Additionally, health micro-region III presented the population with the most advanced age.

A significant difference was verified between health micro-regions in terms of age and use of medications of continuous use, which were higher in micro-region III; in terms of number of morbidities, which was lower in micro-region I; and in terms of dental consultation in the last 12 months, with a lower proportion in micro-region II. Although the health services were positively evaluated, the percentage of older adults who sought health services is still low in the three regions, with greater access to the public network.

These data are important for health planning, considering local-regional specificities, in addition to emphasizing the challenges and advances in the SUS to respond to the demands of this population, with the purpose of implementing effective and equanimous health public policies in the country.

REFERENCES

1. World Health Organization (WHO). World Population Prospects 2019. Volume II: Demographic Profiles. Department of Economic and Social Affairs. [Internet]. New York: WHO; 2019 [cited 2020 Set 15]. Available from: https://population.un.org/wpp/Publications/Files/WPP2019_Volume-II-Demographic-Profiles.pdf.
2. Dresh FK, Barcelos ARG, Cunha JL, Santos GA. Auto perceived health condition and prevalence of chronic diseases non-transmissible in elderly family health strategy. *Conhecimento Online* [Internet], 2017 [cited 2020 Jun 10]; 2(9):118-27. DOI: <https://doi.org/10.25112/rco.v2i0.1183>.
3. Arruda NM, Maia AG, Alves CC. Inequality in access to health services between urban and rural areas in Brazil: a disaggregation of factors from 1998 to 2008. *Cad. Saúde Pública* [Internet], 2018 [cited 2020 Jun 10]; 34(6):e00213816. DOI: <https://doi.org/10.1590/0102-311x00213816>.
4. Dellaroza MSG, Pimenta CAM, Lebrão ML, Duarte Y. Association of chronic pain with the use of health care services by older adults in Sao Paulo. *Rev. Saúde Pública* [Internet], 2013 [cited 2020 Jun 10]; 47(5):914-22. DOI: <https://doi.org/10.1590/S0034-8910.2013047004427>.
5. Stopa SR, Malta DC, Monteiro CN, Szwarcwald CL, Goldbaum M, Cesar CLG. Use of and access to health services in Brazil, 2013 National Health Survey. *Rev. Saúde Pública* [Internet], 2017 [cited 2020 Jun 10]; 51(Supl. 1):3s. DOI: <https://doi.org/10.1590/S1518-8787.2017051000074>.
6. Almeida APSC, Nunes BP, Duro SMS, Facchini LA. Socioeconomic determinants of access to health services among older adults: a systematic review. *Rev. Saúde Pública* [Internet], 2017 [cited 2020 Jun 10]; 51(1): 1-15. DOI: <https://doi.org/10.1590/s1518-8787.2017051006661>.
7. Araújo MEA, Silva MT, Andrade KC, Galvão TF, Pereira MG. Prevalence of health services utilization in Brazil: a systematic review and meta-analysis. *Epidemiol. Serv. Saúde* [Internet], 2017 [cited 2020 Apr 15]; 26(3): 589-604. DOI: <https://doi.org/10.5123/s1679-49742017000300016>.
8. Bertolucci PHF, Brucki SMD, Campacci SR, Juliano A. The Mini-Mental State Examination in an outpatient population: influence of literacy. *Arq. Neuropsiquiat.* [Internet], 1994 [cited 2020 Apr 15]; 52(1):1-7. DOI: <https://doi.org/10.1590/S0004-282X1994000100001>.
9. Almeida OP, Almeida SA. Reliability of the Brazilian version of the Geriatric Depression Scale (GDS) short form. *Arq. Neuropsiquiat.* [Internet], 1999 [cited 2020 Apr 15]; 57(2-B):421-6. DOI: <https://doi.org/10.1590/S0004-282X1999000300013>.
10. Instituto Brasileiro de Geografia e Estatística. Pesquisa Nacional por amostra de domicílios. Um panorama da saúde no Brasil: acesso e utilização dos serviços, condições de saúde e fatores de risco e proteção à saúde 2008. [Internet]. Rio de Janeiro: IBGE; 2010 [cited 2020 Set 15]. Available from: http://bvms.saude.gov.br/bvs/publicacoes/pnad_panorama_saude_brasil.pdf.
11. Silva AMM, Mambrini JVM, Peixoto SV, Malta DC, Lima-Costa MF. Use of health services by Brazilian older adults with and without functional limitation. *Rev. Saúde Pública* [Internet], 2017 [cited 2020 Apr 15]; 51(supl. 1):5s. DOI: <https://doi.org/10.1590/s1518-8787.2017051000243>.
12. Sória GS, Nunes BP, Bavaresco CS, Vieira LS, Facchini LA. Access to and use of oral health services among the elderly in Pelotas, Rio Grande do Sul State, Brazil. *Cad. Saúde Pública* [Internet], 2019 [cited 2020 Apr 15]; 35(4):e00191718. DOI: <https://doi.org/10.1590/0102-311x00191718>.
13. Cruz PKR, Vieira MA, Carneiro JA, Costa FM, Caldeira AP. Difficulties of access to health services among non-institutionalized older adults: prevalence and associated factors. *Rev. bras. geriatr. gerontol.* [Internet], 2020 [cited 2020 Apr 15]; 23(6):e190113. DOI: <http://dx.doi.org/10.1590/1981-22562020023.190113>.
14. Sousa RD, Rodrigues AM, Gregório MJ, Branco JC, Gouveia MJ, Canhão H, Dias SS. Anxiety and depression in the Portuguese older adults: prevalence and associated factors. *Front. Med.* [Internet], 2017 [cited 2020 Apr 17]; 4:196. DOI: <https://doi.org/10.3389/fmed.2017.00196>.
15. Ostan R, Monti D, Gueresi P, Bussolotto M, Franceschi C, Baggio G. Gender, aging and longevity in humans: an update of an intriguing/neglected scenario paving the way to a gender-specific medicine. *Clin. Sci.* [Internet], 2016 [cited 2020 Apr 17]; 130(19):1711-25. DOI: <https://doi.org/10.1042/CS20160004>.
16. Maximiano-Barreto MA, Portes FA, Andrade L, Campos LC, Generoso FK. The Feminization of the elderly: a biopsychosocial approach of the phenomenon. *Interfaces Cient. Hum. Soc.* [Internet], 2019 [cited 2020 Apr 20]; 8(2):239-52, 2019. DOI: <https://doi.org/10.17564/2316-3801.2019v8n2p239-252>.
17. Melo-Silva AM, Mambrini JVM, Souza Junior PRB, Andrade FB, Lima-Costa MF. Hospitalizations among older adults: results from ELSI-Brazil. *Rev. Saúde Pública* [Internet], 2018 [cited 2020 Apr 17]; 52(Supl. 2):3s. DOI: <http://dx.doi.org/10.11606/s1518-8787.2018052000639>.

18. Sacco RCCS, Cardoso PRR, Escalda PMF, Assis MG, Guimarães SMF. Evaluation of micro-level management of older person care in primary health centers in a health region in the Federal District of Brazil. *Ciênc. Saúde Colet.* [Internet], 2019 [cited 2020 Apr 15]; 24(6):2173-83. DOI: <https://doi.org/10.1590/1413-81232018246.08332019>.
19. Aguiar VFF, Santos BSC, Gomes DCN, Tavares TCA. Assessment of the functional capacity and quality of life of Brazilian elderly people living in a community. *Rev. Enf. Ref.* [Internet], 2019 [cited 2020 Jun 10]; serIV(21):59-65. DOI: <http://dx.doi.org/10.12707/RIV19011>.
20. Andrade JM, Duarte YAO, Alves LC, Andrade FCD, Souza Junior PRB, Lima-Costa MF, et al. Frailty profile in Brazilian older adults: ELSI-Brazil. *Rev Saúde Pública* [Internet], 2018 [cited 2020 Jun 10]; 52(Supl. 2):17s. DOI: <https://doi.org/10.11606/s1518-8787.2018052000616>.
21. Fernandes BL, Borgato MH. Widowhood and elderly health: an integrative review. *Revista Kairós Gerontologia* [Internet], 2016 [cited 2020 Jan 16]; 19(3):187-204. DOI: <https://revistas.pucsp.br/kairos/article/view/32957>.
22. Madyaningrum E, Chuang YC, Chuang KY. Factors associated with the use of outpatient services among the elderly in Indonesia. *BMC Health Serv. Res.* [Internet], 2018 [cited 2020 Apr 15]; 18(1):707. DOI: <https://doi.org/10.1186/s12913-018-3512-0>.
23. Andrade MV, Noronha K, Barbosa ACQ, Rocha TAH, Silva NC, Calazans JA, et al. Equity in coverage by the Family Health Strategy in Minas Gerais State, Brazil. *Cad. Saúde Pública* [Internet], 2015 [cited 2020 Apr 15]; 31(6):1175-87. DOI: <https://doi.org/10.1590/0102-311X00130414>.
24. Jovic D, Vukovic D, Marinkovic J. Prevalence and patterns of multi-morbidity in Serbian adults: a cross-sectional study. *PLoS One* [Internet], 2016 [cited 2020 Apr 15]; 11(2):e0148646. DOI: <https://doi.org/10.1371/journal.pone.0148646>
25. Zhao C, Wong L, Zhu Q, Yang H. Prevalence and correlates of chronic diseases in an elderly population: A community-based survey in Haikou. *PLoS One* [Internet], 2016 [cited 2020 Apr 15]; 13(6):e0199006. DOI: <https://doi.org/10.1371/journal.pone.0199006>.
26. Tavares DMS, Pelizaro PB, Pegorari MS, Paiva MP, Marchiori GF. Prevalence of self-reported morbidities and associated factors among community-dwelling elderly in Uberaba, Minas Gerais, Brazil. *Ciênc. Saúde Colet.* [Internet], 2019 [cited 2020 Apr 15]; 24(9):3305-13. DOI: <https://doi.org/10.1590/1413-81232018249.31912017>.
27. Gullich I, Duro SMS, Cesar JA. Depression among the elderly: a population-based study in Southern Brazil. *Rev. bras. epidemiol.* [Internet], 2016 [cited 2020 Jun 9]; 19(4):691-701. DOI: <http://dx.doi.org/10.1590/1980-5497201600040001>.
28. Mendes-Chiloff CL, Lima MCP, Torres AR, Santos JLF, Duarte YO, Lebrão ML, et al. Depressive symptoms among the elderly in São Paulo city, Brazil: prevalence and associated factors (SABE Study). *Rev. bras. epidemiol.* [Internet], 2018 [cited 2020 Apr 15]; 21(Supl. 2):e180014. DOI: <https://doi.org/10.1590/1980-549720180014.supl.2>.
29. Romano-Lieber NC, Corona LP, Marques LFG, Secoli SR. Survival of the elderly and exposition to polypharmacy in the city of São Paulo, Brazil: SABE Study. *Rev. bras. Epidemiol.* [Internet], 2018 [cited 2020 Apr 15]; 21(Supl.2):e180006. DOI: <https://doi.org/10.1590/1980-549720180006.supl.2>.
30. Almeida ATC, Sá EB, Vieira FS, Benevides RPS. Impacts of a Brazilian pharmaceutical program on the health of chronic patients. *Rev. Saúde Pública* [Internet], 2019 [cited 2020 Apr 15]; 53:20. DOI: <https://doi.org/10.11606/S1518-8787.2019053000733>.
31. Ramos LR, Tavares NUL, Bertoldi AD, Farias MR, Oliveira MA, Luiza VL, et al. Polypharmacy and Polymorbidity in Older Adults in Brazil: a public health challenge. *Rev. Saúde Pública* [Internet], 2016 [cited 2020 Apr 15]; 50(Supl. 2):9s. DOI: <https://doi.org/10.1590/s1518-8787.2016050006145>.
32. Mariño R, Giacaman RA. Patterns of use of oral health care services and barriers to dental care among ambulatory older Chilean. *BMC Oral Health* [Internet], 2017 [cited 2020 Apr 15]; 17:38. DOI: <https://doi.org/10.1186/s12903-016-0329-2>.
33. Silva ARE, Kunrath I, Danigno JF, Cascaes AM, Castilhos ED, Langlois CO, et al. Is oral health associated with the presence of depressive symptoms among the elderly? *Ciênc. Saúde Colet.* [Internet], 2019 [cited 2020 Apr 15]; 24(1):181-8. DOI: <https://doi.org/10.1590/1413-81232018241.12662017>.
34. Tavares DMS, Souza Q, Pegorari MS, Gomes NC, Barcelos RA, Oliveira PB. Access determinants and use of health services among the elderly. *Bioscience Journal* [Internet], 2017 [cited 2020 Apr 15]; 33(4):1079-88. DOI: <https://doi.org/10.14393/BJ-v33n4a2017-34896>.
35. Placideli N, Castanheira ERL, Dias A, Silva PA, Carrapato JLF, Sanine PR, et al. Evaluation of comprehensive care for older adults in primary care services. *Rev. Saúde Pública* [Internet], 2020 [cited 2020 Jun 15]; 54:6. DOI: <http://dx.doi.org/10.11606/s1518-8787.2020054001370>.