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Gender Differences in Health Self-Perception in Older Adults in Primary Health Care in Brazil

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Abstract

The men-to-women ratio shows that women outnumber men, and aging-related aspects signal differences between older men and older women, confirming gender-based differences in aging. Our study aimed to foster discussion on gender and its consequences for health, considering the

perceived and self-reported health of older people attending primary health care facilities. We carried out a quantitative descriptive cross-sectional study in the city of Fortaleza, Ceará, Northeastern Brazil, with people aged 60 or older who were individually interviewed using a questionnaire addressing sociodemographic data (age, gender, marital status, income, education), systemic health (self-reported diseases), oral health and perceived general health (ipresent and past year health status). Participants were 821 older people whose age ranged from 60 to 100 years, with a mean of 69.7 years. There was a predominance of women (n=580; 70.6%). Participants presented low levels of education and income. Women were 1.3 times more likely to present systemic diseases and 1.5 times more likely to use medications compared with men. Women were more edentulous and presented more soft tissue problems than men. There were no differences in self-perceived general health and past year health status among the participants. The participants' self-reported health status revealed women are at an increased risk of getting sick, thus demonstrating gender-based inequalities in health among older adults. Public health policies need to improve people's access to primary care, especially in disadvantaged socioeconomic classes. Strategies should include financial support for health, retirement and social security policies to diminish gender-based inequalities in health.

Keywords: Epidemiology; Health; Health Inequalities; Gender; Older adults

Introduction

The older population will increase from about 11% of the working-age population in 2005 to 49% by 2050 (World Health Organization [WHO], 2011a). These shifts in population age structure will lead to substantial additional fiscal pressures on publicly financed health care and pensions, along with substantial reductions in fiscal pressures for publicly financed education (World Bank, 2011). The speed of demographic and epidemiological transitions has placed Brazil in a scenario characterized by multiple chronic conditions that can last for years. Therefore, aging in contemporary Brazil has become less difficult given the greater social recognition of older people and the sustainable and more equitable policies/initiatives targeted at this population (Ministério da Saúde, 2014).

Population aging implies a growing number of diseases and disabilities, and an increased use of health services by the population. Primary health care (PHC) is traditionally the site for health promotion, health prevention and rehabilitation sought by the population, including older adults. First contact, continuity or longitudinality, comprehensiveness and coordination of care are essential attributes of PHC (Starfield, 2002). These PHC characteristics are indispensable to promote quality of life for the aging process. Veras (2009) emphasizes that reaching old age

can only be considered a real achievement if it adds quality to the additional years of life.

According to WHO (2015), despite the desire that increasing longevity is accompanied by an extended period of good health, the evidence to that is controversial. In fact, the idea that older people today are experiencing better health than their parents is less encouraging. The implications for older people and for society may be negative if the added years of life are dominated by declines in physical and mental capacities. Diseases are often associated with comorbidities and may lead to potential disabilities that affect functionality and hinder or prevent older people from performing their daily activities independently. Comorbidity is associated with worse health outcomes, more complex clinical management, and increased health care costs (Valderas, Starfield, Sibbald, Salisbury, & Roland, 2009). Therefore, it is important to deepen the analysis of aging in this setting.

The men-to-women ratio and aging-related aspects signal differences between older men and older women and confirm gender-based differences in aging. Women tend to live longer than men and present lower mortality rates worldwide; however, it does not mean they have better health conditions. Within this context, the World Health Organization highlights the interaction between biological and social determinants of women's health and show that gender inequalities increase the exposure and vulnerability to risks, limits the access to health care and information, and influences the health status outcomes (Organisation mondiale de la Santé [OMS], 2009). Additionally, analysis across gender suggests that females are in the most vulnerable position regarding healthcare equity in access and subsidy benefits (Montu & Arijita, 2015).

Given that, the present study aimed to foster discussion on gender and its consequences for health considering the perceived and self-reported health of older people attending primary health care facilities. It intents to contribute to the discussion of public policies such as health education and prevention strategies aimed to provide comprehensive care to the older person.

Methods

A quantitative cross-sectional study was conducted with older people living in the city of Fortaleza, located in the State of Ceará, Northeastern Brazil. The city of Fortaleza is the fifth largest city in Brazil with 2,452,185 inhabitants, where women outnumber men in number (1,304,267 vs. 1,147,918 individuals) (Instituto de Pesquisa e Estratégia Econômica do Ceará [IPECE], 2012). Fortaleza has 109 primary health care centers that cover about 50% of the population.

The sample size was calculated for a simple random sample survey. Based on the number of older inhabitants (N=242.430) of the city of Fortaleza in 2012[10] (IPECE, 2012) using a margin of error of 5% and a 99% confidence interval, a sample size of

662 individuals was calculated. However, a total of 821 older people were assessed, which reduced sampling error.

In our study, older person is anyone aged 60 years or older, as defined by the Brazilian National Health Policy for Older People (Brasil, 2006). The study included older adults living in the city of Fortaleza, attending the municipal primary health care facilities, which agreed to participate and were able/fit to answer the questionnaire.

Data were collected through individual interviews using a questionnaire containing closed-ended questions (dichotomous and multiple choice) about socio demographic data (age, gender, marital status, income, education), systemic health (self-reported diseases), oral health and perceived general health (in the present and Last year health). Participants were interviewed at the city primary health care centers.

Three researchers (undergraduate and postgraduate students) were duly trained and informed the participants about the research objectives. The research project was approved by the Research Ethics Committee of the University of Fortaleza (Opinion No. 107/2009). Older adults, prior to participation in the research, provided written consent. In the case of illiterate older adults, oral consent or written consent by their next of kin was provided. The participants were aware of the research objectives and anonymity was guaranteed.

Descriptive and bivariate analyses were performed, as well as a regression model. For the logistic regression model, the variables that expressed, in the bivariate analysis, a significant level lower than 0.20 were selected for analysis. Data were entered and analyzed using the SPSS 20.0 for windows (SPSS Inc., Chicago, IL, USA). Statistical significance was set at $p \leq 0.05$.

Results

The research included 821 older people whose age ranged 60-100 years, with a mean age of 69.8 years (SD±7.0). The mean age of women was 69.8 SD±7.1 and of men was 69.7 SD±6.7 – no age difference was found between the two groups (Mann-Whitney test; $p=0.940$). However, there was a predominance of women (n=580; 70.6%) compared to men (n=241; 29.4%).

Table 1 presents the socio demographic characteristic of older adults by gender. Significant difference was found between gender and marital status ($p<0.001$) where men are mostly married (n=147; 61.0%) and women are predominantly widowed (n=207; 35.7%).

The majority was retired (n=608, 74.1%), earned less than two minimal wages (n=701, 85.4%) and were between 60 and 69 years of age (n=441, 53.7%). Additionally, low schooling was observed in the majority of the older adults, where 24.5% (n=201) were illiterate and 48.8% (n=401) attended less than 5 years of

school. Significant difference was noted among men and women regarding smoking (0.005) and alcoholism (p<0.001).

Table 2 shows the self-rated health of older people and highlights gender differences. Significant difference was found between gender and the existence of systemic disease (p<0.001), diabetes mellitus (p=0.05), osteoporosis (p<0.001), rheumatism (p=0.011) and medication use (p<0.001).

No difference was found between men and women when analyzing self-perception of current health status (p=0.502) and improvement of health comparing to the previous year (p=0.182). With regards to self-rated systemic diseases, 560 (68.2%) respondents reported having some health condition. Women reported more often than men that they had some systemic health problem (p<0.001) and were 1.8 times more likely to present systemic diseases. Women with Diabetes Mellitus (p<0.050), Osteoporosis (p<0.001), Rheumatism (p=0.011) were 1.4, 9.0 and 1.8, respectively, more likely to get sick. Similarly, women were 2.1 times more likely to use medications (p<0.001).

Table 3 presents data regarding oral health discomfort and gender. Women, more often than men, self-rated having dry mouth (p=0.007), difficulties chewing and swallowing food (p<0.001), and food taste problems (p=0.019).

Table 4 presents data related to older adults' oral health examination. Differences were observed among gender, where women were more edentulous (p=0.009), presented more red patches (p=0.013) than men, while men presented more dental decay (p<0.05), tartar (p=0.040), inflamed gingiva (p=0.002), and blisters (p=0.016) than women.

Binary logistic regression was performed in order to evaluate which variables are significant when the gender woman was set as the outcome of interest. The variables marital status, osteoporosis, red stain, medication intake, difficulty chewing and swallowing food and lesions were identified.

Table 5 presents the values of the logistic regression model, which showed a statistically significant results regarding older adults' gender and the variable marital status (p <0.001), osteoporosis (p <0.001), red stain in the mouth (p = 0.007), taking medication (p = 0.022), difficulty in chewing (p = 0.038) and lesions and / or wounds (p = 0.017).

Discussion

In order to associate gender perspectives in health, there is a need for information about intervention and program policies and also about the functioning of health care facilities (WHO, 2010). In this sense, the World Health Organization (OMS, 2009) estimates that although women live longer than men because of biological and behavioral advantages, they present a higher incidence of chronic diseases that can lead to dependency, and hence, demand greater attention to their health. The present

study shows that women presented a poorer self-perceived health status compared with men.

Although age may influence health status (WHO, 2011a), it did not influence the results of the present study, as no age difference was found between men and women. There was, however, a difference between the percentage of men and women in the study group and in the inhabitants of the city of Fortaleza. According to the Brazilian Institute of Geography and Statistics (IBGE), the percentage of older women in the city of Fortaleza is 60.7% (Instituto Brasileiro de Geografia e Estatística [IBGE], 2010). In our study, 70.6% of the participants were women. The explanation for this may be based on the fact that women tend to use health care facilities more often than men (OMS,2009).

In this study, the vast majority of the respondents were low-income people. **Older women are often more socially and economically vulnerable than older men (WHO, 2003) and known to be** more susceptible to poverty than males (OMS, 2009). In Brazil, a low-income population refers to individuals who receive less than two minimum wages (1 MW ± 260 US$) (IBGE, 2010).

Several high-income countries have organized an important part of their budget for older people's social and health care. However, in low-income countries, the expenses related to older people's health care are commonly supported by the family, particularly by the female members of the family, which brings an extra burden to the women. It is important to mention that women traditionally perform an important support role in the family, which was originally more related to care, but more recently has also expanded to family financial support (OMS, 2009).

Küchemann (2012) emphasizes the extent to which men and women are dedicated to reproductive tasks. Her findings conclude that women spend 20.9 hours per week on household chores and care of their families, while men spend 9.2 hours weekly. For that reason, both the number of women who are devoted to reproductive work and the number of hours they spend on it are much higher when compared with the male population. Therefore, there is a clear work overload among women, which may have an influence on their health condition. According to the World Health Organization, several health problems experienced by older women result from risk factors to which they are exposed during their life[8]. On that note, it is important to observe that risk factor commonly linked to males, such as alcohol or tobacco consumption, have been gradually changing over the year, and are link to other cultural and socioeconomic factors. Data from the World Health Organization (WHO, 2009; WHO, 2005) describe higher tobacco consumption in women living in developed countries when compared with developing countries. In many contexts, use of tobacco and alcohol was traditionally higher among men compared with women. However, smoking and alcohol use rates among women have been increasing steadily given the changing gender roles in many societies. Nonetheless, women in high-income

countries are more likely to engage in preventative health activities than men (Britle & Bird, 2007).

The present study found some gender difference in older people's health perception, whereas, women described overall more systemic diseases than men. Specifically, women mentioned diabetes mellitus, osteoporosis, rheumatism and use of medication more than men, when questioned about their perceived health. These facts may explain the reason women have a higher rate of health system utilization than men. However, other facts, related to cultural and socioeconomic issues, may also influence utilization of health care service across genders (Saeed et al., 2016).

Silva, Sousa, Carnut and Rodrigues (2010) show that men are generally responsible for the family income and work at the same time as health facilities are functioning, thus hindering the search for treatment. Gomes, Nascimento and Araújo (2007) emphasize that men, for feeling invulnerable, expose themselves and end up getting more vulnerable. They also find possible explanations for the lower demand for health care services by men in the adoption of self-care practices, as well as in facts related to the cultural moorings of manhood (man seen as virile, strong and invulnerable), in the fear of discovering serious diseases, in the shame of body exposure, in the lack of available time to search treatment and in the lack of health units specific for their health problems. The same authors also state that as women have more access to health services, they also tend to have more access to health education programs developed by those units, which may influence their empowerment regarding their health, thus being able to identify their health situation more efficiently than men.

Women seem to not be afraid to find out about their health condition and seek treatment for it. While men seem to be afraid of this discovery, and thus, when it is discovered, the disease is already in an advanced stage. Perhaps this may partially explain why women's self report more chronic diseases (they know they have the disease), thus taking better care of themselves, suffering less hospitalization and dying later. The results of the present study contribute to the presented line of reasoning, as the women interviewed described more systemic health problems and used more medication than men. Redondo-Sendino, Guallar-Castillón, Ramón Banegas and Rodríguez-Artalejo (2006) state that the factors that best explains the greater utilization of health care services by older women versus older men are the number of chronic diseases and the health-related quality of life.

Looking into the findings of the present research, it can be observed that women have more systemic diseases than men ($p<0.001$). Additionally, they are 1.3 times more likely to present such diseases than their male peers, which may be explained by the way society valorizes men and women and accepts different behavioral aspects for

males and females, which may influence the risk of developing specific health problems and different results concerning general health (WHO, 2010).

Regarding cardiovascular diseases, researchers classify them as the main causes of death among women and men in Brazil (Mansur & Favarato, 2012). Once considered a male problem and the main cause of death of older people, they have been responsible for an increased number of deaths among women every year (WHO, 2009). The statistical similarity regarding cardiovascular problems can be reflected by the risk transition in the behavioral differences between men and women as highlighted by the World Health Organization, which reports, for instance, that alcohol and tobacco consumption was found to be often higher among men than women (OMS, 2009). However, these consumption trends, as previously mentioned, have started to converge between both sexes in many countries (WHO, 2011a).

Regarding the chronic conditions associated with neoplasias, six (54,5%) out of 11 people who reported having cancer/malign tumor were women. Cancer constitutes a public health concern worldwide. It is caused by multifactorial conditions that can act together for its onset, with the patterns of variation differing between the various risk factors and among men and women (Instituto Nacional de Câncer José Alencar Gomes da Silva [INCA], 2014; Siegel, Jiemin, Zhaohui, & Jemal, 2014). Taking the United States of America as an example, the average annual decline in cancer death rates was slightly larger among men (1.8%) than women (1.4%). Further progress can be accelerated by applying existing cancer control knowledge across all segments of the population, with emphasis on low socioeconomic and disadvantaged groups which, as previously seen, is where older women are more commonly found (WHO, 2011b).

Another chronic illness, Diabetes Mellitus, also reveled discrepancy among men and women (22.0% for men and 28.6% for women), indicating that the latter are more afflicted by this disease ($p=0.050$). These results are corroborated by researchers who assessed differences in health care between men and women and recognized biological and social conditions behind the terms “sex” and/or “gender” (Grant et al. 2009). Men and women with diabetes face different challenges in coping with their health condition, which results in implications for Public Health Care.

In the present study, the use of medication was higher among women (n=439; 75,7%) when compared to men ($p<0.001$). Loikas, Wettermark, Euler, Bergman and Schenck-Gustafsson (2013) found substantial differences in the prevalence and incidence of dispensed drugs between men and women. They believe that some differences may be rational and desirable and related to differences between the sexes in the incidence or prevalence of disease or by biological differences. However, other differences are more difficult to explain on medical grounds and may indicate unequal treatment.

The findings that oral discomfort, such as dry mouth, affect large proportions of older adults, especially women, are corroborated by Han, Suarez-Durall and Mulligan (2015) who reported that decreased salivary flow (dry mouth) affects the oral health of many older adults (dentate or edentulous) and highlighted the relationship of dry

mouth with the use of multiple medications. This fact is pertinent to the findings of this study, since most of the older adults (71.1%) used medication, which may contribute to their oral discomfort.

The difference between men and women ($p < 0.001$) with regard to difficulties chewing and swallowing food also stands out as an oral discomfort outcome. It is important to mention that the chewing and swallowing processes are critical to normal food intake. An adequate supply of saliva and oral care are indispensable to allow the proper functioning of these processes and maintain individuous' quality of life (Furuta & Yamashita, 2013).

Study has shown that women are more affected by dental losses than men (Takeuchi et al., 2017). In our study, 56.4% of the elderly were edentulous, with greater odds for women (1.5; $p=0.009$) to be affected by edentulism ($p=0.009$). It is understood that edentulism influences the difficulty of preparing food for swallowing. In the present study, we observed greater odds (1.9 times) of women having more chewing and swallowing problems than men ($p=0.038$), as well as greater odds of having dry mouth (1.6; $p=0.007$) and problems with taste food (1.7; $p=0.019$). Japanese researchers assessed the relationship between the number of remaining teeth, bite force and swallowing problems in older people living independently and found a positive correlation between the number of remaining teeth and the maximum bite force (Okamoto et al., 2012; Okamoto et al., 2015). This result may, at least partially, explain the greater chance of women having chewing and swallowing problems than men, when they are also the ones with the highest odds of being edentulous - findings of our study.

Boyce and Shone (2006) emphasize that chewing problems associated with systemic diseases, tooth loss, can also interfere with taste sensations along with reduced saliva production. In addition to these problems, anxiety in the inability to taste and enjoy food can be responsible for a high degree of anxiety and depression in the elderly.

Overall, we observed that geriatric population is deficient regarding their oral health, with an elevated tooth loss, history of caries, and periodontal disease. These issues may be related to chronic disease destabilization, mastication difficulties, and impairment of oral quality of life, with direct and indirect effects on older adults' general quality of life and well-being (Gil-Montoya, Mello, Barrios, Gonzalez-Moles, & Bravo, 2015).

A regression model was performed in order to understand the inequalities among women and men regarding the variable investigated in the present study. The aim was to investigate which set of combined variables (and their weights) would relate to women. We observed that the geriatric women population were more prone to be widowed, have osteoporosis, red stain in their mouth, take more medication, more difficulties in mastication and swallowing, while males were more likely to have oral wounds than females. Understanding that there is a need for specific public policies that recognize the connection between gender and health, since older men and

women can suffer systemic and chronic health problems and losses with aging, in addition to having behavioral and emotional changes, there is a need for greater epidemiological surveillance and investigation of social, behavioral, genetic and environmental factors that could help planning health care policies and interventions targeted at this population. It is clear that health policies need to improve people's access to primary care, especially in disadvantaged socioeconomic classes (Kuchermann, 2012), including financial support for health, retirement and social security policies, as well as health care, both at the community and at the health units (OMS, 2009).

The present study collected data inside the primary health care unit, interviewing older people who were either in treatment or looking for treatment. Therefore, it had the opportunity to observe the issue of gender in a subgroup that it is not widely explore.

Since the research universe was focused on a single municipality, its results cannot be extrapolated and characterize a limitation of this study. Nevertheless, the study was conducted in a large municipality of Brazil; therefore, its results may be similar to other places and hence, allow the measurement of the impact of diseases in addition to serving as a basis for equity in public health care policies. Further studies should enhance the research in this area.

Discussion

The participants' self-reported health status revealed women are at an increased risk of getting sick, thus demonstrating gender-based inequalities in health among older adults. Public health policies need to improve people's access to primary care, especially in disadvantaged socioeconomic classes. Strategies should include financial support for health, retirement and social security policies to diminish gender-based inequalities in health.

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Table 1. Analysis of the association between gender and sociodemographic characteristics of older adults attending primary care services. Fortaleza, Ceará, 2014.

Variables	Women (n= 580)	Men (n=241)	Total	RP (95%CI)	p*
	n (%)	n (%)	n (%)		
Marital status					<0.001
Single	94 (16.2)	27 (11.2)	121 (14.7)	2.4 (1.5 - 3.9)	
Married	209 (36.0)	147 (61.0)	356 (43.4)	1	
Divorced	70 (12.1)	26 (10.8)	96 (11.7)	1.9 (1.2 - 3.1)	
Widowed	207 (35.7)	41 (17.0)	248 (30.2)	3.6 (2.4 - 5.3)	
Age					0.854
60-69	310 (53.4)	131 (54.4)	441 (53.7)	1.1 (0.6 - 1.8)	
70-79	215 (37.1)	85 (35.3)	300 (36.5)	1.1 (0.7 - 2.0)	
80+	55 (9.5)	25 (10.4)	80 (9.7)	1	
Retired					0.927
Yes	429 (74.0)	179 (74.3)	608 (74.1)	1.0 (0.7 - 1.4)	
No	151 (26.0)	62 (25.7)	213 (25.9)	1	
Income**					0.436
Up to 2 MW	501 (86.4)	200 (83.0)	701 (85.4)	1.3 (0.9 - 2.0)	
2-5 MW	72 (12.4)	38 (15.8)	110 (13.4)	1	
More than 5 MW	7 (1.2)	3 (1.2)	10 (1.2)	1.2 (0.3 - 5)	

Years of study					0.146
None	139 (24.0)	62 (25.7)	201 (24.5)	1.2 (0.7 - 2.0)	
Up to 5	283 (48.8)	118 (49)	401 (48.8)	1.3 (0.8 - 2.0)	
6-9	69 (11.9)	37 (15.4)	106 (12.9)	1	
10 or more	89 (15.3)	24 (10.0)	113 (13.8)	2.0 (1.1 - 3.6)	
Smoking					0.005
Yes	68 (11.7)	46 (19.1)	114 (13.9)	1	
No	512 (88.3)	195 (80.9)	707 (86.1)	1.2 (1 - 1.4)	
Drinking					<0.001
Yes	25 (4.3)	60 (24.9)	85 (10.4)	1	
No	555 (95.7)	181 (75.1)	736 (89.6)	2.6 (1.8 - 3.6)	

*Chi-squared test. ** The Brazilian minimum wage is approximately US$ 260.00 per month

Table 2. Analysis of the association between gender and health variables in older adults attending primary care services. Fortaleza, Ceará, 2014.

Variables	Women (n= 580)	Men (n=241)	Total	RP (95%CI)	p
	n (%)	n (%)	n (%)		
General Health					0.502[1]
Excellent	116 (20.0)	57 (23.7)	173 (21.1)	1	
Reasonable	330 (56.9)	130 (53.9)	460 (56.0)	1.2 (0.6 - 2.5)	
Bad	134 (23.1)	54 (22.4)	188 (22.9)	1.2 (0.5 - 2.8)	
Current health vs health in the past year					0.182[1]
Better	137 (23.6)	45 (18.7)	182 (22.2)	1.4 (0.7 - 2.9)	
Same	325 (56.0)	151 (62.7)	476 (58.0)	1	
Worse	118 (20.3)	45 (18.7)	163 (19.9)	1.2 (0.6 - 2.5)	
Systemic diseases					<0.001[1]
Yes	417 (71.9)	143 (59.3)	560 (68.2)	1.8 (1.0 - 3.2)	
No	163 (28.1)	98 (40.7)	261 (31.8)	1	
Diabetes Mellitus					0.050[1]
Yes	166 (28.6)	53 (22.0)	219 (26.7)	1.4 (0.7 - 2.7)	
No	414 (71.4)	188 (78.0)	602 (73.3)	1	
Cardiovascular diseases					0.766[1]
Yes	293 (50.5)	119 (49.4)	412 (50.2)	1.0 (0.6 - 1.8)	
No	287 (49.5)	122 (50.6)	409 (49.8)	1	
Cancer					0.238[1]
Yes	6 (1)	5 (2.1)	11 (1.3)	1	
No	574 (99.0)	236 (97.9)	810 (98.7)	2.0 (0.2 - 21.8)	
Tuberculosis					1.000[2]
Yes	2 (0.3)	1 (0.4)	3 (0.4)	1	
No	578 (99.7)	240 (99.6)	818 (99.6)	1.2 (0 - 111.1)	
Leprosy					1.000[2]
Yes	2 (0.3)	1 (0.4)	3 (0.4)	1	
No	578 (99.7)	240 (99.6)	818 (99.6)	1.2 (0 - 111.1)	
Osteoporosis					<0.001[1]
Yes	163 (28.1)	10 (4.1)	173 (21.1)	9.0 (3.1 - 26.5)	
No	417 (71.9)	231 (95.9)	648 (78.9)	1	
Rheumatism					0.011[1]
Yes	98 (16.9)	24 (10.0)	122 (14.9)	1.8 (0.8 - 4.2)	
No	482 (83.1)	217 (90.0)	699 (85.1)	1	

Nephritis					0.860[1]
Yes	16 (2.8)	2 (0.8)	18 (2.2)	3.4 (0.3 - 40.1)	
No	564 (97.2)	239 (99.2)	803 (97.8)	1	
Vision problems					0.879[1]
Yes	460 (79.3)	190 (78.8)	650 (79.2)	1.0 (0.5 - 2)	
No	120 (20.7)	51 (21.2)	171 (20.8)	1	
Hearing problems					0.386[1]
Yes	163 (28.1)	75 (31.1)	238 (29.0)	1	
No	417 (71.9)	166 (68.9)	583 (71.0)	1.2 (0.6 - 2.1)	
Use of medication					<0.001[1]
Yes	439 (75.7)	145 (60.2)	584 (71.1)	2.1 (1.1 - 3.8)	
No	141 (24.3)	96 (39.8)	237 (28.9)	1	

[1]Chi-squared test; [2] Fisher's exact test

Table 3. Analysis of the association between gender and oral discomfort variables in older adults attending primary care services. Fortaleza, Ceará, 2014.

Variables	Women (n= 580)	Men (n=241)	Total	OR (95%CI)	p
	n (%)	n (%)	n (%)		
Dry mouth					0.007
Yes	226 (39.0)	70 (29.0)	296 (36.1)	1.6 (1.2 - 2.2)	
No	354 (61.0)	171 (71.0)	525 (63.9)	1	
Difficulty chewing and swallowing food					0.001
Yes	164 (28.3)	42 (17.4)	206 (25.1)	1.9 (1.3 - 2.8)	
No	416 (71.7)	199 (82.6)	615 (74.9)	1	
Problems with the taste of food					0.019
Yes	103 (17.8)	27 (11.2)	130 (15.8)	1.7 (1.1 - 2.7)	
No	477 (82.2)	214 (88.8)	691 (84.2)	1	
Burning mouth sensation					0.098
Yes	45 (7.8)	11 (4.6)	56 (6.8)	1.8 (0.9 - 3.5)	
No	535 (92.2)	230 (95.4)	765 (93.2)	1	
Pain for no apparent reason					0.115
Yes	70 (12.1)	20 (8.3)	90 (11.0)	1.5 (0.9 - 2.5)	
No	510 (87.9)	221 (91.7)	731 (89.0)	1	
Mouth swelling					0.404
Yes	35 (6.0)	11 (4.6)	46 (5.6)	1.3 (0.6 - 2.6)	
No	545 (94.0)	230 (95.4)	775 (94.4)	1	
Voice changes					0.690
Yes	48 (8.3)	22 (9.1)	70 (8.5)	0.9 (0.5 - 1.5)	
No	532 (91.7)	219 (90.9)	751 (91.5)	1	

Chi-squared test

Table 4. Analysis of the association between gender and oral health variables in older adults attending primary care services. Fortaleza, Ceará, 2014.

Variables	Women (n= 580)	Men (n=241)	Total	OR (95%CI)	p
	n (%)	n (%)	n (%)		
Edentulism					0.009
Yes	344 (59.3)	119 (49.4)	463 (56.4)	1.5 (1.1 – 2.0)	
No	236 (40.7)	122 (50.6)	358 (43.6)	1	
No visible tooth decay					0.088

Yes	169 (71.9)	77 (63.1)	246 (68.9)	1.5 (0.9 - 2.4)	
No	66 (28.1)	45 (36.9)	111 (31.1)	1	
Presence of calculus					0.040
Yes	174 (30.0)	90 (37.3)	264 (32.2)	0.7 (0.5 – 1.0)	
No	406 (70.0)	151 (62.7)	557 (67.8)	1	
Sore gums					0.002
Yes	116 (20.0)	72 (29.9)	188 (22.9)	0.6 (0.4 - 0.8)	
No	464 (80.0)	169 (70.1)	633 (77.1)	1	
One or two visible tooth decays					0.019
Yes	54 (9.3)	36 (14.9)	90 (11.0)	0.6 (0.4 - 0.9)	
No	526 (90.7)	205 (85.1)	731 (89.0)	1	
Three or more visible tooth decays					0.007
Yes	11 (1.9)	13 (5.4)	24 (2.9)	0.3 (0.1 - 0.7)	
No	569 (98.1)	228 (94.6)	797 (97.1)	1	
Residual root					0.105
Yes	59 (10.2)	34 (14.1)	93 (11.3)	0.7 (0.4 - 1.1)	
No	521 (89.8)	207 (85.9)	728 (88.7)	1	
Soft tissue injuries					0.077
Yes	203 (35.0)	69 (28.6)	272 (33.1)	1.3 (0.9 - 1.8)	
No	377 (65.0)	172 (71.4)	549 (66.9)	1	
Blisters					0.016
Yes	49 (8.4)	9 (3.7)	58 (7.1)	2.4 (1.2 – 5.0)	
No	531 (91.6)	232 (96.3)	763 (92.9)	1	
Lesions and/or wounds					0.101
Yes	23 (4.0)	16 (6.6)	39 (4.8)	0.6 (0.3 - 1.2)	
No	557 (96)	225 (93.4)	782 (95.2)	1	
Red patches					0.013
Yes	120 (20.7)	32 (13.3)	152 (18.5)	1.7 (1.1 - 2.6)	
No	460 (79.3)	209 (86.7)	669 (81.5)	1	
White patches					0.087
Yes	17 (2.9)	13 (5.4)	30 (3.7)	0.5 (0.2 – 1.0)	
No	563 (97.1)	228 (94.6)	791 (96.3)	1	

Chi-squared test

Table 5. Binary logistic regression model for the female gender in older adults attending primary care services. Fortaleza, Ceará, 2014.

Variables in the model	OR (95%CI) for female gender	p
Marital status		<0.001
Married	2.5 (1.8 - 3.5)	
Unmarried	1	
Osteoporosis		<0.001
Yes	7.8 (4.0 - 15.5)	
No	1	
Red patches		0.007
Yes	1.9 (1.2 - 2.9)	
No	1	
Use of medication		0.022
Yes	1.5 (1.1 - 2.1)	
No	1	
Difficulty chewing and swallowing food		0.038
Yes	1.5 (1.0 - 2.3)	
No	1	
Lesions and/or wounds		0.017
Yes	0.4 (0.2 - 0.9)	
No	1	

Wald's test