Does health status explain gender dissimilarity in healthcare use among older adults?

Estado de saúde explica a disparidade entre mulheres e homens idosos no uso da assistência?

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Abstract

This study investigates the extent to which gender dissimilarity in healthcare use in later life is explained by variation in health and social-economic statuses. It is based on a nationwide sample in Brazil of 12,757 men and 16,186 women aged 60+ years. Individuals with great difficulties or unable to perform at least one daily living activity and/or to walk 100m were classified as "established disability". Those who had interrupted their activities in the previous 15 days because of a health problem were regarded as "temporarily disabled". The remaining we classified as "healthy". These categories were analyzed by multinomial logistic regression, taking "healthy" as the reference category. Prevalences of established disability were 6% among men and 11% among women. Temporary disabilities were 7.9% and 10.1%, respectively. Poor health status was associated with increased use of healthcare among men and women, but men and women differed significantly in relation to use pattern after adjustment for age, health status, and income. Older women were greater consumers of outpatient services and older men of inpatient care.

Health Conditions; Health Services; Aging Health; Gender

Introduction

There is a considerable body of evidence suggesting gender-based inequalities in access to and use of healthcare at various levels [1,2,3]. However, most studies do not present separate analysis of older people, especially in developing countries where population ageing is a more recent phenomenon. In an overwhelming majority of countries, women outnumber men in later life and this advantage cannot be accounted for by socioeconomic or ethnic factors [4].

A previous analysis of a representative sample of Brazilians aged 60 and over identified gender differences in health service use patterns. While older women reported more outpatient visits, older men residing in urban areas (around 80% of all older men) were more likely to have been hospitalized, independently of age [5,6]. Studies in developed countries also reported higher use of primary health care by elderly women [7]. However, because consulting with a doctor is itself a very strong predictor of hospitalizations among older men and women [8], the finding of gender differentials in healthcare use seems paradoxical.

Patterns of seeking and using healthcare in later life are determined by a number of factors that affect older men and women differently. Globally, there is good evidence that older women disproportionately suffer from chronic disabling conditions, such as arthritis, that are

not life threatening, but increase the need for heath care [9].

Access to and use of health services are also related to socioeconomic conditions in later life. Older people, both men and women, with lower incomes exhibit worse indicators of health status and physical functioning and yet use medical services less than do those in better economic situations, independently of age [7,10,11]. A person's social economic position is a major determinant of health in adulthood and this influence persists into later life [5]. In addition, one study on the effects of socioeconomic inequalities in health by age and gender suggests that inequalities that favor affluence tend to increase with age in Brazil [12].

Poverty, low educational status and lower social support are more likely to affect older women than older men [9,13]. For instance, in Brazil there are five times more older women without any source of personal income than older men, 18.6% *vs.* 3.5%, respectively. In addition, older men's earnings are on average twice as high as those of older women [14]. Brazil has a public health system that provides universal and free outpatient and hospital care. Less than 25% of the population has a private health plan [10]. Even considering the extensiveness of Brazil's public health system, one cannot rule out the influence of socioeconomic circumstances in later life on men's and women's healthcare seeking behavior and use.

The objectives of this paper are to explore further possible gender differences in health status in a representative sample of older Brazilians and to examine the extent to which differences in healthcare seeking and use among elderly men and women are explained by differences in health and socioeconomic statuses.

Methods

Data source

The present study uses secondary data and was analyzed in accordance with the principles of the Declaration of Helsinki. It included all individuals aged 60+ years that have participated in the 1998 National Household Survey (PNAD) conducted by the Instituto Brasileiro de Geografia e Estatística (IBGE – Brazilian Institute of Geography and Statistics). The survey collected data on sociodemographic factors and several aspects related to health and healthcare use. It was conducted through household interviews according to a multistage sample of the Brazilian population. The sampling stages were municipalities, areas within each selected municipality, and households within each selected area. The probability of a municipality and an area being selected depended on its population density [14].

Income level was defined by monthly personal income. For the descriptive analysis, older individuals were divided into two groups: those receiving one Brazilian minimum wage or less per month and all the others. Other sociodemographic characteristics used in the analysis were place of residence (urban/rural), head of household (yes/no), living arrangement (alone/not alone), schooling, and per capita household income. The survey also include variables on selected reported chronic diseases and level of difficulty in performing daily living and mobility activities.

All individuals who reported great difficulties or who were not able to perform one or more daily living activities (bathing, eating, using toilet) and/or had great difficulties or were unable to walk at least 100m were classified as having an "established disability". Individuals who reported having had to interrupt their routine activities in the previous 15 days because of a health problem and who had not been classified as having an established disability were regarded as "temporarily disabled". All others were regarded as "healthy". The other health indicators used in the analysis were report of one or more selected conditions: heart disease, hypertension, cancer, diabetes, bronchitis/asthma, chronic renal disease, and cirrhosis.

Access and pattern of health service use were investigated using the following variables: healthcare sought in the previous two weeks, outpatient visit(s) in previous two weeks, number of outpatient visits during prior year, hospitalisation(s) in prior year, number of hospitalisations in previous year, and private health plan coverage.

Analysis

The data were analysed using the survey procedures of Stata statistical software. A special algorithm provided by IBGE was incorporated in the analysis to account for the design effects due to the multiple stage sampling process. Initially, we examined the distribution of older people according to health status by sex and income subgroups. A multinomial logistic regression analysis was next used to identify all the factors associated with temporary and established disabilities in older men and women, separately, taking healthy persons as the refer-

ence category. The odds ratios are presented adjusted for age and place of residence.

Finally, existing differences among older men and women in relation to healthcare use variables were then estimated with the odds ratios and confidence intervals (Woolf's methods) obtained by multiple logistic regression analysis, after considering the effects of all major confounding variables. The final analysis was carried out separately for urban and rural populations because the distribution and access to health services vary substantially according to this variable.

Results

A total of 12,757 men and 16,186 women aged 60+ years participated in the study. Ten percent of men and 14.9% of women had established disabilities and 8.8% and 9.3%, respectively, had temporary disabilities. The remaining 81.1% of men and 75.9% of women were regarded as "healthy" ($\chi^2 = 157.58$, $p < 0.00001$).

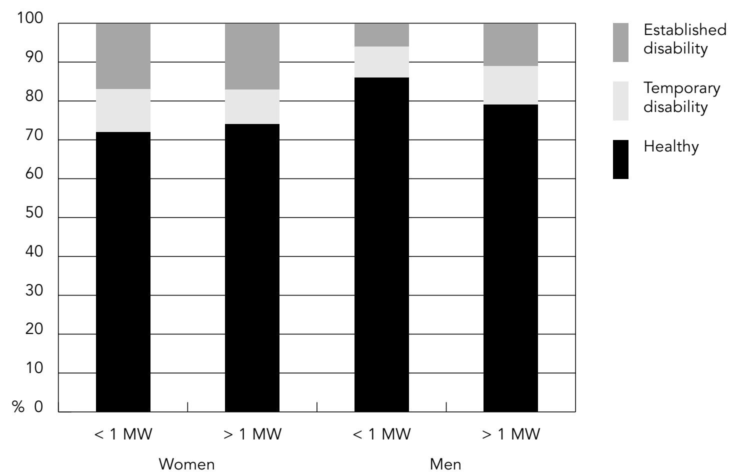
Figure 1 shows the distribution of older people by sex and according to health status and personal income group. The proportion of older individuals with established disabilities was much higher among the lowest income group, both in men and women, but discrepancies were greatest among men ($\chi^2 = 14.08$, $p = 0.0016$ among low income groups and $\chi^2 = 142.30$, $p < 0.00001$ among high income groups).

The proportions of older men and women who reported outpatient visits and hospital admissions in the immediate previous year are presented by "health status" at the time of interview (Figure 2). In both sexes, outpatient visits were clearly more frequent among those with temporary disability ($\chi^2 = 1012.61$, $p < 0.00001$ for men and $\chi^2 = 967.82$, $p < 0.00001$ for women), while hospital admissions were slightly more common among those with established disability ($\chi^2 = 775.86$, $p < 0.00001$ for men and ($\chi^2 = 796.65$, $p < 0.00001$ for women). Independent of health status, outpatient visits were reported more often by older women and hospital admissions by older men.

The association of health status with selected health indicators and health care use variables is presented separately for men (Table 1) and women (Table 2), with adjustment for age, personal income and place of residence. Both older men and women with established and temporary disabilities reported more chronic diseases, and were more likely to have sought healthcare, to report outpatient visits in the prior two weeks, and to report greater number of outpatient visits and hospitalisations in the prior year. Having a private health plan was only and negatively associated with established disability among older women.

Figure 1

Distribution of older Brazilian people by present health status, according to sex and personal income group, in 1998.



MW = Brazilian minimum wage.

Table 3 shows the odds ratios for older women as compared with older men in urban and rural areas in relation to all healthcare use variables after taking into account the possible confounding effects of age, personal income level, report of chronic disease, and presence of temporary or established disability. The results show that older women seek health services more often, report more outpatient visits in the previous two weeks, and greater number of outpatient visits in the previous year in urban and rural areas. However, older women living in urban areas were less likely to have been admitted to the hospital in the previous year after considering the effect of all the other factors included in the analysis.

Discussion

In agreement with other studies worldwide [15,16,17], this study found that a greater proportion of older women than men had established and temporary disabilities. The analysis also showed that seeking and using healthcare among older individuals vary according to health status, socioeconomic factors, and sex,

Figure 2

Proportion of older Brazilian people who attended outpatient visits and were hospitalized in the past year, by present health status and gender, in 1998.

Figure 2a

Medical visits in previous year.

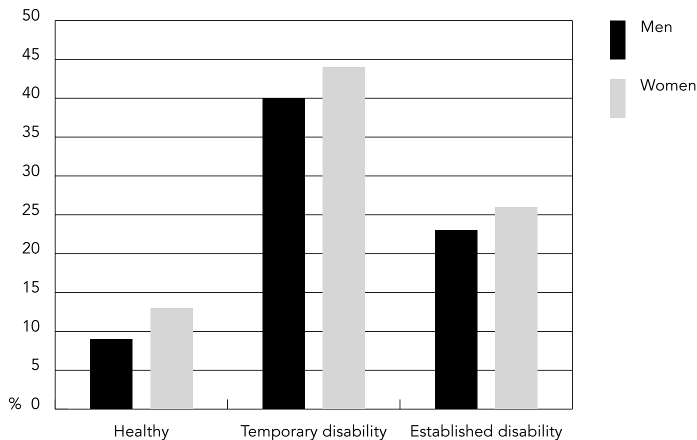
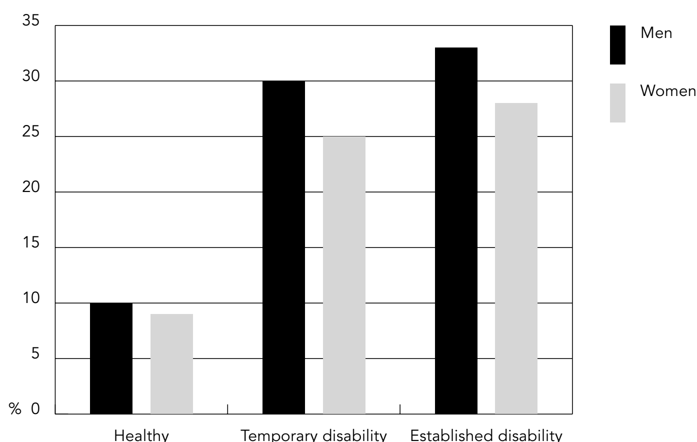


Figure 2b

Hospitalization rates in previous year.



and that these three factors are all independently related to healthcare use in later life. In addition, it showed that differences in older men's and women's patterns of healthcare seeking and use could not be not explained by age, health status, or income level. Older women were greater consumers of outpatient services and older men of inpatient care.

The overall prevalence of established disability was similar and very high among poor older women and men, but older men presented a steeper inverse gradient in the age and place-adjusted odds ratios for established disability according to income levels. Such findings were also apparent in the descriptive analysis comparing income groups by sex and health status, which suggested greater discrepancies in health status among older men. A study in Taiwan found that the effect of economic difficulties was significantly stronger among older men than among older women [17]. Social class differentials in self-assessed health was also greater for older men than women in Britain [5]. In the United States, poor men and men of color have the poorest indicators of health at all age groups [18]. The higher rate of chronic disabilities among low-income older men in Brazil is likely to reflect poor working conditions in adulthood as well as higher exposure to many risk factors associated with poverty, including unhealthy life-styles. Some of these risk factors, especially work-related ones, may continue to play a role in older age. In Brazil, one in four men aged 65+ years is still engaged in the workforce, as compared with only 8% of older women [9,12]. Further investigation is necessary to clarify why poor older men are disproportionately affected by permanent disabilities in Brazil.

As expected, temporary and established disabilities were both associated with report of chronic diseases and greater use of health services among older men and women, independent of age, income, and place of residence. Although both older men and women responded to poor health status with increased health care seeking (outpatient visits and hospitalizations), the magnitudes of these effects appear to be slightly greater among older men.

However, despite the similarities concerning healthcare use in response to health needs, older men and women showed clear differences in use patterns that could not be explained by differences in health status. Analysis confirmed that independent of health, age, and income, older women report more outpatient visits and urban older men more hospital admissions. As women live longer than men, a residual con-

Table 1

Health indicators and health service use associated with health status among older men after adjustment for age, place of residence, and personal income level.

	Health status	
	Temporary disability Adjusted OR (95%CI)	Established disability Adjusted OR (95%CI)
Chronic disease		
No	1.00	1.00
Yes	3.76 (3.07-4.60)	3.17 (2.70-3.72)
Private health plan		
No	1.00	1.00
Yes	0.92 (0.74-1.15)	1.02 (0.85-1.23)
Sought health services in previous 2 weeks		
Yes. and succeeded	1.00	1.00
Yes. but did not succeed	1.28 (0.74-2.22)	0.53 (0.20-1.37)
Did not seek	0.10 (0.09-0.12)	0.24 (0.20-0.29)
Outpatient visits in previous 2 weeks		
No	1.00	1.00
Yes	7.33 (6.23-8.61)	3.41 (2.80-4.16)
Number of outpatient visits in previous year		
0	1.00	1.00
1	2.13 (1.68-2.70)	1.17 (0.90-1.53)
2	2.77 (2.16-3.56)	2.03 (1.62-2.54)
3+	5.42 (4.48-6.58)	4.37 (3.61-5.29)
Hospitalisation in previous year		
No	1.00	1.00
Yes	3.90 (3.37-4.51)	4.40 (3.79-5.12)
Number of hospitalisations in previous year		
0	1.00	1.00
1	3.62 (3.05-4.29)	3.04 (2.56-3.62)
2 +	4.83 (3.78-6.17)	8.46 (6.70-10.68)

OR and 95%CI obtained by multinomial logistic regression and adjusted by age, place of residence, and personal income. Reference category: "healthy".

founding by age due to age-group adjustment would tend to bias downward the observed gender differences in hospital use. Moreover, such differences are present even among healthier older men and women, as seen in Figure 2. Very similar gender differences in patterns of health services use were also observed in other studies [2,19]. Two questions arise from these differences: (1) are men or women under- or overusing outpatient or inpatient services, and (2) do findings express sex differences in health care needs that were not accounted for in the present study?

The higher frequency of outpatient visits among older women, independent of health status, might be explained by: (1) differences in disease pattern, (2) women's greater compliance with medical counseling and treatment, and (3) women's greater use of regular and preventive health check-up. In relation to disease pattern, it is well known that older women have higher prevalence of health problems such as osteoarthritis, which increase healthcare utilization, especially outpatient care [20,21,22]. Numerous studies on common chronic conditions, such as hypertension, also found that women have greater awareness of and tend to comply better with treatment than men [23,24,25]. Additionally, very often compliance involves more regular medical visits. Even in the absence

Table 2

Health indicators and health service use associated with health status among older women after adjustment for age, place of residence, and personal income level.

	Health status	
	Temporary disability Adjusted OR (95%CI)	Chronic disability Adjusted OR (95%CI)
Chronic disease		
No	1.00	1.00
Yes	3.12 (2.64-3.67)	3.36 (2.79-4.04)
Private health plan		
No	1.00	1.00
Yes	1.01 (0.88-1.16)	0.78 (0.68-0.89)
Access to health services in previous 2 weeks		
Yes	1.00	1.00
Not	1.43 (0.90-2.27)	1.42 (0.84-2.42)
Did not seek	0.15 (0.13-0.17)	0.38 (0.34-0.42)
Outpatient visits in previous 2 weeks		
No	1.00	1.00
Yes	5.21 (4.63-5.87)	2.43 (2.15-2.74)
Number of outpatient visits in previous year		
0	1.00	1.00
1	1.73 (1.34-2.23)	1.35 (1.11-1.65)
2	2.59 (2.05-3.29)	1.19 (0.97-1.50)
3+	5.15 (4.10-6.46)	2.58 (2.23-2.98)
Hospitalisation in previous year		
No	1.00	1.00
Yes	3.31 (2.82-3.88)	3.58 (3.19-4.02)
Number of hospitalisations in previous year		
0	1.00	1.00
1	2.95 (2.51-3.48)	2.75 (2.38-3.18)
2+	4.33 (3.18-5.88)	5.91 (4.72-7.40)

OR and 95%CI obtained by multinomial logistic regression and adjusted by age, place of residence, and personal income. Reference category: "healthy".

of disease, women tend to seek more health-related information than men as a result of social role differentiation [26,27].

It is possible that, overall, men are more pessimistic than women on the health benefits of outpatient services. In a study of health perceptions regarding heart disease, arthritis, and sleep disorders, older individuals who believed that nothing could be done to improve their health or that these conditions were "normal" parts of ageing were less likely to have regular physician visits [28]. Older persons who considered health problems as normal parts of aging also had lower use rates of preventive medical services in one community based study [29].

The reasons for higher rates of hospital admissions among older men in urban areas might be, at least in part, health-related. Many studies show that men tend to use preventive medical services less than women [27], which could result in delays and worsening of health problems, and, in turn, increased likelihood of hospital admissions. To some extent older women's higher rates of medical appointments would prevent unnecessary hospital admissions. A randomized control trial has shown that primary care visits can reduce emergency room utilization by older adults with chronic illness [30]. Another possibility is that disease symptoms tend to manifest more severely in older men than women, justi-

Table 3

Access and use of health services among older women as compared with older men in urban and rural Brazil, after adjustment for potential confounding variables.

	Urban Adjusted OR (95%CI)	Rural Adjusted OR (95%CI)
Sought health services in previous 2 weeks		
Yes, and succeeded	1.00	1.00
Yes, but did not succeed	1.04 (0.70-1.55)	1.52 (0.65-3.60)
Did not seek	0.72 (0.67-0.78)	0.72 (0.59-0.88)
Outpatient visits in previous 2 weeks		
No	1.00	1.00
Yes	1.37 (1.27-1.49)	1.39 (1.12-1.72)
Number of outpatient visits in previous year		
0	1.00	1.00
1	1.30 (1.17-1.44)	1.50 (1.26-1.78)
2	1.65 (1.50-1.82)	1.70 (1.39-2.06)
3+	2.02 (1.86-2.21)	2.06 (1.78-2.39)
Hospitalisation in previous year		
No	1.00	1.00
Yes	0.77 (0.71-0.84)	1.09 (0.91-1.30)
Number of hospitalisations in previous year		
0	1.00	1.00
1	0.82 (0.75-0.90)	1.09 (0.88-1.33)
2+	0.67 (0.57-0.79)	1.09 (0.80-1.48)

OR and 95%CI obtained by multivariate logistic regression and adjusted for age, income level, report of chronic conditions, and health status. Reference category: older men.

fying men's greater need of hospital treatment. However, the findings in this study suggest that men used more hospital services independent of their health status, i.e., hospitalization rates were confirmed to be higher even among healthier older men.

There are grounds, however, to suspect gender discrimination in hospital use in urban settings. In Finland, where several important steps have been taken to achieve greater gender equity, a recent study found that women continue to receive less coronary operation than men with the same level of need [32]. A British study has also identified clinically unjustified gender differences in referring rates for coronary artery bypass graft and rehabilitation [32]. Indeed, a number of studies on medical care needs of older people found that women with chronic angina are less likely to receive surgical treatment [33] and the best available treatment after acute myocardial infarction [34].

In our study we found no difference in hospitalization between rural women and rural men. On average, rural women live 2.6 years less than their urban counterpart. A similar, but smaller, difference is observed among urban and rural men (one year) [35].

As there is no difference in outpatient service use between rural men and women, it is unlikely that younger age explains the lack of gender difference in hospitalization in rural areas. It is more likely that both older men and women in rural areas have lower access to hospital care than urban elderly. This question deserves further investigation.

Unfortunately the survey does not provide data on marital status to evaluate its influence on men's and women's healthcare use in Brazil, even though the "living alone" variable may be taken as a reasonable proxy. Existing evidence suggest that marital status is an indicator of social network and seems to play an important role in health care seeking and use, especially among older men [36]. It is also possible that self-report of disease and healthcare use varies by gender. Reporting bias is, however, more likely

to have occurred for outpatient visits and mild diseases than for activities of daily living (used to define established disability) and hospital admissions, which are better defined and more marked factors.

In conclusion, this study identified important gender differences in health care seeking and use patterns among older adults in Brazil, which would not be explained by age, health status (a surrogate for need), or socioeconomic factors. Gender is a sociocultural construct, as is age [37]. It encompasses a broad spectrum of experiences, including a subjective evaluation attached to age and biological ageing as influenced by genetics, anxieties and exposure to environmental hazards [38]. Gender as well as sex influences health care needs, seeking, and use in later life. Knowledge of the directions of such influences can help policy makers address policies aimed at providing fair access to health care and promoting a more need-oriented use pattern among older men and women.

Resumo

O presente trabalho investiga diferenciais de gênero na condição de saúde de idosos e examina se desigualdades de gênero na utilização de serviços de saúde são explicadas pela condição de saúde ou sócio-econômica dos mesmos. Foram estudados 12.725 homens e 16.186 mulheres com 60+ anos, participantes da PNAD 1998. Idosos com grande dificuldade/incapazes de realizar uma/mais atividades da vida diária e/ou andar mais de 100m foram classificados como incapacitados, aqueles que interromperam atividades nos últimos 15 dias por problemas de saúde, como temporariamente incapacitados, e demais, como saudáveis. Utilizou-se regressão logística multinomial (referência: indivíduos saudáveis). A prevalência de homens e mulheres incapacitados foi 6% e 11%, temporariamente incapacitados, 7,9% e 10,1% respectivamente. Pior condição de saúde está associada ao maior uso serviços de saúde, mas padrão de utilização é significativamente diferente entre ambos, independente da idade, condição de saúde ou nível de renda. Idosas apresentaram mais consulta médica, e idosos, mais internações. Identificamos diferenciais de gênero no padrão de utilização de serviços de saúde que não são explicados pela idade, condição de saúde ou sócio-econômica.

Condições de Saúde; Serviços de Saúde; Saúde do Idoso; Gênero

Contributors

S. M. Barreto é responsável pela concepção, análise e redação do trabalho. L. Giatti participou da análise e da interpretação dos resultados. A. Kalache da interpretação dos resultados e redação do trabalho.

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