

Disability among elderly women in Brazil

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Keywords

Aged. Women. Aging. Activities of daily living. Aging health. Risk factors. Socio-economic factors. Disability.

Abstract

Objective

To estimate disability rates and explore associations, identifying the most significant socioeconomic markers associated with the prevalence of mobility disability among elderly women.

Methods

National mobility disability rates were estimated based on information from the 1998 National Household Survey (PNAD), conducted by the *Instituto Brasileiro de Geografia e Estatística*. The present study analyzes the elderly women population, totaling 16,186 subjects. Logistic regression models were constructed considering “difficulty walking 100 meters” as the dependent variable.

Results

The prevalence of markers of mild, moderate and severe disability was greater among women, and increased with age. In logistic regression analysis, markers most strongly associated with increased prevalence of mobility disability were age, gender, low schooling, and low income. Rural residence was also associated with reduced prevalence.

Conclusions

Our results suggest potential risk factors for the development of functional decline in elderly women, given that the associations encountered were consistent with those reported by other studies in the literature.

INTRODUCTION

The study of disability among elderly subjects is important if we are to understand how people live the additional years of life gained with increased longevity. This is a worldwide phenomenon, but, in countries where the aging process is not recent, there is greater knowledge of the patterns of disability among the elderly. In Brazil, there are few studies addressing this subject on a national basis.^{9,12} It is hence opportune to study this phenomenon based on the results of the 1998 National Household Survey (*Pesquisa Nacional por Amostragem de Domicílios - PNAD*),⁸ and, more specifically, the results of its Health Supplement. Disability is defined as the difficulty – due to impairment

– in performing typical activities or activities desired by society.¹⁹ It is to a greater extent an indicator of the consequences of a disease process than a measure of impairment or of specific morbidity.¹⁸ It is becoming a particularly useful concept for the evaluation of the health status of elderly persons, who often show several diseases simultaneously, with different degrees of severity and different impact on day-to-day life.

According to the Brazilian Institute for Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística - IBGE*),⁸ population projections in Brazil show a trend towards an increase in the number of elderly persons, which should exceed 25 million in 2020, with a predominance of women (about 15 mil-

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lion). In studies of the prevalence of functional disability, rates are higher among women than among men, although these results are more likely to reflect differences in survival time with limitations. Studies carried out in the United States and Great Britain show that women do not develop functional disability with greater frequency than men, but they survive for longer than men do with these limitations.^{1,6,11}

This may be explained, at least partly, by differences in the diseases associated with the men and women who report disabilities.⁶ Interventions potentially capable of reducing the burden of functional disability among the elderly are being explored with the goal of developing novel prevention and treatment strategies capable of diminishing the functional consequences of chronic diseases among the elderly population, and more specifically among elderly women, who live to older ages.¹⁶

In a meta-analysis of studies carried out mainly in the United States, Stuck et al¹⁷ reported smoking, increase and reduction of body mass index, lack of (as well as excessive) alcohol consumption when compared to moderate consumption, low frequency of social contact, and depression as important causes of future limitations. In addition to these individual factors, a strong association is reported between socioeconomic status and limitations in elderly persons in both longitudinal and cross-sectional studies in the United States and Europe.^{3,4,10,13}

The aim of the present study is to estimate the rates of mobility disability among women aged 60 years and older and to identify sociodemographic factors associated with the prevalence of mobility disability.

METHODS

The present study was carried out based on data from the PNAD,⁸ which is representative of the total population living in Brazil in September 1998 (excluding the rural area of the North Region). In the 112,434 households sampled by the PNAD, 28,943 persons aged 60 years and older were found and were included in the sample. Of these, 16,186 were women and 12,757 were men. Whenever possible, all members of the household were interviewed; persons living in collective residences were included in the sample, but accounted for only 0.1% of the total elderly population. Of the 28,943 subjects in our sample, we excluded from the analysis the subjects with values missing for the following fields: 'color' (2), 'schooling' (14), 'family income' (1,161), 'home ownership' (35), 'goods ownership' (35), 'sanitary conditions of the residence' (33). In the present analysis, we will consider only the data on women.

Functional disability is frequently evaluated based on self-reporting or on the need for help to perform basic personal care activities (activities of daily living - ADL) as well as more complex activities necessary for living independently in the community (instrumental activities of daily living - IADL).

The ADL evaluates the severest degree of limitation in the functional spectrum, and elderly persons may show great functional decline without showing limitations in these activities. This indicator is therefore of limited use in the identification of changes with time and in the measurement of the impact of interventions. IADL are considered as more complex than personal care activities, and include shopping, cooking, domestic chores, laundry, commuting, taking medication, handling money, and using a telephone.

In addition to ADL and IADL, a wide variety of other measures of self-reported functional status have been developed. The evaluation of mobility has been considered as an important component of functional evaluation. Mobility can be evaluated by self-report, using a hierarchical approach beginning with simple mobility tasks, such as moving from the bed to a chair, and progressing to tasks such as walking short and long distances and climbing stairs. Results using mobility measures have proven valuable to the study of the relationship between functional status and demographic characteristics and chronic conditions, health-related behaviors, changes in weight, and osteoarthritis.⁵

The questions asked were the following: "Usually, due to health problems, do you have difficulties in: 1) eating, showering, or using the toilet?; 2) running, lifting heavy loads, practicing sports, or performing heavy work?; 3) pushing a table or doing housework?; 4) climbing stairs?; 5) crouching or kneeling?; 6) walking more than one kilometer?; 7) walking about 100 meters?". Answers included the categories 'unable,' 'with great difficulty,' 'with some difficulty,' and 'without difficulty.'

Mobility disability is not an attribute clearly present or absent, but is a matter of degree. Although policy makers tend to classify people as with or without a given disability, there is actually a full spectrum of limitations, ranging from mild to extremely severe.

Considering functional disability as a progressive process, we used a scale of mobility disability including three measures: a) difficulty eating, showering, and using the toilet – the basic ADL measure, used as a measure of 'severe mobility disability' in the scale proposed; b) difficulty walking more than 100 meters – a measure of moderate limitation, used

as a good prognostic marker for the failure process in elderly persons; and c) difficulty walking more than one kilometer – used as a measure of mild mobility disability. These three measures were selected because their significance to the evaluation of normal behavior is clear, they are relatively and culturally independent, and they have been used previously as indicators of disability.

Sociodemographic variables included sex, age, skin color, place of residence, urban/rural residence, schooling, family income, family composition, family and residence size, home ownership and sanitary conditions, and ownership of durable goods.

Schooling was analyzed in complete years. Monthly family per capita income – expressed in percentiles – was calculated as the total family income in the month preceding the interview divided by the number of persons in the family. Two measures were created: sanitary conditions of the home, in-

cluding lighting; and ownership of durable goods, including access to refrigerator, telephone, and washing machine.

Data were processed and analyzed using SPSS-10 software. Statistical analysis was based on the information from the sample rather than on data expanded by weighting. This approach was used because the size and self-representativeness of the sample made the differences between weighted and non-weighted estimates inexpressive. Moreover, comparisons between estimates obtained using the non-weighted sample and estimates based on information from the 2000 Demographic Census confirm representativeness of the former by sex and age.

Logistic regression was used for constructing two models, with difficulty walking 100 meters as the dependent variable.

The choice of this indicator of moderate mobility

Table 1 - Distribution (%) of sample information by sociodemographic indicators and sex. Brazil, 1998.

Variables	Men		Women	
	N=12,757 (%)	(95% CI)	N=16,186 (%)	(95% CI)
Age groups				
60-64	33.0	(31.5-34.4)	31.0	(29.7-32.2)
65-69	26.6	(25.1-28.1)	24.8	(23.5-26.1)
70-74	18.4	(16.8-20.0)	19.2	(17.8-20.5)
75-79	11.7	(10.1-13.3)	12.0	(10.5-13.4)
80-84	6.4	(4.7-8.0)	7.6	(6.2-9.1)
85+	4.0	(2.3-5.7)	5.5	(4.0-7.0)
Region of residence				
Northeast	28.2	(26.7-29.7)	27.7	(26.4-29.0)
North*	3.6	(1.9-5.3)	3.3	(1.7-4.8)
Southeast	47.0	(45.8-48.3)	48.6	(45.5-49.7)
South	15.6	(14.0-17.2)	15.7	(14.3-17.1)
Center-West	5.7	(4.0-7.3)	4.8	(3.3-6.3)
Color				
Black	6.9	(5.3-8.6)	7.1	(5.6-8.6)
Mulatto	35.1	(33.7-36.5)	32.5	(31.3-33.8)
White	56.9	(55.7-58.0)	59.5	(58.5-60.5)
Other	1.1	(0.0-2.8)	0.9	(0.0-2.4)
Residence				
Urban	77.9	(77.1-78.7)	83.2	(82.6-83.9)
Rural**	22.1	(20.6-23.6)	16.8	(15.4-18.2)
Years of schooling				
Less than 1	37.2	(35.8-38.6)	41.9	(40.7-43.1)
1 to 3	22.7	(21.2-24.3)	21.0	(19.7-22.4)
4 to 7	23.5	(21.9-25.0)	23.3	(21.9-24.6)
8 or more	16.6	(15.0-18.2)	13.8	(12.0-15.2)
Family composition				
Alone	8.1	(6.4-9.8)	14.8	(13.4-16.3)
Couple	36.0	(34.6-37.4)	23.9	(22.6-25.3)
With child	47.5	(46.2-48.7)	48.8	(47.7-49.9)
Other	8.4	(6.8-10.1)	12.5	(11.0-13.9)
Home ownership				
Owner	85.6	(85.0-85.3)	85.4	(84.8-86.0)
Rental	6.7	(5.0-8.3)	6.7	(5.3-8.2)
Loaned	7.4	(5.7-9.0)	7.6	(6.1-9.1)
Other	0.4	(0.0-2.1)	0.3	(0.0-1.8)
Possession of durable goods (telephone, washing machine, and refrigerator)				
Zero or one	55.3	(54.1-56.4)	52.5	(51.4-53.5)
Two	21.8	(20.2-23.3)	23.7	(22.3-25.0)
Three	23.0	(21.4-24.5)	23.8	(22.5-25.2)
Home sanitary conditions				
Good	42.9	(41.5-44.2)	48.2	(47.1-49.3)
Poor	57.2	(56.0-58.3)	51.8	(50.7-52.9)

*Rural population excluded

**North region excluded

disability for use as a dependent variable in the logistic regression analysis is due to the following reasons:

- Recent studies indicate that measures of physical mobility, especially those related to medium distances, are a good prognostic marker of the process of failure in elderly persons, whereas measures of ADL are an indicator of a very advanced stage of the process, little useful when dealing with prevention and intervention, and measures of mild mobility disability are more adequate for the evaluation of patterns of active aging.¹¹
- The logistic regression models used, which consider measures of mild and severe mobility disability as the dependent variable, did not differ substantially from the model employing a measure of moderate difficulty.

RESULTS

In 1998, there were approximately 14 million people aged 60 years or older in Brazil, representing roughly 9% of the country's total population. Table 1

presents the distribution of sociodemographic variables in the sample.

Differences in terms of sex and age are important when describing the elderly population of Brazil. As observed worldwide, the number of elderly women in Brazil is greater than that of elderly men, and the information from the PNAD show that, in 1998, 44.1% of the country's elderly population were men and 55.9% were women.

As seen in Table 1, as is the case with the general population, elderly women live mostly in the country's two largest regions – the Southeast and North-east – and are concentrated in the urban areas. Schooling is extremely low: 41.9% of elderly women are illiterate and only 13.8% have eight or more years of schooling. Elderly women consistently report lower schooling than men.

Median family income was about R\$166.00 per capita. As the distribution of income in Brazil is

Table 2 - Prevalence (%) of mobility disability among elderly women. Brazil, 1998.

Variables	Severe		Mobility disability Moderate		Mild	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Region of residence						
Northeast	19.6	(17.0-22.2)	31.8	(29.4-34.2)	58.7	(56.8-60.6)
North*	19.1	(11.4-26.8)	32.0	(25.0-39.0)	55.4	(49.7-61.1)
Southeast	15.4	(13.4-17.4)	28.9	(27.0-30.8)	54.1	(52.6-55.6)
South	14.7	(11.1-18.3)	25.7	(22.3-29.1)	52.0	(49.3-54.7)
Center-West	19.9	(13.6-26.2)	28.5	(22.6-34.4)	57.0	(52.4-61.6)
Color						
Black/mulatto	18.3	(16.1-20.5)	31.0	(29.0-33.0)	58.1	(56.5-59.7)
White	16.4	(14.6-18.2)	28.4	(26.7-30.1)	53.9	(52.5-55.3)
Other	15.3	(0.0-30.3)	21.5	(7.0-36.0)	43.1	(30.8-55.4)
Residence						
Urban	16.8	(15.3-18.3)	29.9	(28.5-31.3)	55.2	(54.1-56.3)
Rural**	18.4	(15.0-21.8)	27.0	(23.8-30.2)	56.9	(54.4-59.4)
Years of schooling						
Less than 1	23.2	(21.1-25.3)	37.7	(35.8-39.6)	65.8	(64.4-67.2)
1 to 3	15.1	(12.0-18.2)	27.4	(24.5-30.3)	55.2	(53.0-57.4)
4 to 7	12.5	(9.5-15.5)	23.7	(20.9-26.5)	48.5	(46.2-50.8)
8 or more	9.3	(5.4-13.2)	16.7	(12.9-20.5)	36.3	(33.0-39.6)
Per capita family income quintile						
1	21.8	(18.1-24.5)	33.9	(31.0-36.8)	38.7	(35.9-41.5)
2	21.9	(19.0-24.8)	35.8	(33.2-38.4)	35.3	(32.7-37.9)
3	16.1	(12.6-19.6)	29.8	(26.6-33.0)	42.1	(39.2-45.0)
4	14.1	(10.8-17.4)	26.8	(23.8-29.8)	47.6	(45.1-50.1)
5	11.6	(8.3-14.9)	20.4	(17.3-23.5)	58.2	(55.9-60.5)
Family composition						
Single	18.2	(14.6-21.8)	32.0	(28.7-35.3)	58.8	(56.2-61.4)
Couple	15.3	(12.4-18.2)	26.4	(23.7-29.1)	52.1	(49.9-54.3)
With child	16.8	(14.8-18.8)	28.6	(26.7-30.5)	54.5	(53.0-56.0)
Not related	20.6	(16.7-24.5)	35.1	(31.6-38.6)	61.9	(59.2-64.6)
Home ownership						
Owner	16.9	(15.4-18.4)	29.1	(27.7-30.5)	55.3	(54.2-56.4)
Rental	17.7	(12.3-23.1)	29.0	(24.0-34.0)	54.0	(50.0-58.0)
Loaned	18.3	(13.2-23.4)	32.8	(28.2-37.4)	58.4	(54.8-62.0)
Other	18.2	(0.0-45.0)	43.2	(0.0-65.5)	59.1	(0.0-78.1)
Possession of durable goods (telephone, washing machine, and refrigerator)						
Zero or one	20.2	(14.4-18.2)	33.5	(31.8-35.2)	61.7	(60.4-63.0)
Two	15.0	(8.2-14.2)	27.6	(24.9-30.3)	53.5	(51.3-55.7)
Three	12.2	(5.5-11.5)	22.0	(19.2-24.8)	43.8	(41.4-46.2)
Home sanitary conditions						
Good	19.1	(12.6-16.6)	31.2	(29.4-33.0)	58.3	(56.9-59.7)
Poor	14.9	(9.7-13.7)	27.5	(25.7-29.3)	52.3	(50.8-53.8)

*Rural population excluded

**North region excluded

highly concentrated, even within the highest quartile of income – in which median per capita income is R\$770.00* – there is great inequality.

Elderly women live with their families, with children (48,8%), or as couples (23.9%). However, 14.8% live alone, a higher proportion than of men in the same situation (8.1%).

Figure shows the prevalence of functional disability among elderly women according to type of limitation. The most frequent limitations are those that require greater physical effort, such as climbing stairs or walking more than one kilometre. It should be noted, however, that many elderly women do not report difficulty in performing even such demanding activities. Thus, even among the 85+ years age group, 14.1% of women (95%CI: 11.6-16.5) did not report difficulty in walking more than one kilometre. Difficulty with basic activities such as eating, using the toilet, and showering were less frequent, affecting 17.1% of women (95%CI: 15.7-18.5).

Table 2 presents the prevalence of mobility disability among elderly women in Brazil according to these types of limitations – severe, moderate, or mild – and selected sociodemographic indicators. According to these indicators, distribution is relatively uniform within each of the three levels of mobility disability, despite the differences in magnitude between them. Family income, schooling, and goods ownership showed the greatest differences in terms of the prevalence of mobility disability among elderly women.

Table 3 presents the odds ratios (OR) for mobility disability according to each of the studied variables, showing first univariate associations adjusted for age, followed by multivariate probabilities adjusted for all other variables.

The estimated univariate associations show that, after adjustment for age, the following factors were associated with moderate mobility disability: *skin color, sanitary conditions in the household, schooling, house size, urban/rural residence, family income, and goods ownership.*

After adjustment for all variables (presented in Table 3), *increases in age, reported white skin color, ownership of a greater number of durable consumption goods, and lower levels of income and schooling* showed the strongest associations with increased risk of mobility disability. *Living in urban areas,*

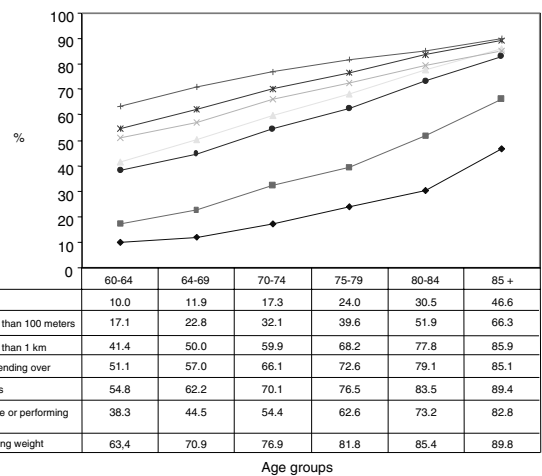


Figure - Prevalence of mobility disability among elderly women according to type of limitation and age group.

when compared to rural areas, was also a significant risk factor for mobility disability among women.

DISCUSSION

The present study shows that the pattern of mobility disability among Brazilian women is similar to those found in other countries. It also suggests that aging is not synonymous with mobility disability, since even in the 85+ years age group many women did not report difficulty in walking more than one kilometre.

Brazil is a country with great diversity, including regional differences, racial diversity, and differences in family and household composition. We expected these factors to be associated with mobility disability; however, the present study showed that material circumstances and schooling are the dominant factors in the differences in mobility disability found among these women.

White skin color and urban residence also appeared as associated risk factors. According to several authors,^{13,14} adjustment for socioeconomic indicators of associations between skin color and healthcare-related outcomes must be used cautiously, since such indicators are part of the causal mechanisms lying in between skin color and the outcome. Further studies regarding the differences found between urban and rural areas are required, since the association found may indicate different lifestyles in these areas or under-reporting of mobility disability by rural residents.

When evaluating the results of the present study, we must also consider the limitations of our data. Firstly, the rural sample is incomplete, since it does

*The minimum wage in Brazil in 1998 was R\$130.00

not include the rural area of the North Region due to the logistic complexity of data collection in this region. Furthermore, our questions regarding disability comprised mainly physical function, and we were not able to use any measures of cognitive disability or mental health. Thus, such factors are reflected in the results only if they are severe enough so as to affect the functional aspects assessed in the survey.

Ideally, analyses of the distribution of mobility disability should include complementary data on known risk factors such as smoking, alcohol consumption, and physical exercise. Additionally, more reliable information on the occurrence of diseases would be useful in order to better understand the pathologies and lesions that lead to the development of functional limitations. Unfortunately, no behavioral data is available and the information we have on disease is self-reported – and therefore probably of limited accuracy, given the low level of schooling of the elderly

population and the difficulties in access to the public healthcare system in Brazil.

When studying socio-economic differences in relation to mobility disability, it is important that the issues raised have the same meaning across the different social groups, and that precise information be obtained. For instance, the question on “difficulty eating, using the toilet, or showering” may introduce an information bias due to differences in the accessibility of sanitary installations between the different groups. Therefore, it could also not be used as an outcome measure in the regression models.

On the other hand, reported family income proved to be an adequate measure for dividing the elderly population into five broad income groups, although there is also a potential information bias related to the rounding of income values close to the minimum wage in September 1998. Furthermore, the extreme income concentration seen in Brazil has hindered the

Table 3 - Prevalence and adjusted odds ratios (OR) and 95% confidence intervals (95% CI) for difficulty walking 100 m among elderly women by sociodemographic indicators. Brazil, 1998.

Indicators	Prevalence of difficulty walking (%)	OR adjusted For age	Multivariate OR ^a
Region			
Northeast	31.8	1	1
North	32.0	1.03 (0.88-1.21)	0.99 (0.83-1.18)
Southeast	28.9	0.91 (0.83-0.99)*	1.05 (0.94-1.16)
South	25.7	0.78 (0.70-0.86)*	0.91 (0.80-1.03)
Center-West	28.5	0.96 (0.83-1.11)	0.96 (0.82-1.13)
Color			
Black/Mulatto	31.0	1	1
White	28.4	0.84 (0.78-0.90)*	1.13 (1.03-1.23)*
Residence			
Urban	29.9	1	1
Rural	27.0	0.87 (0.79-0.96)*	0.65 (0.58-0.74)*
Years for schooling			
Illiterate	37.7	1	1
1 to 3	27.4	0.72 (0.66-0.80)*	0.74 (0.67-0.83)*
4 to 7	23.7	0.58 (0.53-0.64)*	0.65 (0.58-0.73)*
8 or more	16.7	0.38 (0.33-0.43)*	0.49 (0.42-0.58)*
Per capita family income quintile			
1 (lowest income)	33.9	1	1
2	35.8	0.96 (0.86-1.07)	1.01 (0.98-1.13)
3	29.8	0.82 (0.72-0.92)*	0.89 (0.78-1.01)
4	26.8	0.72 (0.64-0.81)*	0.86 (0.75-0.99)*
5 (highest income)	20.4	0.45 (0.40-0.51)*	0.72 (0.61-0.84)*
Family composition			
Alone	32.0	1	1
Couple	26.4	1.01 (0.89-1.13)	1.04 (0.87-1.24)
With child	28.6	1.05 (0.95-1.17)	1.00 (0.81-1.24)
Other	35.1	1.12 (0.98-1.27)	1.06 (0.86-1.29)
Size of family			
No. of members (continuous variable)		1.05 (1.00-1.10)	1.07 (0.97-1.18)
Size of home			
No. of rooms (continuous variable)		0.91 (0.90-0.93)*	0.96 (0.94-0.98)*
Home ownership			
Owner	29.1	1	1
Rental	29.0	1.01 (0.88-1.17)	0.99 (0.86-1.16)
Possession of durable goods (telephone, washing machine, and refrigerator)			
Zero or one	33.5	1	1
Two	27.6	0.76 (0.69-0.83)*	0.94 (0.84-1.04)
Three	22.0	0.54 (0.49-0.59)*	0.84 (0.74-0.97)*
Home sanitary conditions			
Poor	31.2	1	1
Good	27.5	0.81 (0.75-0.87)*	0.94 (0.85-1.04)

Note: ^aAdjusted for the remaining variables in the table plus age
*Statistically significant at p<0.05

Table 4 - Prevalence of functional disability among women 65 years and older in England and Brazil by age group.

England*				Brazil**			
65-79 years		80+ years		65-79 years		80+ years	
N	%	N	%	N	%	N	%
Difficulties with personal care***				Difficulty eating/showering/using the toilet			
1,720	12	638	30	9,049	16	2,111	37
Difficulty walking 200 m				Difficulty walking 100 m			
1,720	20	638	53	9,049	30	2,113	58
Difficulty climbing 12 steps				Difficulty climbing stairs			
1,720	18	638	40	9,049	68	2,112	86

*Hirani & Malbut,⁷ (2002)

**IBGE/PNAD⁸

***Personal care: difficulty getting out of bed, moving chairs, dressing, washing, eating, and using the toilet

measurement of the risk of mobility disability among groups located below the median income level. This occurred because family incomes were low and homogeneous, making it difficult to discriminate between these subjects in terms of differences in the risk of mobility disability.

Even though our data show certain limitations, they are also quite robust. This is due to the large sample size and to its nationwide coverage. In fact, the survey conducted (PNAD) provides the first set of information on functional disability at the national level. Moreover, it includes a broad range of sociodemographic variables, thus allowing for analyses of the influence of these variables on functional disability among the Brazilian elderly. Data on functional disability also provide information on widely employed indicators, including mobility indicators, for which there is extensive evidence regarding validity and predictive value.

Comparisons between these rates and the results obtained in recent studies from other countries are difficult, since the questions posed are often different. Furthermore, many studies from developed countries exclude the institutionalized elderly, thus removing a high proportion of elderly persons with some type of functional disability from the overall estimates. A high proportion of the elderly are institutionalized in these countries, which is in contrast to the scenario in Brazil, where institutionalized elderly

represent less than 1% of the elderly population.

One exception is the Health Survey of England 2000,⁷ which produced estimates including all persons. Table 4 shows data on comparable items, and, even though the measures are not exactly identical, prevalence rates for the ADL measure were very similar. In addition, prevalence rates for walking 200m (England) or 100 m (Brazil) are also very similar.

The prevalence of difficulty climbing stairs was greater in Brazil than in England. Two factors may explain this difference: a) a specific number of steps was not defined in the question asked in the PNAD; b) in Brazil, climbing stairs may not be a familiar task for many elderly persons, in contrast to England, where the presence of stairs in residences is common.

Even considering these limitations and differences, the results presented may be interpreted as suggestive of potential risk factors for the development of functional decline in elderly persons, since they are consistent with the results of other studies. The characteristics identified as associated with moderate functional disability integrate the complex causal network behind functional decline. However, preventive measures aimed at achieving improvements in these factors may increase the functionality of the elderly population and, consequently, the quality of the additional years of life acquired in recent decades.

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