

Performance pattern of activities of daily living for older adults in the city of São Paulo in 2000, 2006, and 2010

Padrão do desempenho nas atividades de vida diária em idosos no município de São Paulo, nos anos 2000, 2006 e 2010

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ABSTRACT: *Introduction:* Functionality in aging is associated with the autonomy and independence of older people. *Objective:* To identify and hierarchize the difficulties reported by older adults in performing activities of daily living. *Method:* This is a cross-sectional, descriptive, household-based study that used the Health, Well-being, and Aging Study (*Saúde, Bem-Estar e Envelhecimento* - SABE) database of 2000, 2006, and 2010. We evaluated the functionality using reports on the difficulty in performing basic and instrumental activities of daily living (ADL and IADL, respectively). The Guttman scaling assessed the hierarchy of functional impairment. *Results:* The prevalence of reported difficulty in performing one or more IADLs was 35.4, 45.8, and 41.0%; while for ADLs, it was 16.3, 13.3, and 17.5%, in 2000, 2006, and 2010, respectively. In ten years of follow-up, the variability in prevalence among women ranged from 42.3 to 54.6% for IADL impairment, and 17.0 to 20.4% for ADL. For men, it varied from 25.6 to 33.1% for IADL impairment, and 8.0 to 13.7% for ADL. In the three waves, the activities with the highest reported difficulty were using transportation, performing heavy tasks, and managing finances, while feeding was the least prevalent. *Conclusion:* The prevalence of functional impairment increased in ten years, with higher variability among women and with advancing age. These results contribute to the planning of services and adequate distribution of existing resources as they reveal the needs and care required.

Keywords: Aged. Activities of daily living. Frail elderly.

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**in memoriam*.

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RESUMO: *Introdução:* A funcionalidade no envelhecimento está associada à autonomia e independência das pessoas idosas. *Objetivo:* Identificar e hierarquizar as dificuldades referidas no desempenho das atividades de vida diária de idosos. *Método:* Estudo transversal e descritivo, de base domiciliar, que utilizou a base de dados do Estudo SABE (Saúde, Bem-Estar e Envelhecimento) nos anos de 2000, 2006 e 2010. A funcionalidade foi avaliada por meio do relato de dificuldade no desempenho das atividades básicas (ABVD) e instrumentais de vida diária (AIVD). A hierarquização do comprometimento funcional foi avaliada pelo escalonamento de Guttman. *Resultados:* A prevalência de dificuldade referida no desempenho de uma ou mais AIVDs foi de 35,4; 45,8 e 41,0% e para as ABVDs foi de 16,3; 13,3 e 17,5%; respectivamente nos anos de 2000, 2006 e 2010. Em dez anos de acompanhamento observa-se, entre as mulheres, variabilidade na prevalência de 42,3 a 54,6% de comprometimento nas AIVDs e de 17,0 a 20,4% nas ABVDs e, entre os homens, de 25,6 a 33,1% em AIVDs e de 8,0 a 13,7% em ABVDs. Nas três ondas, as atividades com maior relato de dificuldade foram utilizar transporte, realizar tarefas pesadas e cuidar das finanças, enquanto o ato de comer foi a menos prevalente. *Conclusão:* Houve aumento na prevalência de comprometimento funcional no período de dez anos, com maior variabilidade entre as mulheres e com o avançar da idade. Esses resultados contribuem para o planejamento dos serviços e a distribuição adequada dos recursos existentes por desvelar as necessidades e os cuidados necessários.

Palavras-chave: Idoso. Atividades cotidianas. Idoso fragilizado.

INTRODUCTION

Functional capacity or functionality can be defined as a set of behavioral competencies related to the administration and management of daily life, involving physical integrity, cognitive status, self-regarding actions, emotional state, and running of everyday life in the performance of activities and social roles¹. In practice, the functionality of older people is assessed, in most cases, based on their difficulty (reported or observed) in performing basic and instrumental activities of daily living (ADL and IADL, respectively).

ADLs relate to an individual's self-care capacity, involving the performance of activities such as bathing/showering, dressing, toileting, transferring, ambulating, and feeding from a plate placed in front of the person. IADLs require the active participation of older adults in the community and/or their ability to live alone, including activities such as preparing meals, taking medicines, shopping, managing finances, using the telephone, performing light and heavy household tasks, and using transportation².

The proper performance of these activities involves cultural and learning aspects, and demands organized locomotor skills and preserved neurological function^{3,4}. The more complex the activity, the greater the need for adjustment, integration, and harmony between the main functional domains (cognition, mood, mobility, and communication)⁴.

Therefore, beyond the control of chronic conditions, functional capacity must guide the development and adequacy of public policies aimed at this age group⁵.

In turn, functional impairment and disability constitute multifactorial conditions that can affect individuals in different ways and vary in cause, nature, appearance, rhythm, and social implications^{6,7}.

When Katz et al.³ designed the original instrument of functional assessment— worldwide known and used —, they identified the existence of a certain hierarchy in functional acquisition and loss regarding ADLs. According to the authors, functional reconditioning of older adults followed a sequence comparable to that observed in child development. Also, these functions might have some similarities to the behavior in primitive societies, giving them primary biological and psychological conditions, and reflecting a hierarchy of neurological and locomotor responses^{3,8}.

Identifying the progression pattern of difficulties in performing activities can be critical for the development of effective interventions that prevent or delay functional decline, in addition to allowing the recognition of subgroups of individuals who could benefit from a targeted intervention⁹. In this scenario, the purpose of the present study was to identify and hierarchize the difficulties reported by older adults residing in the city of São Paulo in performing activities of daily living in 2000, 2006, and 2010.

METHOD

This is a cross-sectional study that used data from the Health, Well-being, and Aging Study (*Saúde, Bem-Estar e Envelhecimento* - SABE), collected in 2000, 2006, and 2010.

SABE started as a multicenter survey (2000), at the time coordinated by the Pan American Health Organization, with the purpose of profiling the living and health conditions of older people (≥ 60 years) living in seven urban centers in Latin America and the Caribbean (Buenos Aires in Argentina, Bridgetown in Barbados, Havana in Cuba, Mexico City in Mexico, Montevideo in Uruguay, Santiago in Chile, and São Paulo in Brazil). In São Paulo, a probability sample of 2,143 older people (cohort A_{00}) of both genders was selected, assessed, and interviewed. Silva¹⁰ brings the sample design details of the initial study.

Since 2006, the cohort A_{00} was located, and out of the initial total, 1,115 older people were interviewed and reevaluated. The observed difference consisted of deaths (30.3%), refusals (8.2%), relocation (2.4%), institutionalization (0.5%), and people not found (6.5%). A new probability sample of individuals aged 60 to 64 years (a non-existent age range at that moment) was drawn to compose cohort B_{06} ($n = 298$), totaling 1,413 older people (≥ 60 years) of both genders interviewed in that year.

In 2010, a third data collection was conducted with 990 older people located, interviewed, and reevaluated, who belonged to cohorts A and B. As in 2006, a new probability sample of individuals aged 60 to 64 years was drawn to compose cohort C_{10} ($n = 355$), totaling 1,345 older adults interviewed in that year.

Regarding the period of birth of the older adults under study, cohort A (2000) was born before the Second World War; cohort B, during the war; and cohort C (2010), in the immediate post-war period.

The probability samples of each data collection were constructed to represent the older population living in the city of São Paulo, in their respective years. To accomplish that, sample weights related to the variability between the number of interviews in each sector and some sociodemographic conditions (gender and age) were used, according to the year in question.

Each data collection used the following variables:

- Sociodemographic: gender, age, marital status (married, widower, divorced, separated, single), years of schooling (illiterate; 1 to 3 years; 4 to 7 years; and 8 or more years);
- Health condition: number of self-reported illnesses and cognitive decline measured by the modified Mini-Mental State Examination¹¹ (< 13 points);
- Functional status:
 - ADLs: feeding (eating a prepared meal), dressing, toileting, bathing/showering, transferring (from bed to chair and vice-versa), and ambulating (crossing a room walking);
 - IADLs: taking medicines, using the telephone, shopping, managing finances, using transportation, preparing meals, and performing light and heavy household tasks.

The hierarchy of the emergence of reported difficulties in performing activities was based on the scaling proposed by Guttman¹², which first described the proportion of these difficulties reported by older adults, sorting them in descending order. In this scaling, each answer can predict the performance of the previous activity. When the answers do not follow this logic, they are considered “errors,” which this study expressed in proportions. The coefficient of reproducibility (CR) determines the validity of the scaling, measuring the relative fitting degree used to scale the order of activity distribution. We considered $CR \geq 0.9$ (90%) as ideal, with the “error” corresponding to 10%, that is, only 10% or fewer errors identified, a proportion regarded as small¹². This scaling was repeated in the three data collections and subsequently compared between them.

In 2000, SABE was submitted to and approved by the National Committee for Ethics in Research (*Comissão Nacional de Ética em Pesquisa - CONEP*) (report No. 315/99). In 2006 and 2010, it was submitted to and approved by the Committee for Ethics in Research (*Comitê de Ética em Pesquisa - COEP*) of Faculdade de Saúde Pública da Universidade de São Paulo (reports No. 83/06 and No. 2.044/10, respectively).

RESULTS

SABE conducted 2,143 interviews in 2000, 1,413 in 2006, and 1,345 in 2010, most of them answered by the older adults themselves. Only 8.9% (2000), 7.4% (2006), and 7.8% (2010) needed supporting or substitute informants. The three data collections show a higher

prevalence of women, age between 60 to 69 years, married people, reported schooling from 4 to 7 years, and two or more chronic diseases (Table 1).

The prevalence of reported difficulty in performing one or more IADLs was 35.4% (2000), 45.8% (2006), and 41.0% (2010); while for ADLs, it was 16.3% (2000), 13.3% (2006),

Table 1. Distribution (%) of older adults according to sociodemographic characteristics and health conditions. City of São Paulo, 2000, 2006, and 2010.

Characteristics	2000 (n=2.143)	2006 (n=1.413)	2010 (n=1.345)
Gender			
Male	41.2	40.6	40.1
Female	58.8	59.4	59.9
Age (years)			
60 to 64	32.3	30.3	31.6
65 to 69	26.8	28.3	22.6
70 to 74	18.8	17.7	17.7
75 to 79	11.2	12.4	12.8
80 to 84	6.2	6.4	8.2
85 to 89	3.3	3.2	4.8
90 or older	1.4	1.7	2.3
Age (mean±SD)	69.4±0.40	69.6±0.59	70.4±0.64
Marital status			
Married	57.0	57.4	54.8
Divorced/separated	8.6	7.6	10.0
Widower	24.5	30.7	31.7
Single	4.9	4.3	3.5
Schooling (years)			
Illiterate	21.2	15.7	11.9
1 to 3	26.0	26.5	22.6
4 to 7	35.2	38.6	37.5
8 or more	17.6	19.2	28.0
Cognitive decline			
No	86.8	87.8	89.6
Yes	13.2	12.2	10.4
Number of diseases			
None	24.9	16.9	16.6
One	31.0	28.1	28.0
Two or more	44.1	55.0	55.4

Source: SABE Study, 2000, 2006, and 2010.
SD: standard deviation.

and 17.5% (2010). In ten years of follow-up, the variability in prevalence among women ranged from 42.3 to 54.6% for IADL impairment, and 17.0 to 20.4% for ADL. For men, it varied from 25.6 to 33.1% for IADL impairment, and 8.0 to 13.7% for ADL.

In all periods analyzed, advancing age was associated with a worse functional performance for both genders (Table 2).

Table 3 demonstrates the proportion of reported difficulties in performing activities of daily living in 2000, 2006, and 2010. In the three periods, functional decline started with IADL impairment, progressing steadily to ADL. The CR and probability of error found in each year were within limits established as ideal ($CR > 0.9$). The proportions of

Table 2. Distribution (%) of older adults according to difficulty with basic and instrumental activities of daily living, gender, and age group. City of São Paulo, 2000, 2006, and 2010.

Difficulty with basic activities of daily living						
Age group (years)	Women			Men		
	2000	2006	2010	2000	2006	2010
60 to 64	28.6	41.2	37.5	17.0	24.9	18.1
65 to 69	34.5	46.6	32.9	17.9	25.5	24.3
70 to 74	45.2	54.4	51.7	32.0	32.8	34.5
75 to 79	54.0	70.4	55.5	34.4	51.3	33.9
80 to 84	67.6	78.4	75.0	52.1	57.5	52.1
85 to 89	88.8	93.7	89.9	61.0	75.1	58.1
≥90	92.5	96.5	84.3	92.0	82.4	58.2
Total	18.1	17.0	20.4	13.7	8.0	13.1
Difficulty with instrumental activities of daily living						
Age group (years)	Women			Men		
	2000	2006	2010	2000	2006	2010
60 to 64	12.1	11.5	11.7	8.6	5.2	9.3
65 to 69	13.2	9.5	11.2	11.3	1.3	11.2
70 to 74	17.3	14.4	17.9	15.4	6.9	12.1
75 to 79	22.6	21.9	25.3	19.0	19.3	14.2
80 to 84	29.6	34.9	37.3	25.8	21.1	32.2
85 to 89	47.8	44.8	43.6	27.5	38.2	24.4
≥90	71.8	69.9	78.2	62.6	42.0	20.4
Total	42.3	54.6	48.8	25.6	33.1	29.3

Source: SABE Study, 2000, 2006, and 2010.

difficulty varied between activities: using transportation (17.6–22.7%), performing heavy household tasks (17.7–28.8%), shopping (13.4–17.4%), taking medicines (11.3–14.0%), dressing (9.1–12.9%), using the telephone (8.2–12.4%), managing finances (8.4–25.0%), bathing/showering (6.2–7.8%), performing light tasks (5.9–13.2%), preparing meals (5.5–7.2%), ambulating (3.6–5.7%), transferring (4.6–8.8%), toileting (4.5–8.6%), and feeding (2.9–3.6%).

Figure 1 presents the evolution of the functional performance of activities of daily living analyzed in the three cohorts. There were variations in the performance of all activities.

Table 3. Proportion (%) of older adults residing in the city of São Paulo according to difficulty with activities of daily living. SABE Study, 2000, 2006, and 2010.

Activities	2000(%) (n=2.143)	Activities	2006(%) (n=1.413)	Activities	2010(%) (n=1.345)
Using transportation	19.9	Performing heavy tasks	28.8	Performing heavy tasks	26.7
Performing heavy tasks	17.7	Managing finances	25.0	Managing finances	19.6
Shopping	14.3	Using transportation	22.7	Using transportation	17.6
Taking medicines	14.0	Shopping	17.4	Shopping	13.4
Dressing	12.9	Performing light tasks	13.2	Taking medicines	12.3
Using the telephone	10.9	Using the telephone	12.4	Dressing	12.2
Managing finances	8.4	Taking medicines	11.3	Performing light tasks	9.5
Bathing/showering	6.9	Dressing	9.1	Toileting	8.6
Performing light tasks	5.9	Transferring	8.8	Using the telephone	8.2
Preparing meals	5.5	Preparing meals	7.2	Bathing/showering	7.8
Ambulating*	4.7	Bathing/showering	6.2	Transferring	7.2
Transferring**	4.6	Toileting	5.8	Preparing meals	6.7
Toileting	4.5	Ambulating	3.6	Ambulating	5.7
Feeding	3.6	Feeding	2.9	Feeding	2.9

Source: SABE Study, 2000, 2006, and 2010.

*Crossing a room walking; **getting from bed to chair;

■ Instrumental activities of daily living; ■ Basic activities of daily living.

Managing finances and performing light tasks had the greatest variations, while feeding had the lowest.

Regarding ADLs, there was an overall worsening in functional impairment for both genders, happening in all activities analyzed among women and in all but feeding and dressing among men (Table 4).

Table 5 shows the prevalence of difficulties with functional performance of IADLs in each period analyzed, stratified by activity, gender, and age. In ten years of follow-up, higher functional impairment was present for most IADLs in the different age groups. Out of the eight activities evaluated, women had a worse performance in 50% of them, and men, in 37.5%.

DISCUSSION

In the present study, the proportion of interviewees with IADL limitations was consistently higher than of those with ADL limitations in all age groups, and for both genders. This result corroborates the expected impairment of functional skills during the aging process: first, physical functional limitations (less serious and more common); then, activities considered more complex (IADLs); and later, the most basic ones related to self-care (ADLs)¹³.

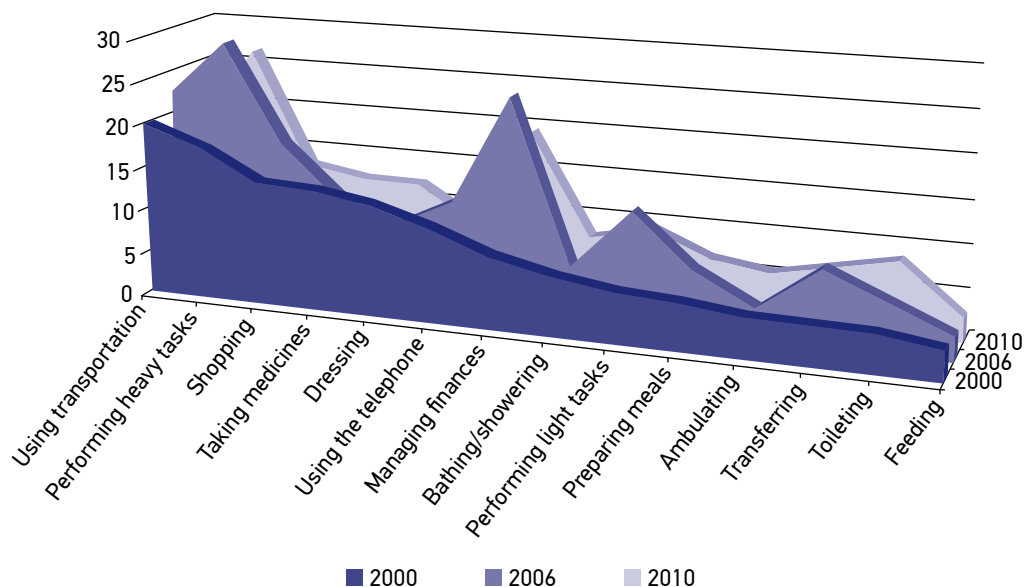


Figure 1. Evolution of difficulty with activities of daily living for older adults. City of São Paulo. SABE Study, 2000, 2006, and 2010.

Table 4. Distribution (%) of older adults according to difficulty with basic activities of daily living, gender, and age group. City of São Paulo, 2000, 2006, and 2010.

Women									
Age group (years)	Dressing			Bathing/showering			Ambulating		
	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	10.6	6.3	10.3	3.1	2.0	3.6	2.0	0.5	2.0
65 to 69	12.0	6.6	8.0	5.5	1.9	3.8	2.4	2.1	3.0
70 to 74	15.6	8.6	9.8	8.0	6.1	3.8	3.7	3.4	3.1
75 to 79	19.4	17.7	16.3	5.9	10.9	9.1	7.8	5.0	4.6
80 to 84	18.5	23.4	28.1	18.8	21.5	25.3	12.3	16.9	15.1
85 to 89	31.2	31.2	36.8	30.6	21.8	26.6	25.4	18.1	26.3
≥90	35.1	63.6	57.8	49.0	67.4	47.5	37.6	43.8	46.9
Total	14.7	11.6	14.8	7.8	7.4	8.8	5.3	4.4	6.4
Age group (years)	Transferring			Toileting			Feeding		
	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	2.9	8.5	2.5	3.3	4.3	3.8	1.7	–	1.0
65 to 69	3.1	6.0	3.3	3.7	4.2	5.9	1.1	–	1.5
70 to 74	3.6	10.1	6.2	3.1	6.3	6.3	2.5	2.8	2.0
75 to 79	5.4	11.2	9.1	7.2	8.6	9.1	4.5	5.1	2.5
80 to 84	13.2	25.0	20.7	10.2	16.2	23.5	5.8	8.0	7.9
85 to 89	17.6	25.6	28.5	17.2	14.2	25.9	15.0	17.7	16.7
≥90	33.5	51.1	53.5	30.6	48.5	44.2	24.8	39.6	18.5
Total	5.1	11.2	8.6	5.7	7.4	9.5	3.1	3.2	3.4
Men									
Age group (years)	Dressing			Bathing/showering			Ambulating		
	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	6.2	1.8	6.0	3.5	0.9	3.4	1.8	0.7	2.6
65 to 69	8.6	–	5.1	2.1	–	5.1	2.3	–	5.1
70 to 74	10.4	6.9	5.3	7.2	5.3	5.1	4.7	2.7	2.9
75 to 79	16.4	15.3	10.8	8.6	15.6	7.2	6.6	5.9	4.5
80 to 84	22.5	15.9	24.1	7.9	13.9	18.9	7.3	10.0	13.4
85 to 89	22.2	27.0	20.4	16.5	25.3	14.6	8.1	15.2	8.3
≥90	54.7	28.4	20.4	56.2	31.8	13.8	39.0	21.5	10.9
Total	10.5	5.3	8.3	5.5	4.6	6.2	3.8	2.5	4.5

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Table 4. Continuation.

Men									
Age group (years)	Transferring			Toileting			Feeding		
	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	1.4	4.3	3.2	1.8	2.5	4.5	2.5	0.9	0.6
65 to 69	2.8	1.3	3.9	0.9	–	6.3	3.4	–	1.7
70 to 74	6.6	5.3	3.1	4.8	3.9	5.6	3.4	4.0	2.4
75 to 79	4.7	11.1	6.9	6.7	5.8	8.6	6.4	6.6	5.5
80 to 84	6.3	11.0	16.5	6.6	7.8	20.7	6.8	4.8	3.6
85 to 89	10.6	20.7	10.3	10.6	23.3	13.4	12.9	13.6	3.5
≥90	29.6	28.4	10.0	43.3	25.0	10.5	41.5	10.2	3.3
Total	3.9	5.4	5.0	3.8	3.4	7.1	4.3	2.4	2.1

Source: SABE Study, 2000, 2006, and 2010.

Table 5. Distribution (%) of older adults according to difficulty with instrumental activities of daily living, gender, and age group. City of São Paulo, 2000, 2006, and 2010.

Women												
Age group (years)	Using transportation			Performing heavy tasks			Performing light tasks			Taking medicines		
	2000	2006	2010	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	12.6	16.4	11.2	18.8	28.8	28.6	3.7	12.6	6.6	9.3	5.3	4.6
65 to 69	16.8	24.4	14.4	22.0	29.3	24.1	5.5	11.2	10.9	7.0	6.9	2.3
70 to 74	24.4	21.5	22.3	26.4	42.2	36.9	5.6	14.2	6.0	10.7	7.9	13.1
75 to 79	36.3	43.2	22.7	26.7	51.8	44.9	7.5	25.1	15.0	14.1	17.5	14.6
80 to 84	51.7	55.6	38.5	41.3	61.6	50.6	15.1	35.6	24.9	23.5	35.33	33.6
85 to 89	82.0	77.9	63.6	47.2	59.5	64.7	24.5	42.2	32.5	50.1	40.9	40.3
≥90	86.2	92.7	65.9	51.8	84.3	51.6	35.7	68.6	27.5	57.0	61.4	60.2
Total	25.2	29.6	22.0	25.2	39.0	35.7	7.1	18.0	12.1	12.8	12.4	13.0
Age group (years)	Using the telephone			Managing finances			Shopping			Preparing meals		
	2000	2006	2010	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	6.2	8.3	4.6	3.6	2.3	1.1	10.7	11.1	7.4	1.6	3.0	3.4
65 to 69	7.6	6.5	4.3	5.1	6.0	6.4	9.7	16.9	10.4	2.0	2.5	5.2
70 to 74	14.5	12.4	7.6	7.9	5.4	8.2	20.4	15.3	15.5	6.1	5.9	4.1
75 to 79	14.0	16.2	4.7	11.4	20.8	13.3	26.6	32.9	18.0	5.8	11.7	7.3
80 to 84	23.4	27.3	21.1	22.7	34.7	23.1	34.0	50.6	35.1	15.1	28.9	16.1
85 to 89	42.7	44.8	27.8	40.0	30.9	36.8	56.2	59.8	42.5	26.1	38.3	27.3
≥90	63.6	62.9	50.2	38.2	73.4	54.6	50.0	79.5	49.2	32.7	61.1	32.9
Total	12.5	13.4	9.0	8.9	29.4	22.8	18.0	22.3	16.4	5.4	8.8	7.6

Continue...

Table 5. Continuation.

Men												
Age group (years)	Using transportation			Performing heavy tasks			Performing light tasks			Taking medicines		
	2000	2006	2010	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	5.4	6.1	5.8	3.0	9.7	9.6	1.9	5.3	3.9	11.7	2.4	8.3
65 to 69	6.4	4.4	5.4	4.5	9.7	9.5	1.5	3.0	5.2	11.4	8.0	4.6
70 to 74	14.6	15.7	14.5	10.5	12.1	11.8	7.4	5.5	2.4	20.5	15.0	8.5
75 to 79	19.2	25.8	12.4	10.9	22.5	17.2	5.8	9.2	7.4	15.8	11.8	19.4
80 to 84	37.8	33.5	32.0	15.7	33.9	21.3	8.5	13.1	9.7	25.0	22.7	25.1
85 to 89	46.9	50.1	20.5	19.2	38.8	29.3	15.1	25.5	15.6	41.5	34.5	27.5
≥90	85.2	59.7	42.6	47.7	46.1	61.0	34.9	29.0	21.2	63.5	55.1	36.5
Total	12.5	12.6	10.9	7.2	14.0	13.3	4.3	6.2	5.5	15.7	9.7	11.2
Age group (years)	Using the telephone			Managing finances			Shopping			Preparing meals		
	2000	2006	2010	2000	2006	2010	2000	2006	2010	2000	2006	2010
60 to 64	3.0	6.3	2.5	2.5	3.5	2.5	2.3	6.5	4.1	2.4	1.9	3.7
65 to 69	4.9	6.6	3.0	4.5	3.7	2.9	6.7	6.6	6.7	3.0	2.8	4.1
70 to 74	12.2	14.5	12.0	12.1	10.8	14.6	13.4	10.5	12.4	7.8	6.7	7.1
75 to 79	11.5	12.9	9.8	9.5	15.4	7.9	12.6	15.2	5.3	8.8	6.8	5.4
80 to 84	28.9	23.5	13.4	22.0	17.4	20.5	23.2	23.1	22.6	11.0	13.2	7.4
85 to 89	29.3	42.8	17.0	26.7	26.0	19.5	27.0	42.5	23.0	21.3	21.5	8.2
≥90	51.5	47.8	35.4	42.4	46.7	19.9	56.5	39.3	42.6	44.8	21.2	23.5
Total	8.7	10.8	7.0	7.6	18.6	14.8	9.0	10.3	8.9	5.7	4.8	5.4

Source: SABE Study, 2000, 2006, and 2010.

A possible analysis of these results involves the effects of age, period, and cohort¹⁴. The three periods investigated showed a positive gradient between the increase in age and prevalence of difficulty in performing IADLs and ADLs. This finding agrees with another study conducted in high-, middle-, and low-income countries¹⁵. In the United States, IADL impairment increased over 27 years (1982 to 2009) among younger cohorts after adjustments for the effects of time/age, while ADL remained stable¹⁴. According to the authors, the trend found can be explained, on the one hand by technological advances in health care, which is associated with a higher survival of more vulnerable older people; and, on the other, by a possible information bias related to the need to use social insurance, available for the more debilitated in this country.

Similarly to a work by Lin et al.¹⁴, the present study shows that the older people in our midst also have an increasing trend in IADL impairment and stability in ADL for both genders, associated with birth cohorts.

According to Christensen et al.¹⁶, two opposing processes could affect the health of successive cohorts. On the one hand, a later cohort would benefit from the progress in health care resulting in more effective prevention of diseases, better treatments, and benefits of higher living standards, including greater access to education and healthier lifestyles. Such progress would help later cohort members to reach a more advanced age in better health conditions, representing the “success of success”: health improvements earlier in life resulting in healthier cohorts at a more advanced age. On the other hand, due to the lives saved, this later cohort would be larger than the previous.

However, these additional survivors could have relatively weak health and even have died, if they lived in previous cohorts with less favorable living conditions and less access to medical care. This process would be the “failure of success,” as it would reduce the average health of the population after allowing very fragile individuals to reach a more advanced age. For instance, when comparing a Danish cohort born in 1915 with another born in 1905, these authors demonstrated that the younger cohort had better survival rates and performance in cognitive tests and ADLs than the previous one, despite being two years older at the time of evaluation. This finding suggests that more people are aging with better overall performance. If this development continues, future functional issues and care needs of very old people could be lower than expected based on the current load of disability¹⁶.

In addition, César et al.¹⁷ pointed out that the measure of functional impairment in population surveys would catch only the most important losses of functional capacity, while the more discreet ones could go unnoticed by the interviewees. In this regard, Cella et al.¹⁸ suggest the application of measuring scales of greater extension in investigations including individuals with different levels of functional impairment. These scales should have a broader spectrum of activities with increasing difficulty, involving mobility, strength, endurance, and cognition.

Bleijenberg et al.¹⁹ investigated a prospective Dutch cohort regarding its performance in 15 activities, and found that the advanced ones, which demand a proper physical execution – e.g., traveling –, declined sooner than ADLs, while difficulties with IADLs, which require cognitive abilities – e.g., using the telephone, taking medicines, and managing finances –, developed later than with ADLs – e.g., bathing/showering, dressing, and transferring.

In all waves of the present study, difficulties in carrying out activities directly related to the locomotor system – using transportation, performing household tasks, and shopping – were the most prevalent. It is noteworthy that the second most prevalent illness among older adults in the city of São Paulo is joint disease²⁰, which is directly related to the performance of these activities and a worse quality of life, as it restricts their independence and, over time, could compromise their autonomy.

The hierarchy observed in the ten years of follow-up of the SABE Study remains from IADLs to ADLs, despite some variability. Bendayan et al.⁹ found a similar hierarchical pattern of decrease rates when analyzing six ADLs from North-American (HRS) and English

(ELSA Study) samples, with a 10-year gap. In both cohorts, feeding had the lowest prevalence and variation over the years, as in the present study.

Progressive functional decline leads to an increase in health care demands, specifically for care needs. Nunes et al.²¹ proposed a classification of care needs related to older people based on the hierarchy of activities of daily living, stratified into minimum, moderate, and maximum, to adjust the planning and manage healthcare resources.

Care is closely associated with the socioeconomic context – both at micro (families) and macro (funded by society or country) levels –, traditions, politics, and culture²², which reinforces the urgent need for establishing long-term care policies.

In the period analyzed, women presented a greater functional impairment when compared to men, which could be due to their longer life expectancy and different health, social, cultural, and economic conditions, as corroborated by other studies²³⁻²⁵.

The World Health Organization, in the publication “Active ageing,” establishes as fundamental goals maintaining autonomy and independence, controlling multiple diseases, providing care, and reducing inequalities during aging²⁶. In this context, in 2006, the reprint of the National Health Care Policy for Older People brought a paradigm shift by considering functional capacity as the great divide in the evaluation of older people, classifying them as independent and vulnerable to frailty or frail. Thus, states and cities would have this classification as a basis to reorder and readjust existing services.

A limitation of the present study was the use of self-reported questions in the performance assessment of activities of daily living, which could result in information bias. However, it brings important considerations regarding older people and the organization of public health and social policies.

Due to the fast increase in the older population, maintaining their autonomy and independence should be a priority for the health system and society. The results of the present study show that a standard intervention approach that focuses on older adults' ADL and/or IADL impairment might not work since functional performance varies with advancing age, between genders, and in different cohorts.

CONCLUSION

The prevalence of difficulty reported by older people in performing ADLs and IADLs increased in the period of ten years (2000 to 2010). The variability in the prevalence of functional ADL and IADL impairment was greater among women when compared to men, and with advancing age. Regarding hierarchy, the activities with the highest reported difficulty were using transportation, performing heavy tasks, and managing finances, while feeding was the least prevalent.

Identifying and prioritizing the difficulties reported by older people in performing activities of daily living help the planning of services and adequate distribution of existing resources as they reveal the needs and care required.

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