UNIVERSIDADE FEDERAL DE SANTA CATARINA

CENTRO DE CIÊNCIAS, TECNOLOGIAS E SAÚDE DO CAMPUS ARARANGUÁ

DEPARTAMENTO DE CIÊNCIAS DA SAÚDE

CURSO DE FISIOTERAPIA

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How much time in sedentary behavior should be reduced to decrease fear of falling and falls in community-dwelling older adults?

ARARANGUÁ

2021

How much time in sedentary behavior should be reduced to decrease fear of falling and falls in community-dwelling older adults?

Trabalho Conclusão do Curso de Graduação em Fisioterapia do Centro de Ciências da Saúde da Universidade Federal de Santa Catarina como parte dos requisitos para a obtenção do título de Bacharel em Fisioterapia. Sob orientação da Professora Drª Núbia Carelli Pereira de Avelar.

ARARANGUÁ

2021

Este trabalho é dedicado a todos que contribuíram direta ou indiretamente em minha formação acadêmica, em especial a minha família, professores e colegas.

AGRADECIMENTOS

SUMÁRIO

1 **HOW MUCH TIME IN SEDENTARY BEHAVIOR SHOULD BE REDUCED TO**

2 **DECREASE FEAR OF FALLING AND FALLS IN COMMUNITY-DWELLING**

3 **OLDER ADULTS?**

4

1 **Abstract**

2 Fear of falling and history of falls are frequent situations in older adults, which can be

3 aggravated by sedentary behavior (SB). The objective of this study was to establish SB

4 cut-off values that discriminate falls and fear of falling in older adults and verify the

5 association between these conditions. This was a cross-sectional study including 306

6 community-dwelling older adults. SB was assessed by the International Physical

7 Activity Questionnaire. The outcomes were history of falling in the last 12 months and

8 fear of falling (higher than 23 points in the Falls Efficacy Scale International-Brazil).

9 The cut-off points found were > 4.1 [AUC: 0.59 (95%CI: 0.53-0.65)] and > 3.9

10 hours/day [AUC: 0.58 (95%CI 0.52-0.64)] for fear of falling and history of falls,

11 respectively. Older adults with SB had 1.71 (95%CI 1.03; 2.84) and 1.75 (95%CI 1.06;

12 2.89) greater odds of having fear of falling and suffering falls, respectively.

13

14 **Keywords:** Accidental Falls; Aged; Independent Living; Risk Factors

1   **Introduction**

2   Fear of falling can be defined as an exacerbated concern about falling during

3   daily activities (Jung, 2008) and its current prevalence in community-dwelling older

4   adults differs in different countries, with variations between 41.7% in Spain (Lavedán et

5   al., 2018), 48.40% in Brazil (Canever et al., 2021) and 75.6% in Korea (Oh et al., 2017).

6   Fear of falling is associated with a higher occurrence of falls (Young & Mark Williams,

7   2015), constituting a public health problem due to its high prevalence worldwide

8   (Almeida et al., 2019), and also the consequences resulting from this condition (Vieira

9   et al., 2018).

10   Fear of falling and a history of falls are associated with several predisposing

11   conditions, among which gender (Moreira et al., 2020; Vitorino et al., 2019), health

12   perception (Ferreira et al., 2018; Vitorino et al., 2017), multimorbidity (Lavedán et al.,

13   2018; Moreira et al., 2020), environmental factors (Ambrose et al., 2013; Canever et al.,

14   2021) and cognitive decline stand out (Akyol et al., 2018; Jung, 2008). In addition, fear

15   of falling and a history of falls may predispose an individual to adverse health events

16   such as increased depressive symptoms (Afrin et al., 2020; Hajek & König, 2020),

17   reduced physical activity (Lopes et al., 2009; Pimentel & Scheicher, 2009), functional

18   decline (Auais et al., 2018; Zusman et al., 2019), hospitalizations (Khow &

19   Visvanathan, 2017) and mortality (Kim & Bae, 2020).

20   It is already established in the literature that physical inactivity is associated with

21   fear of falling (Kendrick et al., 2014; Kumar et al., 2016; Pimentel & Scheicher, 2009).

22   However, the association with SB still remains understudied (Kotlarczyk et al., 2020;

23   Stubbs et al., 2014). SB can be defined as any behavior that has an energy expenditure

24   of less than 1.5 metabolic equivalent (MET) in a sitting, lying or reclining position

25   (Sedentary Behaviour Research Network, 2012). It is worth noting that the concept of

SB differs from physical inactivity as coexisting behavior profiles can be observed, since an individual can have SB and be physically active (Omorou et al., 2016). However, physical activity can delay, but not compensate for the deleterious effects of SB (Biswas et al., 2018). Moreover, it is noteworthy that SB is prevalent in older adults; a review study that analyzed data from six countries (Australia, Canada, Norway, Spain, United Kingdom and United States) found that this behavior affects 67% of older adults, and they spend more than 8.5 hours a day in SB (Harvey et al., 2013). Similarly, Brazilian studies suggest that this population spends about 4.5 hours per day in a sitting position (Leão et al., 2020).

SB is associated with several chronic health conditions (Gennuso et al., 2013), reduced self-esteem (Rezende et al., 2014), increased risk of cardiovascular disease (Grøntved & Hu, 2011; Thorp et al., 2011) and functional decline (Brandão et al., 2019). Previous studies have defined SB cut-off points for different outcomes such as musculoskeletal pain (3.5 hours in SB per day) (Stubbs et al., 2014), mental disorder (about 5 hours in SB per day) (Silva et al., 2017) and increased mortality (12.5 hours in SB per day) (Diaz et al., 2017). However, the SB time for predicting fear of falling and falls is still unknown.

The World Health Organization (World Health Organization, 2020) highlights the importance of reducing SB time in older adults, but does not present reference values that can be used for education/guidance for this population. Furthermore, no studies were found that defined average weekly discriminative values to be oriented to reduce SB in community-dwelling older adults and which verified the association of this behavior with fear of falling and history of falls. The definition of this discriminative value may serve as a parameter to reduce such behavior in older adults, aiming to reduce these health problems. Thus, the objectives of this study were: 1) to

1 establish SB cut-off values that discriminate falls and fear of falling in community-

2 dwelling older adults; and 2) to verify the association between SB and fear of falling

3 and falls according to the established cut-off point.

4

5 **Materials and Methods**

6 *Study design*

7   This was a cross-sectional study with a probabilistic sample, carried out with

8 older adults (60 years or more) from the municipality Balneário Arroio do Silva/SC,

9 Brazil. This study was approved by the Ethics Committee on Human Research of the

10 Federal University of Santa Catarina under CAAE number 87776318.3.0000.0121. All

11 participants provided written informed consent. This study is in accordance with the

12 ethical principles contained in the Declaration of Helsinki.

13

14 *Population and sample*

15   The sample size calculation took into account the total older adults registered in

16 the municipality's primary care system (n=2833) according to the following parameters:

17 unknown prevalence for the outcomes of 50%, confidence level of 95%, sampling error

18 of six percentage points, and 20% for expected losses, thus estimating the need for 302

19 volunteers for the study. The study inclusion criteria were men and women aged 60

20 years or more that living in the urban area of the municipality of Arroio do Silva. The

21 individuals participating in the study had to be registered with the primary care system

22 in the municipality of Balneário Arroio do Silva. In this context, information about the

23 address and name of the individual was collected. Later, the researchers randomly

24 selected individuals and went to their homes to ask about their interest in participating

25 in the study. Individuals who agreed to participate in the study and were able to answer

1   the questions promptly were included in this study.

2   We excluded the older adults who were bedridden, hospitalized, dependent or

3   who could not answer the questionnaires, who lived in long-stay institutions, or who

4   had changed their residential address.

5

6   *Independent variable*

7   SB was assessed by two questions on time spent sitting on a weekday and a

8   weekend day from the International Physical Activity Questionnaire (IPAQ). The IPAQ

9   was validated for the Brazilian older adult population (Benedetti et al., 2004; Benedetti

10   et al., 2007) and used in several previous studies to evaluate SB (Cleland et al., 2018;

11   Tomioka et al., 2011). This questionnaire showed reasonable to substantial (r= 0.26-

12   0.70) validity for SB in UK older adults (Cleland et al., 2018). The intraclass correlation

13   coefficient (ICC) in the study by Tomioka et al. (2011) ranged from 0.39 to 0.66 in men

14   and 0.30 to 0.67 in older adult women. Spearman's correlation coefficient regarding the

15   validity data ranged from 0.42 to 0.53, indicating that IPAQ has adequate validity to

16   assess SB in older adults.

17   The following formula was used to obtain the average time spent sitting:

18   ([Sitting time weekday * 5 + Sitting time weekend * 2] /7) (Cleland et al., 2018).

19

20   *Independent variables*

21   *History of falls:* The older adults were asked about their history of falls in the past 12

22   months, being categorized dichotomously with or without a history of falls (yes or no).

23   The occurrence of a fall was defined as an event characterized by the unintentional

24   displacement of the body from the standing position to a lower level, determined by

25   multifactorial circumstances (Liu-Ambrose et al., 2019).

Fear of falling: Fear of falling was assessed by *Falls Efficacy Scale International (FES-I)* (Yardley et al., 2005) translated and adapted by Camargos et al. (2010) for use in Brazil (FES-I Brazil). This scale assesses the concern about suffering falls when performing 16 daily life tasks, from performing simple activities such as dressing, undressing and bathing, to more complex activities such as walking on uneven surfaces, going up and down ramps and walking on slippery surfaces. The score ranges from 1 to 4 for each task, and the total scale score can vary from 16 to 64 points (Camargos et al., 2010). The cut-off point established to discriminate high fear of falling in older adults in Brazil is > 23 points (Camargos et al., 2010).

Adjustment Variables

The ROC curve was initially calculated to determine the SB cut-off points related to fear of falling and history of falls, and then logistic regression was performed to explain the relationship between a binary dependent variable and other independent variables (Wang et al., 2011). After calculating the SB cut-off points related to fear of falling and history of falling, multivariable logistic regression analysis was performed to verify the association between these conditions. Thus, the following adjustment variables were used: sex (female and male) (Ambrose et al., 2013; Oh et al., 2017), age group (60-69 years; 70-79 years and over 80 years) (Ambrose et al., 2013; Danielewicz et al., 2018), presence of multimorbidity by considering the presence of two or more self-reported medical conditions (spinal disease, arthritis or rheumatism, cancer, diabetes, bronchitis or asthma, heart or cardiovascular disease, chronic renal failure, tuberculosis, cirrhosis, stroke/cerebrovascular ischemia, osteoporosis, hypertension, labyrinthitis, and sphincter incontinence) (Deandrea et al., 2010; Lavedán et al., 2018) and physical activity. The physical activity level was assessed by the International

Physical Activity Questionnaire (IPAQ), which was developed in 1998 by the World Health Organization and validated in Brazil by (Benedetti et al., 2004; Benedetti et al., 2007). The instrument presents 27 questions related to physical activities performed in a normal week with vigorous, moderate and light intensity, with a minimum duration of 10 continuous minutes, distributed in four dimensions of physical activity (work, transportation, domestic activities and leisure,) and the time spent per week in a sitting position. The physical activity level for leisure was categorized as sufficiently active (>150 minutes) and insufficiently active (<150 minutes) (Pimentel & Scheicher, 2009; World Health Organization, 2020).

Statistical Analysis

Data were independently tabulated by two researchers in Microsoft Excel software (2019) and later entered into the statistical program SPSS (IBM®, Chicago, IL, USA), version 23.0. The significance level adopted was 5%. Descriptive analyses were performed and the values of proportions (%) and respective 95% confidence intervals (95%CI) were presented.

Receiver Operating Characteristic Curves (ROC curve) were constructed for the analysis of sensitivity, specificity, Youden Index, odds ratio for positive (+LR), negative (-LR) tests, positive predictive value (PPV), negative predictive value (NPV), for the outcome variable. Subsequently to the establishment of the cut-off point in the SB to discriminate fear of falling and history of falls, an association analysis was carried out between the variables, through multivariable logistic regression, estimating the crude and adjusted odds ratios (OR), with their respective confidence intervals (95%CI). The multicollinearity test required for binomial logistic regression was performed using the Variance-inflation factor (VIF) whose value adopted as the cutoff point was > 10

1 (Maranhão et al., 2015). The test showed an absence of multicollinearity between the

2 independent variables studied, since the highest VIF value observed was 1.45.

3

4 **Results**

5   From the 2883 older adults registered in the primary care system, 540 older

6 adults were randomly selected. However, 232 were excluded from the study for the

7 following reasons: 24 deaths, 68 losses, 64 changes of address, 16 for being bedridden

8 or dependent older adults, 29 refusals and 31 for incomplete registrations. Thus, a total

9 of 308 community-dwelling older adults participated in the study (Figure 1).

10   The majority of participants was female (57.8%), in the age group 60-69 years

11 (54.7%), with multimorbidity (61.9%) and insufficiently active (87.2%). From the 299

12 participants who completed the FES-I-Brazil, 140 (46.8%) were classified as having

13 "High fear of falling". A reason for not completing the FES-I-Brazil was the

14 participant's refusal to answer any of the 16 items on the scale. Among those who

15 presented high fear of falling most were women (72.9%), with multimorbidities (77.7%)

16 and insufficiently active (91.3%). Regarding the history of falls, 306 participants

17 answered this item and 32.7% of community-dwelling older adults had a history of falls.

18 Among the older adults with a history of falls, the majority was women (72.0%), with

19 multimorbidities (71.0%) and insufficiently active (87.0%). The data characterizing the

20 sample according to fear of falling and history of falls are described in Table 1.

21   The cut-off point in SB to discriminate fear of falling was > 4.14 hours/day [area

22 25 under curve (AUC): 0.60 (95%CI: 0.54; 0.65), sensitivity: 49.29% (95%CI: 40.7;

23 57.9), specificity: 67.30% (95%CI: 59.4; 74.5), Youden J statistic: 0.17 (95%CI: 0.08;

24 0.24), 2 +LR: 1.51 (95%CI: 1.10; 2.00), -LR: 0.75 (95%CI: 0.60; 0.90), +PV: 57.00

25 (95%CI: 3 50.10; 63.70) and -PV: 60.10 (95%CI: 55.4; 64.70)].

1   The cut-off point for history of falls was > 3.90 hours/day [AUC: 0.59 (95%CI
2   0.53; 0.64), sensitivity: 58.00% (95%CI: 47.70; 67.80), specificity: 58.25% (95%CI:
3   51.20; 65.10), Youden J statistic: 0.17 (95%CI: 0.07; 0.24), +LR: 1.39 (95%CI: 1.10;
4   1.80) and -LR: 0.72 (95%CI: 0.60; 0.90), +PV: 40.30 (95%CI: 34.80; 46.00) and -PV:
5   74.10 (95%CI: 68.80; 78.70)] (Table 2)

6   The association between the SB, fear of falling and history of falls variables is
7   described in Table 3. The multivariable logistic regression analysis showed that older
8   adults with SB had 1.76 (95%CI 1.06; 2.89) and 1.71 (95%CI 1.03; 2.84) higher odds of
9   having a history of falls and fear of falling, respectively, compared to those without this
10   condition, even after adjusting for gender, age group, multimorbidity, and physical
11   activity.

12

13   **Discussion**

14   The main findings of this study suggest that the discriminative points associated
15   with fear of falling and history of falls for community-dwelling older adults were 4.1
16   and 3.9 hours/day, respectively. In addition, older adults who spent more time in SB
17   than the suggested values were more likely to have fear of falling and history of falling,
18   respectively, when compared to older adults without this behavior.

19   Some studies have shown that fear of falling can contribute to increased SB time
20   (Kotlarczyk et al., 2020; Stubbs et al., 2014). However, there is no research that proves
21   that SB could increase fear of falling. The present study demonstrated that community-
22   dwelling older adults who spent longer than 4.1 hours/day on SB showed a higher fear
23   of falling. This association may be justified because SB contributes to developing
24   depressive symptoms (Zhu et al., 2018), functional decline (Brandão et al., 2019) and
25   falls (Rezende et al., 2014), These factors predispose community-dwelling older adults

to fear of falling. In addition, fear of falls leads to the belief that sitting is safer than standing or walking, and thus significantly contributes to older adults remaining seated, consequently increasing the time spent in SB (Kotlarczyk et al., 2020).

The present study also found that older adults with SB were about 1.71 (95%CI 1.03; 2.84) more likely to be afraid of falling than older adults without this condition, which may be directly related to the consequences of SB. Padoin et al. (2010) carried out a comparative analysis between older adults who practiced physical exercises and older adults with SB, and concluded that sedentary older adults had a greater fear of falling. A possible explanation could be the association of fear of falling with reductions in mobility, balance, and restrictions in functional activities (Padoin et al., 2010; Vellas et al., 1997). Thus, a vicious cycle begins in which the consequences of SB can contribute to the fear of falling, and the fear of falling can lead to important functional restrictions (Ambrose et al., 2013), increasing SB.

There are studies regarding SB and history of falls stating that falls can contribute to an increase in SB in older adults (Rezende et al., 2014). In the present study, it was found that staying more than 3.9 hours/day in SB is associated with a risk of the older person falling. SB is associated with reduced bone mass (Zusman et al., 2019), decline in balance (Thibaud et al., 2012), muscle weakness (Gianoudis et al., 2015), increased risk for sarcopenia (Gianoudis et al., 2015), reduction in instrumental activities (Pimentel & Scheicher, 2009), gait disturbances (Pimentel & Scheicher, 2009), decrease in functional capacity (Gianoudis et al., 2015) and consequently may contribute to the occurrence of falls.

Furthermore, the present research showed that older adults with SB presented 1.76 (95%CI 1.06; 2.89) higher chances of suffering falls than those without this condition. These findings corroborate the study by Pimentel & Scheicher (2009), which

verified that sedentary older adults have 15.6 times more risk of suffering falls when assessed by the Berg scale. The possible explanation for this result is the fact that physical activity contributes to a lower incidence of falls in older adults and that SB causes important physiological, social and psychological changes (Pimentel & Scheicher, 2009).

As already mentioned, previous studies have aimed to find SB cut-off points for different health outcomes, such as musculoskeletal pain (Stubbs et al., 2014), developing mental disorder (Silva et al., 2017), frailty (Silva et al., 2018) and increased mortality (Diaz et al., 2017). Silva et al. (2018) also assessed SB using IPAQ, and found a mean time of 8.25 (AUC 0.74 [95%CI 0.67; 0.81]) hours/day in SB for men and 8.9 (AUC 0.58 [95%CI 0.52-0.64]) hours/day for women to discriminate frailty among Brazilian older adults, with these AUC values being similar to those found in the present study.

Identifying SB cut-off points is of utmost importance, since practicing physical activity and reducing SB improve muscle strength, increase independence and can reduce injuries in older adults (Zusman et al., 2019). There is evidence that physical activity prevents falls in older adults (Gillespie et al., 2012). Thus, the knowledge of SB time, which is a predictor of fear of falling and falls, can help health professionals, especially physical therapists in the health education of their patients, encouraging them to stop SB before reaching these cut-off points and consequently reduce the SB time. Knowledge of these cut-off points can also be useful for developing health policies and actions that can propose interventions (booklets, programs, lectures) for the older adult population about the importance of preventing and reducing SB, and about the risks they will be subjected to when they remain in SB for long periods.

Although it is possible to investigate several variables concomitantly in a case

control study, this design is a limitation of the study since it prevents an evaluation of the cause-and-effect relationship between the variables. Even though validated questionnaires such as the FES-I and IPAQ were applied, we point out that another limitation of the present study is self-report. Variables collected through self-report are subject to the subjects' honesty and introspective abilities, i.e. community older adults may not be able to accurately assess themselves and also may not clearly understand the questions. Although the sample for this study was randomly selected, another limitation of the study is that it is composed only of community-dwelling elderly people from the southernmost part of Santa Catarina (Brazil), and may be susceptible to cultural, ethical, and health differences from other regions of Brazil and the world. Finally, we highlight that the potential refinement of the model with additional dimensions of SB may lead to an underestimation or overestimation of the time spent on this behavior, thus being another limitation of this study.

We emphasize that the findings of the present study can assist clinicians in using these cut-off points as a recommendation to reduce SB as well as its negative health outcomes. Furthermore, the results of the present study can help public health agencies to promote policies aiming to reduce SB and outcomes such as fear of falling and history of falls. It is worth mentioning that the strengths of this study were the sample size and the fact that the sample was randomized, reducing possible selection biases. In addition, as the robust association analysis, using several adjustment variables, reducing the risk of bias; therefore, enabling better identification of the associations of SB and fear of falling and history of falls in community-dwelling older adults.

Conclusion

Values higher than 4.1 and 3.9 hours/day in SB is associated with fear of falling

1   and suffering falls in community-dwelling older adults. These findings may contribute

2   to developing rehabilitation protocols by health professionals and strategies to raise

3   awareness by older adults promoted by public policies and other health actions.

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1   **Figures**

2

```
+-----------------------------------------------------------+
|  2833 older adults registered in the primary care system  |
+-----------------------------------------------------------+
                            |
+-----------------------------------------------------------+
|        540 older adults were randomly selected            |
+-----------------------------------------------------------+
              |          +-------------------------------------------+
              |          |              68 losses                    |
              |          |             29 refusals                   |
              |          |              24 deaths                    |
              |----------|     31 for incomplete registrations       |
              |          |        64 changes of address              |
              |          |  16 exclusions for being bedridden or     |
              |          |        dependent older adults             |
              |          +-------------------------------------------+
              |
+-----------------------------------------------------------+
|          308 older adults included in the study           |
+-----------------------------------------------------------+
```
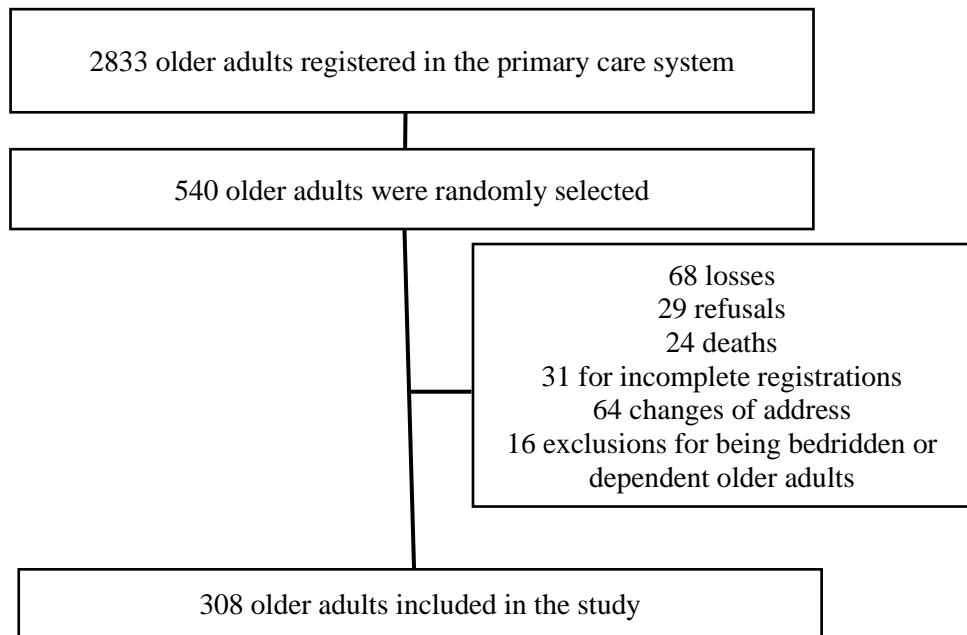
12   **Figure 1 – Study Flowchart**

1 **Tables**

2 Table 1 - Sociodemographic and clinical characteristics of the evaluated older adults.

Variables	All participants 308 (100)	High fear of falling 140 (46.8)	Low fear of falling 159 (53.2)	With history of falls 100 (32.7)	Without history of falls 206 (67.3)
Gender					
Women	178 (57.8)	102 (72.9)	73 (45.9)	72 (72.0)	105 (51.0)
Men	130 (42.2)	38 (27.1)	86 (54.1)	28 (28.0)	101 (49.0)
Age group					
60-69 years	168 (54.7)	77 (55.0)	88 (55.7)	61 (61.0)	106 (51.7)
70-79 years	109 (35.5)	50 (35.7)	54 (34.2)	33 (33.0)	75 (36.6)
≥ 80 years	30 (9.8)	13 (9.3)	16 (10.1)	6 (6.0)	24 (11.7)
Multimorbidity					
No	117 (38.1)	31 (22.3)	83 (52.2)	29 (29.0)	86 (42.0)
Yes	190 (61.9)	108 (77.7)	76 (47.8)	71 (71.0)	119 (58.0)
Physical activity					
Insufficiently active	266 (87.2)	126 (91.3)	132 (83.5)	87 (87.0)	177 (87.2)
Sufficiently active	39 (12.8)	12 (8.7)	26 (16.5)	13 (13.0)	26 (12.8)

3 Legend: The frequency values are given in parentheses.

4

5

1   Table 2 - Analysis of the area under the ROC curve and general and specific predictive values of SB in community-dwelling older adults.

Variable	Predictive value	AUC	Sensitivity (%)	Specificity (%)	+LR	-LR	Youden J statistic	PPV	NPV
Fear of falling	> 4.1	0.59 (0.53-0.65)	49.29 (40.7-57.9)	67.30 (59.4-74.5)	1.51 (1.1-2.0)	0.75 (0.6-0.9)	0.17 (0.07-0.24)	57.00 (50.10-63.70)	60.10 (55.4-64.70)
History of falls	> 3.9	0.58 (0.52-0.64)	58.00 (47.7-67.8)	58.25 (51.2-65.1)	1.39 (1.1-1.8)	0.72 (0.6-0.9)	0.17 (0.07-0.24)	40.3 (34.8-46.0)	74.1 (68.8-78.7)

2   Legend: ROC: Rate of Change. AUC: Area under the ROC curve. +LR: odds ratio for positive test. -LR: odds ratio for a negative test. PPV:

3   positive predictive value; NPV: negative predictive value.

Table 3 - Association between fear, history of falls and SB in community-dwelling older adults.

Variables	Sedentary Behavior	
	Raw	Adjusted[a]
	OR (CI 95%)	OR (CI 95%)
Fear of falling		
< 4.1 hours/day	1.00	1.00
> 4.1 hours/day	**2.05 (1.28; 3.28)**	**1.71 (1.03; 2.84)**
History of falls		
< 3.9 hours/day	1.00	1.00
> 3.9 hours/day	**1.85 (1.14; 3.00)**	**1.76 (1.06; 2.90)**

[a]Adjusted for the variables sex, age group, multimorbidity, and physical activity. Legend: OR: odds ratio; CI: 95% Confidence Interval.

Anexo A – Aprovação no Comitê de Ética Envolvendo Seres Humanos (CEPSH) da UFSC

UNIVERSIDADE FEDERAL DE
SANTA CATARINA - UFSC

Plataforma
Brasil

PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Influência do nível de atividade física e do envelhecimento em testes de desempenho físico-funcional em idosos comunitários

Pesquisador: Núbia Carelli Pereira de Avelar

Área Temática:

Versão: 2

CAAE: 87776318.3.0000.0121

Instituição Proponente: Universidade Federal de Santa Catarina

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 2.730.283

Apresentação do Projeto:

Projeto de pesquisa de mestrado de Ana Lúcia Danielewicz, orientado por Núbia Carelli Pereira de Avelar (Pesquisador responsável). O trabalho visa analisar a influência do nível de atividade física no desempenho físico-funcional em idosos comunitários e estimar as prevalências de incapacidade nas categorias propostas pela CIF em idosos residentes no município de Araranguá, Santa Catarina. A pesquisa terá como métodos de coleta de dados serão realizados um Questionário Internacional de Atividade Física (IPAQ) e o desempenho funcional será observado a partir de diferentes testes: velocidade da marcha (máxima e habitual), sentar e levantar da cadeira, Timed Up and Go (TUG), Tandem Stance (TS) e Teste de Alcance Funcional. Ao todo participarão 245 idosos.

Objetivo da Pesquisa:

Objetivo Primário: Analisar a influência do nível de atividade física no desempenho físico-funcional em idosos comunitários e estimar as prevalências de incapacidade nas categorias propostas pela CIF em idosos residentes no município de Araranguá, Santa Catarina.

Objetivo Secundário: Verificar a prevalência de atividade física em idosos comunitários. Comparar a diferença no desempenho físico-funcional em idosos com diferentes níveis de atividade física. Verificar quais variáveis antropométricas e sociodemográficas podem interferir no desempenho físico-funcional em idosos comunitários. Estimar a prevalência de depressão em idosos do

município de Araranguá; Relacionar os índices de depressão com o desempenho funcional em idosos; Verificar as comorbidades mais frequentes em idosos; Relacionar o desempenho físico-funcional com as diferentes comorbidades; Relacionar o medo de cair com o desempenho físico-funcional em idosos; Estimar as prevalências de incapacidade na classificação "Funções e estruturas corporais"; Estimar as prevalências de incapacidade na classificação "Atividades e Participação" proposta no modelo da CIF; Estimar as prevalências de incapacidade na classificação "Fatores Pessoais" proposta no modelo da CIF; Estimar as prevalências de incapacidade na classificação "Fatores Ambientais" proposta no modelo da CIF; Estimar modelos de associação entre as variáveis identificadas nas classificações "Fatores Pessoais" e "Fatores Ambientais" com aquelas observadas na classificação "Atividades e Participação".

Avaliação dos Riscos e Benefícios:

Riscos:

Segundo os autores há possibilidade de ocorrer desconforto muscular devido aos testes de avaliação. Este desconforto deverá desaparecer imediatamente após você finalizar o teste e no máximo em 24 a 48 horas, porém não causará qualquer tipo de problema muscular ou articular. Os testes utilizados nesse estudo já foram descritos em outros trabalhos e as pesquisadoras responsáveis utilizarão normas de recomendações de cada protocolo de avaliação não expondo a voluntária a qualquer situação prejudicial. Cansaço ou aborrecimento ao responder questionários; constrangimento ao realizar exames antropométricos; constrangimento ao se expor durante a realização de testes de qualquer natureza; desconforto; alterações na autoestima provocadas pela evocação de memórias ou por reforços na conscientização sobre uma condição física ou psicológica restritiva ou incapacitante; alterações de visão de mundo, de relacionamentos e de comportamentos em função de reflexões sobre sexualidade, divisão de trabalho familiar, satisfação profissional. Contudo, salientamos que as pesquisadoras responsáveis estão previamente treinadas para redução desses possíveis riscos.

Benefícios:

A execução do projeto implicará em benefícios diretos para as voluntárias uma vez que permitirá uma avaliação detalhada da sua saúde e da sua condição para realizar atividades no dia a dia. Além disso, a participação, segundo os pesquisadores, colaborará na melhora da compreensão sobre quais as alterações e diferenças funcionais que ocorrem em indivíduos que possuem alteração no equilíbrio e comparar idosos caidores e não caidores.

Continuação do Parecer: 2.730.283

Comentários e Considerações sobre a Pesquisa:

O trabalho é relevante pois possibilitará compreender a influência do nível de atividade física e do envelhecimento em testes de desempenho físico-funcional em idosos comunitários.

Considerações sobre os Termos de apresentação obrigatória:

Autorização: Quem assina é Janeisa Franck Virtuoso, coordenadora do Programa de Pós-Graduação em Ciências da Reabilitação da UFSC, afirmando que cumprirá a Resolução 510/16.

Folha de Rosto: Área da ciências da saúde; Núbia Carelli Pereira de Avelar (Pesquisador responsável); Universidade Federal de Santa Catarina (Instituição proponente); Profa Ione Schneider (Chefe do Departamento da Saúde)

Cronograma: Define o início da coleta de dados em 01/08/2018.

Orçamento: A pesquisa será realizada a partir de financiamento próprio.

Método de coleta de dados: Questionário internacional de atividades físicas e uma série de testes funcionais.

TCLE: Adequado.

Recomendações:

-

Conclusões ou Pendências e Lista de Inadequações:

Apresentou autorização corrigida, utilizando a Resolução 466/12. Esclareceu dúvida em relação ao pesquisador responsável.

Considerações Finais a critério do CEP:

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_P ROJETO_1103773.pdf	11/06/2018 13:52:30		Aceito
Outros	CartaResposta.pdf	11/06/2018 13:52:09	Núbia Carelli Pereira de Avelar	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TCLE2.docx	08/06/2018 14:43:25	Núbia Carelli Pereira de Avelar	Aceito
Declaração de Instituição e	ufsc.pdf	08/06/2018 14:23:19	Núbia Carelli Pereira de Avelar	Aceito

Continuação do Parecer: 2.730.283

Infraestrutura	ufsc.pdf	08/06/2018 14:23:19	Núbia Carelli Pereira de Avelar	Aceito
Projeto Detalhado / Brochura Investigador	Projet.doc	05/04/2018 10:50:21	Núbia Carelli Pereira de Avelar	Aceito
Folha de Rosto	Termo.pdf	05/04/2018 10:49:24	Núbia Carelli Pereira de Avelar	Aceito

Situação do Parecer:
Aprovado

Necessita Apreciação da CONEP:
Não

FLORIANOPOLIS, 22 de Junho de 2018

_____

Assinado por:
Nelson Canzian da Silva
(Coordenador)

Anexo B – Normas de Formatação "Journal of Aging and Physical Activity"

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b. Drafting the article or revising it critically for important intellectual content; and
c. Final approval of the version to be published.

Conditions a, b, and c must all be met. Individuals who do not meet the above criteria may be listed in the acknowledgments section of the manuscript. *Uniform requirements for manuscripts submitted to biomedical journals. (1991). *New England Journal of Medicine*, 324, 424–428.

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The *Journal of Aging and Physical Activity* (*JAPA*) consists of three peer-reviewed sections: Original Research, Scholarly Reviews, and Professional Applications. The Original Research section contains scientific studies and investigations, systematic clinical observations, and controlled case studies. The Scholarly Reviews section publishes reviews that synthesize research and practice on important issues in the study of physical activity and aging. Articles based on experience in working with older populations and the available scientific evidence that focus on program development, program activities, and application of exercise principles are appropriate for the Professional Applications section. *JAPA* also includes an editorial section for exchange of viewpoints on key issues affecting physical activity and older adults.

Questions?

Most submission inquires can be addressed by reading the guidelines below. However, if you have questions not covered here, contact us.

Format

In preparing manuscripts for publication in *JAPA*, authors should adhere to the guidelines in the *Publication Manual of the American Psychological Association* (7th edition, 2020) unless otherwise noted in these submission guidelines. Copies of the APA Publication Manual can be found in most university libraries or purchased online through the APA website. Please note that the APA guidelines particularly require that authors acknowledge the existence of similar publications so that the Editor can "make an informed judgment as to whether the submitted manuscript includes sufficient new information to warrant consideration." If similar publications exist, please address this in your cover letter and provide a brief explanation of how the submitted manuscript adds to the literature. Manuscripts that do not conform to APA guidelines and to the guidelines described here may be rejected without review.

Please upload a Title Page as a separate document. This page should include the manuscript title, names of authors and institutional affiliation(s), suggested running head, and full mailing address, e-mail address, and telephone and fax numbers of the corresponding author. The manuscript itself should not contain any author-identifying information and should be uploaded as the Main Document. Within the Main Document, the first page of the manuscript should contain only the title of the article. Page 2 should contain the abstract, with the text of the manuscript beginning on page 3. All manuscripts must include an unstructured (no headings) abstract of 100–150 words. Beneath the abstract, please also include 3–5 keywords not included in the title. The manuscript must be double-spaced, including the abstract, references, and any block quotes. Include line numbers that restart on each page of the manuscript (through Page Setup in Microsoft Word). Every effort should be made to see that the manuscript itself contains no clue to the author's identity. Please also include, when relevant, a statement regarding compliance with regulations for the use of human subjects. This will include a statement in the method section that prior to recruitment approval was obtained from an institutional/regional/national research ethics committee (while keeping the author's instiution blinded), and that all participants provided written informed consent.

JAPA does not impose limits for word count (outside of the 150 word limit for abstracts) or page count. However, authors should be concise in their writing. Information provided in tables and figures should be self-explanatory without referring to the main text, and should not duplicate information provided in the text. *JAPA* is able to publish supplementary material online alongside the journal article. Supplementary material must be referred to in the main document and uploaded as a separate file to be included in the peer-review process. However, supplementary material is not included in the copy-editing process and so the author retains responsibility for the content and presentation of the material.

The *JAPA* Editorial Board are in agreement with the APA style manual that the term "the elderly" is no longer an appropriate label for older adults, as it can be viewed as pejorative and is stereotypical. Instead, please refer to your sample as older adults or even more appropriately, by the specific age range. Similarly, *JAPA* is striving for a more positive approach to aging. Consistent with theories of aging, we discourage the "aging as decline" approach in favor of how older adults adapt to a changing physical, social, and cognitive landscape. We ask you to consider this more positive approach in writing your manuscript. Also note that *JAPA* uses the term "participants" and not "subjects" to refer to adults who have taken part in a study.

Specific Study Designs

Clinical trials. Manuscripts reporting clinical trials are required to follow the CONSORT guidelines and include a CONSORT flow diagram (figure). The International Committee of Medical Journal Editors (ICMJE) defines a clinical trial as follows: "any research project that prospectively assigns people or a group of people to an intervention, with or without concurrent comparison or control groups, to study the relationship between a health-related intervention and a health outcome" (2019, page 13). Health-related interventions are defined as those used to modify a biomedical or health-related outcome including physical activity interventions. Health outcomes are defined as any biomedical or health-related measure obtained from participants, including pharmacokinetic measures, psychological outcomes, and adverse events (ICMJE 2019). It is recommended that a clinical trial is registered in a public repository at the beginning of the research process (prior to participant enrolment). Trial registration numbers should be included at the end of the abstract with full details in the methods section. The registry should be publicly accessible at no charge, open to all prospective registrants, and managed by a not-for-profit organization. For a list of registries that meet these requirements, please visit the WHO International Clinical Trials Registry Platform. The registration of all clinical trials facilitates the sharing of information and enhances public confidence in research. In addition, if authors have not yet published their trial protocol, we encourage authors to include their trial protocol to be published alongside their main trial outcome paper as online supplementary material (on the understanding that there are no copyright restrictions). We also encourage authors to consult the TIDiER checklist for improving the transparency of intervention descriptions (https://www.equator-network.org/reporting-guidelines/tidier/).

Systematic reviews. It is recommended that authors have their systematic review protocol publicaly available in a register such as PROSPERO prior to analysis. Authors are also encouraged to use the PRISMA statement and checklist for transparent reporting of systematic reviews and meta-analyses. In addition, *JAPA* welcomes other types of review articles (narrative, scoping, and rapid, etc.) as long as they provide a novel contribution to the literature (e.g., new theoretical advance or synthesis).

Qualitative studies. *JAPA* is a multidisciplinary journal and its Editorial Board recognizes that qualitative research reflects a variety of epistemological traditions. Therefore, it is not mandatory for authors to adhere to a particular checklist when submitting qualitative journal articles to *JAPA*. Nonetheless, *JAPA* expects a basic standard of reporting that is consistent with international norms that are outlined below.

At a minimum, researchers should include statements in their manuscript outlining a theoretical framework, describing the theoretical basis for methods to be used, the research aims, respondent sampling and defending the rigor and trustworthiness of their analyses. Evidence of rigor and trustworthiness can be shown by authors through a range of practices illustrated in the following non-exhaustive list: use of a detailed methods section explaining the "researcher-as-instrument" or acknowledgement of reflexivity / positionality (researcher acknowledges, reflects and embraces their personal biases and details the process they undertook), a secondary coder (or "critical friend") to discuss your coding process and analysis, presentation of exemplar / key informant quotations, discussion of negative, atypical or contrasting cases, providing evidence of data saturation, use of triangulation, and clear depictions of coding processes. We also encourage authors to consider the reader when composing a qualitative or mixed methods manuscript and write with clarity and a central message in mind. Finally, while accepting that qualitative reports often employ small samples and focus on in-depth analyses of highly contextual and lived experiences, we expect authors to clearly articulate the theoretical contributions of their research, as well as wider social, geographic, policy, or economic related implications of their findings.

Artwork and Table Instructions

All figures should be in a separate file and not in the main document (one file for each). All tables are to appear at the end of the Word document after the reference list. Format tables in the table function of your word processing program rather than aligning columns in text with tabs and spaces or using text boxes. When creating tables, the size and complexity should be determined with consideration for its legibility and ability to fit the printed page.

All art must be professionally prepared, with clean, crisp lines; freehand or typewritten lettering will not be accepted. If photos are used, they should be black and white, sharply focused, and show good contrast. Each figure and photo must be properly identified. In graphs, use black and white or gray shading only, no color. Keep labels proportionate with the size of the figures on the journal page, which is 6.5 in. wide. Digital images should be 300 dpi at full size for photos and 600 dpi for line art. Any images where an individual is identifiable must have their identity concealed (e.g., blurring of the face) along with confirmation that it is not an image taken from a study participant or that the participant has provided written informed consent.

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Peer Review

Manuscripts are read by the Editor and/or an Associate Editor and, when possible, by at least one member of the Editorial Board and one or two additional reviewers. The review process is expected to take 6–12 weeks. There are no page charges to contributors. Manuscripts are evaluated through blind review.

1.961
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All submissions should show evidence of good scholarship, judged by the explanation and rationale for the study, topical relevance and interest to the readership, the design and conduct of the project, and the presentation and discussion of results. Manuscripts that are judged as failing to meet these initial criteria may be rejected by the Editor without further review.

Before Submitting

Manuscripts must not be submitted to another journal at the same time. Public posting of a study protocol, including a brief (<500 words) summary of its results into a trial registry or pre-print server will not be considered prior publication. *JAPA* will also accept submissions of full papers that have been posted on pre-print servers. With any public posting, please include the DOI for the pre-print or weblink to the protocol in the *JAPA* submission form. Authors should not post an updated version of their paper on the pre-print server while it is being peer-reviewed for possible publication in the journal. If your paper is accepted, you must include a link on your preprint to the final version of your paper.

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