











CHANGES IN THE DAILY ROUTINE AND LIFE PERCEPTIONS OF OLDER ADULTS DUE TO THE CORONAVIRUS DISEASE 2019 (COVID-19) PANDEMIC

Alterações na rotina diária e percepções de vida de adultos idosos devido à pandemia de doença pelo coronavírus 2019 (COVID-19)

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ABSTRACT

OBJECTIVE: This study aimed to analyze changes in the daily routine and life perceptions of older adults due to the coronavirus disease 2019 pandemic. **METHODS:** This is a cross-sectional study conducted with 338 older adults (93 men and 238 women) residing in southern Brazil. An online questionnaire consisting of 20 questions was created using the Google Forms platform and was distributed to older adults (> 60 years of age) during the isolation period caused by the coronavirus disease pandemic. Data analysis was conducted through Student's-t and χ^2 tests. **RESULTS:** Our results showed a significant association between social isolation and sex ($p < 0.01$), revealing that women experienced higher levels of social isolation than men. We observed that 82.21% of the older adults participating in this study reported changes in their social routines during the pandemic. **CONCLUSIONS:** During this period of extended social isolation, women reported more negative effects than men. **KEYWORDS:** aging; behavior; social isolation.

RESUMO

OBJETIVO: Este estudo teve como objetivo analisar as alterações perceptivas em idosos em decorrência da pandemia de COVID-19. **METODOLOGIA:** Estudo transversal realizado com 338 idosos (93 homens e 238 mulheres), residentes na região sul do Brasil. Um questionário online criado na plataforma Google Forms®, composto por 20 questões, foi aplicado aos idosos no período de isolamento devido à pandemia do COVID-19. A análise dos dados foi realizada por meio do teste t de Student e teste do χ^2 . **RESULTADOS:** Encontrou-se uma associação significativa entre isolamento social e sexo ($p < 0,01$), revelando que as mulheres vivenciaram maior isolamento social do que os homens. Observa-se que 82,21% dos idosos relataram mudança na rotina social durante a pandemia. **CONCLUSÕES:** Durante esse período de isolamento social prolongado, as mulheres mostraram mais efeitos negativos do que os homens. **PALAVRAS-CHAVE:** envelhecimento; comportamento; isolamento social.

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INTRODUCTION

The coronavirus disease 2019 (COVID-19) is a respiratory infection that presents several symptoms such as fever, cough, fatigue, and in some cases, gastrointestinal infection.¹ In severe cases, it may cause pneumonia, pulmonary edema, acute respiratory distress syndrome, and/or multiple organ failure,² potentially leading to death.

The risk of dying from COVID-19 usually increases with age,³ and in Brazil, the first death among older adults was registered on March 17, 2020.⁴ According to recent data from the Brazilian Ministry of Health, more than 80% of all deaths in the country were of older adults (> 60 years old), most of whom had comorbidities (cardiovascular and respiratory diseases and/or diabetes).⁴ Due to the severity of this pandemic, government health agencies worldwide adopted several measures for ensuring isolation and social distancing, interrupting classes and closing borders, ultimately causing a financial crisis⁵ and negative social impact.⁶

Since advancing age causes progressive loss of the body's functional abilities and a decrease in physical capacities, maintaining an active lifestyle can reduce risks inherent to physical inactivity. Many factors can influence physical inactivity: sex, socioeconomic status, marital status, schooling, obesity, smoking habits, alcoholism, and self-perceived health,^{7,8} as well as environmental, transport, and safety conditions⁹ and a negative image of older adults before the society.⁸ Considering that COVID-19 brought new demands to people's lives, information on the behavior adopted by older adults during this period of social isolation is scarce. Social isolation usually leaves older adults at a greater risk of developing health problems such as depression and anxiety.¹⁰

Therefore, due to their social isolation and higher risk of contracting COVID-19, studies with older adults in this critical period are scarce, especially those involving direct measures of outcomes such as muscle strength, functional capacity, blood pressure, health status, and psychological changes assessed through personal interviews. Considering the need for better understanding the impact of COVID-19 in the older adult population (in order to provide appropriate assistance during this period) and for formulating strategies to cope with the consequences of the pandemic, the purpose of this study was to analyze the changes in the daily routine and life perceptions of older adults due to the COVID-19 pandemic.

METHODS

This cross-sectional study used an online questionnaire created on the Google Forms platform; the questionnaire

contained 20 questions and was applied to older adults during the isolation period brought by the COVID-19 pandemic. The online questionnaire was distributed to the participants through social networks (Facebook, Instagram, WhatsApp) and was answered between May 12 and June 11, 2020.

Participants

Participants were recruited online with the following inclusion criteria:

- aged > 60 years;
- with access to a computer or other device for answering the questionnaire.

All participants were informed in detail on the experimental procedures and possible risks and benefits of their participation and provided written informed consent by clicking the "I agree" button before advancing to the questionnaire. Initially, 418 people answered the online form. Of these, 2 participants denied participation via the consent form. Eighty participants did not meet the age criterium and 5 participants did not complete the information required by the questionnaire.

This investigation was conducted according to the Declaration of Helsinki and was approved by the local University Ethics Committee (Process 3.967.673).

Questionnaire

Each participant answered the questionnaire remotely, all questions were mandatory, and answer forms could only be submitted after all the research questions were answered. The topics included in the questionnaire were as follows:

- sex (male, female);
- age;
- retirement status (yes, no);
- in social isolation (yes, no);
- change in routine after social isolation (yes, no);
- leaves the house (no, only to work, only to buy essential items, whenever I need);
- practiced a physical activity before the pandemic (5–7 days a week, 3–4 days a week, 1–2 days a week, did not practice);
- continued with physical activity during the pandemic (5–7 days a week, 3–4 days a week, 1–2 days a week, stopped practicing; still not practicing);
- tiredness in the upper-body muscles when exercising for 30 s (no, as usual, feel more tired, feel less tired);
- tiredness in the lower-body muscles when exercising for 30 s (no, as usual, feel more tired, feel less tired);
- balance while walking (no change, worse, better);

- how does it feel during brisk walking? (no difference, harder, easier);
- strength to pick up objects (same, worse, better);
- breathing when performing day-to-day tasks (same, worse, better);
- sleep quality (same, worse, better);
- daily medications (yes, no);
- number of daily medications (1 to 2, more than 2, none);
- are you taking more medications after the pandemic? (yes, no);
- fear of contracting COVID-19 (yes, no);
- are you more concerned after the pandemic? (yes, no);
- are you more anxious after the pandemic? (yes, no).

Statistical analysis

Initially, a Kolmogorov-Smirnov test was used to assess data normality, indicating a normal distribution. A Student's t-test for independent samples was used for comparing general characteristics of the sample (age, body mass, height, and body mass index [BMI]) between sexes (men vs women). To analyze the association between categorical variables (sex) and possible differences in sleeping habits, alcohol consumption, eating habits, and physical fitness, we used the χ^2 test. Data were processed using SPSS (SPSS Inc., Chicago, IL, USA) version 23.0. The level of significance was set at $p < 0.05$.

RESULTS

In total, 338 older adults were analyzed, of which 93 were men and 238 were women (67.92 ± 6.73 years, 72.81 ± 12.81 kg, 163.27 ± 8.48 cm, and 27.47 ± 4.54 kg/m²). As seen in Table 1, men presented higher results regarding weight (+ 12.81%) and height (+ 7.82%) when compared to women ($p < 0.05$). We observed that 72.37% of the older adults were between 60 and 70 years old, 63.71% were overweight (BMI ≥ 25 kg/m²), and 76.42% were retired.

As seen in Table 2, both men and women (89.11%) were experiencing social isolation; an association ($p < 0.05$) was observed between this aspect and sex, in which women (11.42%) experienced greater social isolation than men. Moreover, 82.21% of the older adults (men and women) reported a change in their social routines during the pandemic; women ($p < 0.05$) maintained the commitment to leave only for essential tasks more strictly when compared to men.

Regarding the physical activity profile of the older adults in our sample (Table 3), most of them were physically active before the pandemic (80.41%); 78.62% continued with their previous physical activity despite the pandemic and

the request for social isolation issued by local governments. Most older adults reported not having noticed differences in muscle fatigue regarding upper (41.42%) and lower (45.02%) limbs, 62.21% did not feel any difference when walking, and 76.75% did not notice alterations in their strength to pick up objects. An association ($p < 0.05$) between sex and balance was observed, where men reported having maintained their balance more often when compared to women.

Regarding life habits, medication use, and behavior during the pandemic (Table 4), 77.61% of the participants were able to maintain normal breathing during day-to-day tasks and 54.71% maintained sleep quality during the pandemic. Regarding the use of medications, 84.62% of the participants took medications daily, and the pandemic did not change this behavior since 91.58% reported not starting a new medication during this period. Finally, 84% were concerned about the pandemic, 66.50% were anxious after the pandemic, and 77% were afraid of being infected by the virus.

Table 1. Characteristics of older adults during the COVID-19 pandemic (N = 331). Data presented as means \pm standard deviations.

Characteristics	Men (n = 93)	Women (n = 238)	Effect
Age (years)	67.92 \pm 6.11	68.05 \pm 6.95	$p = 0.93$
Weight (kg)	79.31 \pm 12.81	70.34 \pm 11.96	$p < 0.001$
Height (cm)	172.18 \pm 7.17	159.78 \pm 6.00	$p < 0.001$
BMI (kg/m ²)	26.86 \pm 3.95	27.68 \pm 4.78	$p = 0.13$

COVID-19: coronavirus disease 2019; BMI: body mass index.

Table 2. Social behavior of older adults during the COVID-19 pandemic (N = 331). Data presented as percentage values.

Variables	Men (n = 93)	Women (n = 238)	Effect
In social isolation			
Yes	82.81	91.62	p < 0.01
No	17.22	8.41	
Change in routine after social isolation			
Yes	82.81	81.98	p = 0.85
No	17.22	18.19	
Leaves the house			
No	22.67	37.88	p < 0.01
Only to work	15.12	3.41	
Only to buy essential items	51.66	57.11	
Whenever I need	10.83	1.72	

COVID-19: coronavirus disease 2019.

DISCUSSION

The aim of our study was to analyze the changes in the daily routine and life perceptions of older adults due to the COVID-19 pandemic. Our main findings were:

- a small portion of the older adults in this study were not performing social isolation, with older men being responsible for these indicators;
- the great majority of the participants practiced a physical activity before the pandemic and most of them continued to do so even during social isolation;
- the older adults in our study were managing to maintain their physical parameters (ie, muscular strength, balance, agility) during the pandemic;

Table 3. Physical behavior reported by older adults during the COVID-19 pandemic (N = 331).

Variables	Men (n = 93)	Women (n = 238)	Effect
Practiced a PA before the pandemic			
5–7 days a week	24.72	21.80	p = 0.81
3–4 days a week	25.82	30.30	
1–2 days a week	28.01	29.08	
Did not practice	21.55	18.97	
Continued with PA during the pandemic			
5–7 days a week	23.78	21.80	p = 0.20
3–4 days a week	28.07	40.30	
1–2 days a week	24.73	17.21	
Stopped practicing	16.12	11.82	
Still not practicing	7.53	8.88	
Tiredness in the upper-body muscles when exercising for 30 s			
No	32.31	23.15	p = 0.21
As usual	40.92	41.60	
Feel more tired	25.83	31.50	
Feel less tired	1.14	3.87	
Tiredness in the lower-body muscles when exercising for 30 s			
No	24.71	18.94	p = 0.08
As usual	51.62	42.45	
Feel more tired	21.52	34.98	
Feel less tired	2.23	3.87	
Balance while walking			
No change	80.66	72.71	p < 0.05
Worse	16.10	26.52	
Better	3.20	0.82	
How does it feel during brisk walking?			
No difference	68.88	59.76	p = 0.20
Harder	28.03	38.25	
Easier	3.25	2.15	
Strength to pick up objects			
Same	78.57	76.11	p = 0.37
Worse	21.50	21.81	
Better	0	2.12	

COVID-19: coronavirus disease; PA: physical activity.

- participants were anxious and afraid of contracting COVID-19.

In general, an isolation period can result in inappropriate behavior, leading older adults to complicate their health. Isolation at home can lead to inadequate nutrition and sleep, moments of anxiety about what is to come, and fear of being contaminated. In addition, this forced isolation can be characterized as a detraining period, which can affect several physiological systems such as the neuromuscular, cardiovascular, and respiratory systems and their corresponding physical capacities (muscle strength and power, resistance, flexibility).

Maintaining adequate levels of physical activity can assist in different health-related outcomes. Even though 89.11% of the participants admitted experiencing social isolation,

78.62% reported having continued their regular physical activities; therefore, most of the older adults in our sample who were in social isolation continued with regular physical activity. This is important since physical activity has a positive impact on health and quality of life, reducing the risks of functional and cognitive difficulties, falls, fractures, depression, geriatric syndromes, and hospitalization (which must be avoided during the pandemic), consequently reducing mortality in the older adult.¹¹

Therefore, we inferred that many older adults knew the benefits of regular physical activity and decided to continue with it. A similar situation was reported in a study by Goethals et al.¹², in which French older adults expressed the need to continue performing physical activities at home. This information was added to the older adults' own perceptions, where

Table 4. Life habits, medication use, and behavior reported by older adults during the COVID-19 pandemic (N = 331).

Variables	Men (n = 93)	Women (n = 238)	Effect
Breathing when performing day-to-day tasks			
Same	83.91	75.21	p = 0.12
Worse	16.12	22.32	
Better	0	02.53	
Sleep quality			
Same	55.91	54.23	p = 0.46
Worse	30.12	35.78	
Better	14.00	10.17	
Daily medications			
Yes	87.10	83.62	p = 0.43
No	12.91	16.47	
Number of daily medications			
1 to 2	42.00	36.19	p = 0.38
3 or more	58.15	63.91	
Are you taking more medications after the pandemic?			
Yes	05.47	09.78	p = 0.21
No	94.67	90.35	
Fear of contracting COVID-19			
Yes	76.38	77.31	p = 0.85
No	23.77	22.72	
Are you more concerned after the pandemic?			
Yes	82.81	84.52	p = 0.71
No	17.23	15.53	
Are you more anxious after the pandemic?			
Yes	61.31	68.53	p = 0.21
No	38.72	31.53	

COVID-19: coronavirus disease.

they had not noticed changes in muscular strength, ability to walk, and balance during the isolation period.

However, important aspects that need to be observed are the health factors of the older adults interviewed in this study. According to the literature,^{13,14} some factors can facilitate COVID-19 transmission and health complications in people who are contaminated by the virus. In this study, 63.71% of the older adults were overweight and using medications (84.62%), indicating that they had previous pathologies. In addition, a small portion of the participants (especially older men) still worked, which forced them to stay out of their homes for a long time. Literature data¹⁵ have shown that older adults who are overweight and have comorbidities are more likely to have complications from COVID-19.

An important point to be observed in older adults is the fear of contracting COVID-19. Both men and women were afraid of contracting the disease (77.00%). This was well observed by the anxiety parameter, which showed that 65.50% are more anxious after the pandemic. This fear is probably due, in addition to other factors, to the fact that age is the most important factor that decreases the chances of surviving COVID-19, especially after 60 years of age.¹⁶

In older adults, anxiety disorders usually last for years and are mostly associated with depression, serious illnesses, or adverse drug reactions.¹⁷ Anxiety disorders are often difficult to treat because many older adults with anxiety end up with other concomitant mental disorders such as hypochondria due to the accumulation of different life events and functional declines. Other aspects that complicate alcoholism treatment are anxiety, depression, and insomnia.¹⁸ A study by Lei et al.¹⁹ found an increase in the prevalence of anxiety and depression in Chinese participants of different age groups, but mainly in older adults. Duan and Zhu²⁰ also noted an increase in psychological problems during the pandemic, including stress, anxiety, and depression.

Some limitations of our study need to be addressed. We employed an online questionnaire and requested only older adults to answer it, but the actual age of the participants was

out of our control. We did not employ any direct and objective measures related to their health status such as muscle strength, body composition, or blood pressure. However, this was not performed due to the social isolation imposed by the pandemic. Our responders only included people who had access to the internet and who could read. Finally, our sample consisted of older adults from southern Brazil, which hampers the possibility of extrapolating the results to other regions of the country. Future investigations need to analyze the real effects of the post-pandemic period on several health aspects in order to provide specific strategies to deal with the consequences of this tragic moment, especially in older adults.

We concluded that there was a higher prevalence of older women that experienced higher levels of social isolation and a higher prevalence of older men who maintained their perception of balance during the social isolation period. These results will enable health professionals to better understand how the pandemic is affecting older adults' lives and to provide a more specific approach when helping this population go through this critical period, respecting the differences observed between sexes in their behavior regarding this moment.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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AUTHORS' CONTRIBUTION

RGF: conceptualization. DVO: formal analysis. AG: conceptualization. HSF: visualization. FRG: visualization. LF: conceptualization. JРАНJ: formal analysis. FLCP: conceptualization. JLM: writing — review & editing. MAN: conceptualization, supervision, writing — review & editing.

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