Anxiety and depression in the elderly during COVID-19: The moderating role of social media use

Cinthya Martins Dos Santos Grau[1], João Daniel de Souza Menezes[1,2], Matheus Querino da Silva[1], Yuri Sacardo[1,2], Emerson Roberto dos Santos[1,2], Renato Mendonça Ribeiro[3], Natália Sperli Geraldes Marin Dos Santos Sasaki[1], Vânia Del'Arco Paschoal[1], Daniele Alcalá Pompeo[1], Maria Cláudia Parro[1], Alba Regina de Abreu Lima[1,2], Vânia Maria Sabadoto Brienze[1,2], Júlio César André[1,2], Rita de Cássia Helú Mendonça Ribeiro[1,2]

[1]Faculty of Medicine of São José do Rio Preto, Brazil; [2]Center for Studies and Development of Health Education - Faculty of Medicine of São José do Rio Preto (CEDES / FAMERP), Brazil; [3]School of Nursing at the University of São Paulo, Brazil

Abstract. *Background and aim:* To evaluate the use of social networks and other moderators in reducing anxiety and depression in the elderly during the Covid-19 pandemic and to correlate these factors with sociodemographic aspects. *Methods:* A cross-sectional study with a descriptive design, quantitative approach, and analytical type with correlation between variables. The research was conducted with 72 elderly individuals over 60 years of age. A sociodemographic health questionnaire, the Geriatric Anxiety Inventory (GAI), and the Geriatric Depression Scale (GDS-15) were applied. Blood pressure was measured at the time of the interview and compared with the average values from the previous year. *Results:* The elderly presented hypertension (69.44%) and anxiety (51.39%), with a higher incidence of anxiety in men (52.78%) with p=0.013. The elderly who used social networks showed significantly less depression than those who did not use them (p=0.015). *Conclusions:* Anxiety was more expressive than depression, and the elderly who used social networks were less depressed due to mutual support, experience sharing, and cognitive stimulation, factors that moderated the incidence of depression during the uncertainties of COVID-19. (www.actabiomedica.it)

Key words: elderly, COVID-19, mental health, exercise, social networking

Introduction

COVID-19, an abbreviation for "Coronavirus Disease 2019", represents an emerging pathology caused by the SARS-CoV-2 virus, which belongs to the family of coronaviruses responsible for triggering severe acute respiratory syndromes. This disease is distinguished by its high transmission capacity among humans, characterizing itself as a new nosological entity since its first identification in December 2019, in the metropolis of Wuhan, located in the People's Republic of China (1, 2).

The global escalation of SARS-CoV-2 infection cases, marked by rapid dissemination beyond national and continental borders, culminated in the declaration of a pandemic by the World Health Organization (WHO) on March 11, 2020 (3). This milestone not only underlined the severity and urgency of the global health situation but also mobilized international efforts to better understand the pathogenesis, epidemiology, and effective mitigation strategies against the spread of the virus.

The implementation of social isolation emerged as a primary strategy to mitigate the spread of SARS-CoV-2, aiming to protect public health by reducing

interpersonal contact. Although this measure has demonstrated effectiveness in containing the virus, it poses significant challenges, particularly for the elderly population. The restriction of social contact and limited access to socialization spaces can induce feelings of loneliness among the elderly, exacerbating public health risks. Prolonged loneliness is associated with an increased risk of cardiovascular complications, autoimmune dysfunctions, neurocognitive decline, and mental health problems, configuring itself as a highly relevant public health issue (4–6).

Moreover, the pandemic context intensified the fear of contamination, concerns about the well-being of family members, uncertainty regarding the control of the situation, and, in many cases, anxiety resulting from financial instabilities in a period of economic recession. These factors contributed to the worsening of insomnia, anxiety disorders, including panic attacks, depression, and post-traumatic stress, especially notable during social isolation (7–10). Furthermore, longitudinal analyses point to the need for specific interventions that can mitigate the adverse effects of social isolation on the mental health of this demographic, emphasizing the importance of support strategies adapted to the unique needs of the elderly during and after global health crises (11). The relevance of these issues is amplified by evidence that the pandemic exacerbated pre-existing mental health conditions, with a lasting impact that may persist beyond the pandemic period, even increasing the risk of suicide. Notably, the suicide rate among the elderly was already considered two to three times higher compared to other age groups before the pandemic (12).

The pandemic led to a low demand for health services, low treatment adherence rates, and high rates of deaths from coronary diseases, becoming a worrying and alarming factor, especially in relation to the elderly (13–15). There was also a difficulty in using health services, which can be explained by the lower supply of services by the public and private health sectors (16).

The COVID-19 pandemic imposed significant changes in global lifestyles, inducing adaptations that, in many cases, resulted in behaviours harmful to health. Among these changes, there was an increase in the consumption of substances such as alcohol and tobacco, inadequate eating practices, and an increasingly sedentary lifestyle. These risk behaviours, exacerbated by the pandemic context, have direct implications for the physical and mental health of the population, increasing vulnerability to chronic diseases and compromising overall well-being (17).

Physical exercise, widely recognized for its physiological and psychological benefits, faced significant restrictions during the pandemic. Gyms, parks, and other public spaces frequently used for physical activities were temporarily closed as part of the virus containment measures, forcing individuals to seek alternatives to maintain their exercise routines. Although many adapted their workouts to the home environment or areas near their residences, the transition was not without challenges. The lack of adequate equipment, insufficient space, and the absence of a motivational environment contributed to a reduction or even suspension of physical activities among a significant portion of the population (18–20). The need for adaptation to the pandemic context and its consequences on the regular practice of physical exercises highlight the importance of innovative strategies to promote physical activity. Recent research suggests the effectiveness of online exercise programs, health and fitness apps, and the promotion of outdoor physical activities as viable alternatives to overcome the limitations imposed by the pandemic. These approaches not only offer safe and accessible options for maintaining physical activity but can also contribute to mitigating the negative impacts of health risk behaviors observed during this period (21, 22). These strategies and interventions highlight the capacity for resilience and adaptation in the face of adverse circumstances, emphasizing the importance of maintaining an active lifestyle for the promotion of health and well-being, even in times of global crisis. Population aging is a global trend, with projections indicating a significant increase in the proportion of elderly individuals both in Brazil and in other parts of the world (23, 24). This demographic dynamic, accompanied by the emergence of the COVID-19 pandemic, imposes unprecedented challenges to public health and the quality of life of this population. The vulnerability of the elderly to severe complications resulting from COVID-19, along with the social isolation imposed as a containment measure, highlights the urgency to understand the physiological

and psychological repercussions faced by this group. Recent studies have pointed to the worsening of mental health conditions, such as anxiety and depression, among the elderly during this critical period (25, 26).

In this context, it becomes imperative to evaluate interventions that can mitigate the negative impacts of the pandemic on the mental health of the elderly. Social networks emerge as potential mitigation tools, offering a platform for social interaction and emotional support, despite the physical restrictions imposed by isolation. The literature suggests that the use of digital communication technologies can play a significant role in reducing feelings of loneliness and promoting psychological well-being among the elderly, especially in times of global health crisis (27, 28).

Therefore, the present study aims to explore the role of social networks and other moderating factors in mitigating symptoms of anxiety and depression among the elderly during the COVID-19 pandemic. Additionally, it seeks to examine how sociodemographic variables such as age, gender, marital status, housing situation, education level, work activity, type of activity, income, religion, physical activity practice, and clinical data, including concomitant diseases, influence the relationship between the use of social networks and the mental health of this population. The identification of such correlations is crucial for the development of targeted and effective strategies aimed at preserving the mental health of the elderly, promoting a better quality of life during and after the pandemic.

Materials and methods

This is a cross-sectional study with a descriptive design, quantitative approach, and analytical type with correlation between variables. The research was conducted in a Family Health Basic Unit (UBSF) in a municipality in the interior of the state of São Paulo, Brazil, from July to August 2021. Electronic medical records from 2019 to 2021 were evaluated.

The study included 72 elderly individuals over 60 years of age, users of the Unified Health System (SUS), who were in the waiting room of the UBSF awaiting medical consultation. Elderly individuals with cognitive or communication deficits that made it impossible to apply the assessment instruments were excluded from the study.

The instruments used were applied by trained interviewers who received prior training on the application of the questionnaires and the approach to the elderly. Initially, an instrument was applied to collect sociodemographic data regarding age, gender, marital status, education, work activity, type of activity, income, concomitant diseases, and clinical data, developed by the authors.

Subsequently, the Geriatric Anxiety Inventory (GAI) was used to measure anxiety symptoms in the elderly group. This inventory was developed by Pachana et al. (29) and adapted to the Brazilian context (30). The inventory consists of 20 dichotomous items in which the respondent must choose "agree" or "disagree" as a response to the presented statements. It is an instrument with a cut-off score between 10/11 (does not present/presents), where a score of 0-10 indicates no anxiety, 11-15 indicates mild or moderate anxiety, and 16-20 indicates severe anxiety. The GAI presents good reliability, with a Cronbach's alpha coefficient of 0.91 for the Brazilian version (30).

For screening depression in the elderly, the Geriatric Depression Scale (GDS-15), developed and validated by Yesavage et al. (31) in 1982, was used. Its first version consists of 30 questions with dichotomous answers (yes/no). The reliability of the GDS was evaluated in all its reduced versions, and among them (GDS-1, 4, 10, and 15), the GDS-15 presents the highest reliability (32). With a score ranging from 0 to 15 points, values from 6 to 10 points are indicative of mild to moderate depressive symptoms, and values of 11 and above are indicative of severe depression. The GDS-15 presents good internal consistency, with Cronbach's alpha coefficient ranging from 0.81 to 0.86 in Brazilian studies (32).

Blood pressure was measured at the time of the interview and compared with the average blood pressure from the period between the end of 2019 and 2020, available in the municipality's electronic medical records.

After tabulating the data collected in this study, two statistical analysis functions were applied: descriptive and inferential. Descriptively, the profile of the studied sample was outlined, contemplating the

analyzed variables and their developments. In this first part, the data were replicated in absolute and relative form. In the inferential scope, the statistical objective was to analyze the independence and prediction between the variables proposed within the scope of the study.

For this purpose, the Mann-Whitney U test, Spearman's correlation, and T-test were used, within the expected standards. The results of independence between the proposed variables were considered significant when $p<0.05$. Finally, all analyses were obtained using the SPSS Statistics Software (Version 23) linked to the functionalities of the Excel tool (version 2.016).

This study, following the norms of CNS Resolution No. 466 of 2012, was evaluated by the Research Ethics Committee of the Faculty of Medicine of São José do Rio Preto - State Autarchy (FAMERP). The project submitted for appreciation by the Research Ethics Committee received Opinion No. 4,331,127 on October 9, 2020. Before starting the research, all participants were informed about the study and its objectives, the right of non-participation, and the guarantee that their assistance would not be affected if they did not accept to participate, nor by the answers provided if they accepted. Anonymity and confidentiality were assured. Those who agreed to participate signed the Informed Consent Form.

Results

For the study, data were collected from 72 elderly individuals. Men represent 52.78% (38/72) of the studied population. Most of the interviewees, 56.94% (41/72), were under 70 years old. The elderly who declared themselves white totaled 81.94% (59/72). Regarding marital status, 59.72% (43/72) were married. The majority lived with other people, 79.17% (57/72).

More than half, 52.78% (38/72), had only incomplete elementary education; 75% (54/72) had a family income of one to three minimum wages, and 81.94% (59/72) were retired.

The majority, 80.56% (58/72), reported attending a religion, and 66.67% (48/72) used some digital social network, with the main ones reported being WhatsApp, Facebook, and Instagram.

Regarding chronic diseases, 69.44% (50/72) of the elderly had hypertension, and 23.61% (17/72) had diabetes. When asked if they had any other health problems, 51.39% (37/72) answered yes, with the main ones reported being hypothyroidism, arthritis, arthrosis, fibromyalgia, prostatic hyperplasia, osteoporosis, depression, among others.

Anxiety affected more than half of the elderly, 51.39% (37/72), with 26.39% (19/72) in the mild form and 25% (18/72) in the severe form. Men had a higher incidence of anxiety, distributed as follows: 73.61% (14/19) with mild anxiety and 61.11% (11/18) with severe anxiety.

When considering Age Group (up to 70, 70+, 80+, and 90+), Academic Background, Marital Status, and Family Income, we concluded that the results were not significant, demonstrating that anxiety did not change significantly in the studied population. In the item "Attends any Religion," little significance was observed in relation to anxiety. These data can be seen in Table 1.1 and in Table 1.2.

It was found that 29.17% (21/72) of the elderly presented depressive symptoms, with 18.06% (13/72) in the mild form and 11.11% (8/72) in the severe form. Depression affected men and women equally, with no significant difference in the analysis of incidence by sex.

In the analysis of the item "Uses Social Network," it was found that the elderly who used social networks had significantly less depression than those who did not use them, 72.55% of patients without anxiety ($p = 0.015$). Even though the values were not significant, a higher incidence of depression was observed in the population with an income between one and three minimum wages (76.19%; 16/21), with no events observed among those who earn above three minimum wages. Only 23.81% (5/21) of the cases occur in the population with an income lower than one minimum wage.

The study also analysed the blood pressure of the interviewees, comparing it with the average values recorded over the last year (Table 2). Blood pressure underwent a considerable increase, which can be

Table 1.1 – Geriatric Anxiety and Socioeconomic Aspects - Part I (n=72). Olímpia, São Paulo, Brazil, 2021

Information	Geriatric Anxiety Score								P-value
	Total		No Anxiety		Mild Anxiety		Severe Anxiety		
	N	%	n	%	n	%	n	%	
	72	100,00	35	48,61	19	26,39	18	25,00	
Gender									
Female	34	47,22	22	62,86	5	26,32	7	38,89	0,013
Male	38	52,78	13	37,14	14	73,68	11	61,11	
Age (years)									
Up to 70 years	41	56,94	19	54,29	11	57,89	11	61,11	
71 to 80 years	25	34,72	14	40,00	6	31,58	5	27,78	0,777
81 to 90 years	5	6,94	2	5,71	1	5,26	2	11,11	
> 90 years	1	1,39	0	0,00	1	5,26	0	0,00	
Education									
Illiterate	7	9,72	4	11,43	1	5,26	2	11,11	
Incomplete elementary education	38	52,78	18	51,43	9	47,37	11	61,11	
Complete elementary education	9	12,50	5	14,29	3	15,79	1	5,56	
Incomplete high school	4	5,56	2	5,71	2	10,53	0	0,00	0,823
Complete high school	9	12,50	3	8,57	4	21,05	2	11,11	
Higher education	3	4,17	2	5,71	0	0,00	1	5,56	
Incomplete higher education	1	1,39	0	0,00	0	0,00	1	5,56	
Postgraduate	1	1,39	1	2,86	0	0,00	0	0,00	

*Mann-Whitney Statistical Test and Spearman's Correlation for non-linear data.

analysed by observing the reduction in physical activity and other factors.

Paired T Statistical Test

The study analysed the practice of physical activity in the elderly population and the effects of the pandemic on it. The results revealed that, before the emergence of Covid-19, 36.11% (26/72) practiced physical activity, and with the advent of the pandemic, the number dropped to 13.89% (10/72), that is, of the 26 elderly who practiced physical activity, 16 stopped practicing. (Table 3).

Among the patients who interrupted the practice of physical activity during the pandemic, 87.5% (14/16) reported some physical and/or emotional consequence. The main consequences mentioned were weight gain, pain, decreased muscle strength, insomnia, sadness, and fatigue.

It was observed, therefore, that Covid-19 did not interfere with blood pressure, but the disease affected the memory of the elderly, with about 74% of those who presented an increase in forgetfulness having contracted the disease. This data corroborates the patients' reports, in which 84.21% cited some sequelae of the disease. Among the main ones reported are memory problems, loss of smell and/or taste, weakness, hair loss, insomnia, and pain in the lower limbs.

It is also notable that although the significance of P was 0.06, most of the studied population had difficulty sleeping, and among those who had Covid-19, the numbers were higher, with 84.21% reporting such difficulty (Table 4).

Table 1.2 – Geriatric Anxiety and Socioeconomic Aspects - Part II (n=72). Olímpia, São Paulo, Brazil, 2021.

Information	Geriatric Anxiety Score								Total
	Total		Information		Total		Information		
	n	%	n	%	n	%	n	%	
	72	100,00	35	48,61	19	26,39	18	25,00	
Current Marital Status									
Single	5	6,94	1	2,86	1	5,26	3	16,67	
Married	43	59,72	20	57,14	15	78,95	8	44,44	
Widowed	16	22,22	8	22,86	3	15,79	5	27,78	0,110
Cohabiting	4	5,56	3	8,57	0	0,00	1	5,56	
Divorced	4	5,56	3	8,57	0	0,00	1	5,56	
Family Income									
Up to one minimum wage	12	16,67	4	11,43	2	10,53	6	33,33	
From one to 3 minimum wages	54	75,00	28	80,00	14	73,68	12	66,67	0,281
From 3 to 10 minimum wages	6	8,33	3	8,57	3	15,79	0	0,00	
Had COVID-19?									
No	53	73,61	24	68,57	13	68,42	16	88,89	0,214
Yes	19	26,39	11	31,43	6	31,58	2	11,11	
Attends any religion?									
No	14	19,44	7	20,00	3	15,79	4	22,22	0,687
Yes	58	80,56	28	80,00	16	84,21	14	77,78	
Uses social network?									
No	24	33,33	13	37,14	5	26,32	6	33,33	0,426
Yes	48	66,67	22	62,86	14	73,68	12	66,67	

*Mann-Whitney Statistical Test and Spearman's Correlation for non-linear data.

Table 2 – Blood Pressure at the Interview and in the Last Year of Study (n=72) Olímpia, São Paulo, Brazil, 2021.

	Blood Pressure (BP) at the interview								
	Total		SBP <= 120 and DBP <= 80		SBP 121 to 139 and DBP 81 to 89		SBP>= 140 and DBP>= 90		P-value
	n	%	n	%	n	%	n	%	
Information	72	100,00	23	31,94	16	22,22	33	45,83	
BP in the last year									
Not available	17	23,61	7	30,43	2	12,50	8	24,24	
PAS ≤ 120 and PAD ≤ 80	28	38,89	14	60,87	6	37,50	8	24,24	
PAS 121–139 and PAD 81–89	18	25,00	0	0,00	7	43,75	11	33,33	0,000
PAS ≥ 140 and PAD ≥ 90	9	12,50	2	8,70	1	6,25	6	18,18	

Table 3 – Practice of Physical Activity Before the Pandemic and During the Pandemic (n=72), Olímpia, São Paulo, Brazil, 2021

	Did you practice any physical activity before the pandemic?						P-value
	Total		No		Yes		
	n	%	n	%	n	%	
Information	72	100,00	46	63,89	26	36,11	
Practices physical activity?							
No	62	86,11	46	100,00	16	61,54	0,000
Yes	10	13,89	0	0,00	10	38,46	

Table 4 – Covid-19 Infection correlated with systemic presentations (n=72), Olímpia, São Paulo, Brazil, 2021

	Did you have COVID-19?						P-value
	Total		No		Yes		
	n	%	n	%	n	%	
Informações	72	100,00	53	73,61	19	26,39	
BP at the interview							
1 = PAS ≤ 120 e PAD ≤ 80	23	31,94	19	35,85	4	21,05	
2 = PAS 121–139 e PAD 81–89	16	22,22	9	16,98	7	36,84	0,751
3 = PAS ≥ 140 e PAD ≥ 90	33	45,83	25	47,17	8	42,11	
Did you notice if you became more forgetful in recent months?							
No	47	65,28	42	79,25	5	26,32	0,000
Yes	25	34,72	11	20,75	14	73,68	
Do you have difficulty sleeping?							
No	24	33,33	21	39,62	3	15,79	0,060
Yes	48	66,67	32	60,38	16	84,21	

*Mann-Whitney Statistical Test and Spearman's Correlation.

Discussion

Regarding sociodemographic characteristics, among the participants of this research, it was possible to observe the prevalence of males, different from the results found in other studies in which the majority were female [33–35]. A probable justification for this divergence is the fact that the research was conducted in a Health Unit during the period of social isolation, in which some studies indicate that total social isolation was more accentuated among women [36–38]. Most of the elderly were under 70 years old, a finding corroborated by other studies [33–35].

Regarding marital status, most were married, with low education, reporting having attended only incomplete elementary school and having a family income of one to three minimum wages. These findings are in line with other studies [33,39–41]. Such data show that this is a vulnerable population from a socio-educational and economic point of view.

The socioeconomic conditions of the elderly can compromise quality of life and trigger anxiety and depression. A study conducted in all regions of Brazil proved that receiving five or more salaries decreases the chances of presenting depressive symptoms [42]. This data corroborates the findings of this study, since despite the values not being significant, there was an incidence of depression among the elderly who received one to three minimum wages.

The level of education is also a predictive factor for anxiety and depression [42]. A study conducted in China found that people with lower education were more likely to develop depressive symptoms [2].

Before the Covid-19 pandemic, depression and anxiety were already a problem in this age group. After the advent of the pandemic, concern about the mental health of the elderly increased (7,43,44). A longitudinal study conducted in Singapore with community-dwelling elderly revealed that symptoms of depression and anxiety increased significantly during the pandemic (45).

Thus, studies conducted during the pandemic showed a prevalence of depression in the elderly ranging from 10% to 42.68% (19,35,36,46). Regarding anxiety, the prevalence was similar, ranging from 10% to 57% (19,46–49). In the current research, the elderly presented higher anxiety scores (51.39%; 37/72) compared to depression (29.17%; 21/72). These data corroborate findings from another study (19).

In the present research, men were more anxious than women. Regarding depression, there was no significant difference between the sexes. This data differs from other studies, which indicated a prevalence of depressive symptoms and anxiety in females (38,42,46).

Our results did not show a significant difference in depression and anxiety among the elderly who lived alone and among single and widowed individuals. These data differ from those of other studies that reported that elderly people living alone are more likely to develop depression (12,38,50).

The same happens in relation to elderly people without a partner. It is known that they experience, in the aging process, continuous losses that can lead to negative feelings, such as discouragement and sadness. In addition, not having consolidated social support influences the emergence of depressive symptoms, which can be aggravated by social isolation during the pandemic (34).

In the current study, no significant difference was found in relation to age group and symptoms of anxiety and depression. This can be explained by the fact that the study was conducted only with the elderly. However, research conducted with a wider age range indicates that the elderly and older adults performed significantly better than young adults in terms of feeling less COVID-19-related anxiety, less negative affect, and depressive mood states (51–53). This may be due to the fact that the elderly reported greater perceived coping efficacy and were generally more confident in the COVID situation. The result found may be related to the fact that the middle-aged and younger groups are more exposed to economic factors related to the consequences of the pandemic (54).

A study conducted in Romania pointed out that the elderly who remained more optimistic showed greater personal resilience to face social isolation, revealing optimism as a protective factor against anxiety. Increased optimism is involved with participation in social activities, religious involvement, social support, physical activities, and the practice of gratitude (55). In this context, in the face of a pandemic scenario, leisure becomes fundamental for the elderly population, as it encourages activities, social interaction, relaxation, and mind occupation (56).

Strategies to minimize the negative impacts of the pandemic on the elderly population include physical exercise programs, even if remotely, online or telephone contacts with friends and family, regular sleep-wake cycles, healthy eating habits, use of social networks, and cognitive stimulation (57).

Physical activity also played a fundamental role in physical and mental health during the pandemic. The practice of physical exercises promotes psychological well-being, helping to regulate anxiety and decrease depressive symptoms, improves immunity, and stimulates motor coordination and memory (8).

The present research analyzed the practice of physical activity in the elderly population and the effects of the pandemic on it. The results revealed that before the emergence of Covid-19, 36.11% (26/72) practiced physical activity, and with the advent of the pandemic, this number dropped to 13.89% (10/72). This finding corroborates another study conducted in the city of São Paulo, which reported a decrease from 42% in the number of elderly who did regular physical exercise before the pandemic period to 26% during the pandemic (19). The consequences of these abrupt changes in the lifestyle of the geriatric population are worrisome. In the current research, the main consequences reported by the elderly were weight gain, pain, decreased muscle strength, insomnia, sadness, and fatigue. Although the long-term effects of physical inactivity are not yet clear, some of the problems that can be aggravated include frailty, sarcopenia, and chronic diseases (19).

The use of digital social networks by the elderly has shown significant impacts on the mental health of this population, as evidenced by a study that indicates that 66.67% (48/72) of the elderly participants use these platforms. Those who engage in digital social networks tend to have a lower incidence of depressive symptoms, a finding that is supported by the existing literature (58). An integrative review on the impact of social media on the elderly revealed that access to these technologies is associated with reductions in levels of anxiety and depression. This is partly due to the ability of social networks to foster meaningful social interactions, mitigating isolation and strengthening emotional support (59).

In addition, sharing mental health-related information and experiences in specific groups on social networks can promote a sense of understanding and support among individuals facing similar challenges, contributing to a sense of belonging and purpose (60,61). During the COVID-19 pandemic, the digital inclusion of the elderly emerged as a crucial factor, enabling safer and more effective social contact through the internet. Virtual communication platforms, such as video chats, played a vital role in reducing the feeling of isolation and promoting the independence of the elderly (59,62,63). Moreover, the engagement of the elderly with digital social networks has been associated with improvements in cognitive and linguistic performance (64).

However, despite the evident benefits, only a fraction of the elderly has access to these digital resources. Barriers to digital inclusion, such as lack of technical knowledge, limited internet access, and the prohibitive cost of technologies, are exacerbated by advancing age (60,62,65,66). The implementation of training programs and technical support for the elderly is suggested as an effective strategy to overcome these barriers, enhancing confidence and knowledge in internet use and, consequently, expanding its adoption among this population (60,67,68).

Most of the studied population had difficulty sleeping, and among those who had Covid-19, the numbers were higher, with 84.21% (16/19) reporting such difficulty. A study conducted with the elderly in the city of São Paulo showed that one of the physical symptoms reported during the pandemic was sleep problems (34). Another study conducted in China, before and during the pandemic, showed that insomnia increased significantly among the elderly (69).

Regarding chronic diseases, the main ones reported were systemic arterial hypertension (SAH - 69.44%; 50/72) and diabetes (23.61%; 17/72). Studies indicate SAH as the most common chronic disease among the elderly (17). The research analysed the blood pressure of the interviewees. A generalized increase was observed among the elderly, with SBP > 140 and DBP ≥ 90 increasing from 12.50% (9/72) in the last year to 45.83% (33/72) after the onset of the pandemic. A study conducted with hypertensive and diabetic individuals (38) showed that, after the advent of the pandemic, most of the elderly increased the dose and/or amount of medication.

The COVID-19 pandemic imposed significant changes in the lifestyle of the global population, affecting various aspects of health, including blood pressure. Factors such as changes in daily routine, consumption of an inadequate diet (17), increased levels of anxiety and stress, in addition to the reduction or suspension of physical activities, have been associated with increased blood pressure during this period. A study conducted with hypertensive individuals who participated in a training program revealed that the onset of the pandemic resulted in a significant decrease in motivation to practice physical activities remotely. As a consequence, changes in antihypertensive medication dosages and blood pressure values were observed in these individuals (6).

Moreover, the pandemic negatively impacted cardiovascular health care in Brazil, especially regarding the services offered by the Unified Health System (SUS). An analysis of the pandemic period indicated a reduction in the provision of cardiovascular health care, which contributed to an increase in the in-hospital lethality rate due to complications related to high blood pressure (14,18,70,71).

Recent research has emphasized the importance of maintaining a healthy lifestyle during periods of health crisis, including regular physical activity and the adoption of a balanced diet, as effective strategies for blood pressure control. A study conducted by Da Silva et al. (2023) (72) highlighted that personalized online interventions can be a viable alternative to encourage

physical activity among the elderly, mitigating the negative effects of the pandemic on general and cardiovascular health.

The need to adapt health services to ensure continuity of care for hypertensive patients during the pandemic was also evidenced. Initiatives such as remote consultations and online physical exercise programs have shown potential to fill part of the gaps left by the reduction of face-to-face services, contributing to the maintenance of cardiovascular health during periods of social isolation (73).

It is absolutely relevant how significantly COVID-19 affected the memory of the elderly, with 73.68% (14/19) of the patients who had the disease presenting an increase in memory loss in recent months. Other studies have also demonstrated that memory problems were present in a large proportion of individuals who contracted the disease (74,75). In addition to memory problems, 84.21% (16/19) cited some sequelae of the disease. A survey conducted in the United Kingdom demonstrated that 70% of patients who had COVID-19 reported sequelae of the disease, including memory impairment, hair loss, cough, shortness of breath, and fatigue. Advanced age was related to worse outcomes (76).

The evidence accumulated during the COVID-19 pandemic highlights the urgent need for mitigation strategies focused on the mental health of the elderly population. Given the vulnerability of this group to loneliness and social isolation, it is imperative that public policies and clinical interventions be adapted to meet their specific needs. Recommendations for future actions include: (1) Development of Virtual Social Support Programs: The implementation of communication technologies can help minimize the impact of isolation, allowing the elderly to maintain contact with family and friends, and participate in online social activities and support groups (77); (2) Accessible and Specific Mental Health Services for the Elderly: Expand access to mental health services that cater to the particularities of the elderly, including therapies adapted for this age group and training programs for caregivers on how to deal with mental health issues (78); (3) Education and Awareness about Mental Health: Public education campaigns to destigmatize

mental health issues among the elderly, promoting awareness of the importance of emotional and psychological well-being and encouraging the search for professional help when necessary (79); (4) Continued Research: Foster research on the long-term effects of the pandemic on the mental health of the elderly, to better understand the needs of this population and develop more effective interventions (80); (5) Integrated Public Policies: Develop policies that integrate physical and mental health, ensuring that public health measures consider the psychosocial impacts of isolation and promote resilience strategies among the elderly (81).

By adopting a multifaceted approach that encompasses everything from technology implementation to integrated public policies, it is possible to mitigate the adverse effects of social isolation on the mental health of the elderly, promoting healthier and more resilient aging.

The present investigation, although contributing valuable insights to the field of study, has limitations that should be considered when interpreting the results. Firstly, the data collection methodology deserves critical attention. Although the recruitment of participants was conducted face-to-face in the waiting room of public consultation locations, it is imperative to emphasize that during this period, the number of consultations was reduced due to contingencies of the service itself, as well as a lower demand from users who feared leaving their homes, even if they experienced changes in their general condition or had scheduled appointments. This issue may affect the representativeness of the sample and, consequently, the generalization of the results. Secondly, the temporal context in which the study was conducted, during the COVID-19 pandemic, adds a layer of complexity to the interpretation of the results. The existing literature indicates that the pandemic had a substantial impact on the psychological conditions of the population, exacerbating symptoms of anxiety, depression, stress, and insomnia (34,35). Therefore, it is plausible to consider that the psychological state of the participants during the research period may have been influenced by factors associated with the pandemic, which could distort the responses given and affect the validity of the results.

Recent studies corroborate this perspective, suggesting that the pandemic significantly altered patterns of behaviour and mental health in various populations, which should be taken into account when analysing studies conducted during this period (82,83).

These considerations highlight the importance of rigorous methodological approaches and the need to contextualize the results within the unique circumstances in which the research was conducted. Future studies should seek strategies to mitigate these limitations, such as diversifying recruitment methods and conducting longitudinal analyses to assess mental health trends at different stages of the pandemic.

Conclusion

This study showed that the majority were men, aged between 60 and 70 years, white, married, lived with a partner, had incomplete elementary education, were retired, with a family income of one to three minimum wages, attended some religion, and used some digital social network. Regarding health problems, hypertension and diabetes were the most cited chronic diseases.

With the uncertain scenario of the COVID-19 pandemic, this research demonstrated that anxiety presented itself more expressively than depression. Regarding physical health, there was a significant decrease in the practice of physical activity during the pandemic and an increase in blood pressure values, compared to the values of the last year. The digital inclusion of the elderly was essential during the pandemic, and the elderly who used some social networks were less depressed, due to mutual support and sharing of experiences, in addition to cognitive stimulation, factors that moderated the incidence of depression in the moment of uncertainty caused by COVID-19.

In this context, public practices and policies aimed at promoting the health of the elderly become essential. Social integration of the elderly through digital means and the encouragement of physical activity should be carried out in order to minimize the physiological and psychological effects of the pandemic.

Ethic committee: This study, following the norms of CNS Resolution No. 466 of 2012, was evaluated by the Research Ethics Committee of the Faculty of Medicine of São José do Rio Preto - State Autarchy (FAMERP). The project submitted for appreciation by the Research Ethics Committee received Opinion No. 4,331,127 on October 9, 2020.

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Correspondence:
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João Daniel de Souza Menezes
Faculty of Medicine of São José do Rio Preto; Center for Studies and Development of Health Education - Faculty of Medicine of São José do Rio Preto (CEDES / FAMERP).
Av. Brg. Faria Lima, 5416 - Vila Sao Pedro, São José do Rio Preto - SP, 15090-000
E-mail: joao.menezes@edu.famerp.br
ORCID: 0000-0001-8767-7556