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Aged Caregivers in COVID-19: Geriatric Depression and Anxiety Prevalence Related to Psychosocial Characteristics

Adultos mayores cuidadores durante COVID-19: prevalencia de depresión geriátrica y ansiedad en relación con características psicosociales

María Florencia Tartaglini[a,*], Silvina Lidia Heisecke[b], Paula Daniela Hermida[a], Carolina Feldberg[a], Silvia Deborah Ofman[a], María Verónica Somale[c], Diego Caruso[d]

[a]Instituto de Neurociencias Buenos Aires (INEBA - CONICET), Buenos Aires, Argentina
[b]Research Unit, Centro de Educación Médica e Investigaciones Clínicas - Consejo Nacional de Investigaciones Científicas y Técnicas (CEMIC - CONICET), Buenos Aires, Argentina
[c] Facultad de Ciencias Sociales, Universidad de Palermo, Buenos Aires, Argentina
[d]Department of Clinical Research, Unidad Asistencial Dr. César Milstein, Buenos Aires, Argentina

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Abstract

Background: The COVID-19 pandemic affected aged family caregivers' access to support resources, increasing the burden of care due to psychological distress. **Objective**: To describe the prevalence of geriatric depression and anxiety in older adult family caregivers during the COVID-19 pandemic and its association with psychosocial characteristics. **Method**: Cross-sectional study including 180 family caregivers replying to an online sociodemographic data questionnaire, GAD-7 and GDS-VE scales. **Results**: Caregivers' median age was 66 years, 81% female, 71% employed, 57% parents or brothers/sisters and lived with the relative. The prevalence of geriatric depression and anxiety was 46% and 71%, respectively. Anxiety levels were associated with cohabitation with the patient (OR 2.44). A trend between female sex and the presence of anxiety (OR 2.41) was observed. An association was also found between cohabitation with the patient and depression (OR 1.92). Cohabitation with the patient significantly increased the risk of depression (OR 2.22). **Conclusions**: Cohabitation with the patient was associated with depression and onset of anxiety symptoms, remarkably in female caregivers.

Keywords: COVID-19, aged caregivers, geriatric depression, anxiety, psychosocial characteristics.

Resumen

Antecedentes: el COVID-19 afectó el acceso de los cuidadores familiares adultos mayores a los recursos de apoyo, aumentando la sobrecarga debida al estrés por la situación de cuidado. **Objetivo**: describir la prevalencia de depresión geriátrica y ansiedad en adultos mayores cuidadores durante el COVID-19 y su asociación con características psicosociales. **Método**: estudio transversal sobre 180 cuidadores familiares. Se administró un cuestionario sociodemográfico y las escalas GAD-7 y GDS-VE. **Resultados**: la edad media de los cuidadores fue de 66 años, 81% mujeres, 71% trabajaba, 57% padres o hermanos/as y vivía con el familiar. La prevalencia de depresión y ansiedad geriátrica fue de 46% y 71%, respectivamente. Los niveles de ansiedad se asociaron con la cohabitación con el paciente (OR 2.44). Se observó una tendencia entre el sexo femenino y la presencia de ansiedad (OR 2.41). También se encontró una asociación entre la cohabitación con el paciente y la depresión (OR 1.92). La cohabitación con el paciente aumentó significativamente el riesgo de depresión (OR 2.22). **Conclusiones**: la convivencia con el paciente se asoció con el riesgo de depresión y la aparición de síntomas de ansiedad, más marcadamente en cuidadoras.

Palabras clave: COVID-19, adultos mayores cuidadores, depresión geriátrica, ansiedad, características psicosociales.

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* florenciatartaglini@gmail.com

Introduction

When the COVID-19 pandemic was declared on March 11, 2020 (World Health Organization, 2020), preventive and mandatory lockdown was implemented in Argentina as a strategy to avoid virus transmission and disease incidence and mortality. Epidemiological data from the Argentinian Ministry of Health show that the mortality rate between March and August 2020 was 21% (Ministerio de Salud de Argentina, 2020a) (see Appendix 1). No vaccines were available, and the first doses arrived towards the end of December 2020 (Ministerio de Salud de Argentina, 2020b).

In this context, older adults were remarkably affected by the impaired access to medical control and treatment of chronic conditions and their limited use of telemedicine. Concomitantly, the general reorganization of family tasks (virtual education, home office) as well as public transport use restrictions were factors that reduced social support networks (Tartaglini, 2024).

This unexpected health emergency overlapped with two other preexisting converging phenomena: increased life expectancy and population aging. Until the COVID-19 event, infectious diseases control and medicine technological progress had favored people survival and lead to the over 60 years old population global increase over the proportional reduction of younger cohorts. At present, in Argentina, Buenos Aires City presents the oldest population in the country since 21.6% of its citizens is older than 60 years (Gobierno de la Ciudad Autónoma de Buenos Aires, 2022).

Although aging is not necessarily associated with illness, some negative cumulative effects related to pernicious human behaviors such as smoking and sedentary lifestyles, obesity, frailty, or traumatic brain injuries, are present. Long term exposure to these factors may predispose to mental disorders, neurodegenerative processes, and chronic non-transmissible diseases.

In this context, it can be stated that many older adults are at great risk of developing disabling conditions that demand caregiving. Most likely, a cohabiting older adult relative will have to become a primary caregiver. Thus, the main issue is that the family caregiver, already dealing with his/her own aging challenges and medical conditions, will also have to care for someone else, often sacrificing time for self-care (Martín, 2017).

Primary family caregivers can be a relative, friend, or neighbor belonging to the social support network of a chronically ill person, who dedicates most of his/her time to care activities. Family caregivers do not receive economic compensation for the tasks they perform, and they are usually perceived as primarily responsible for the patient´s well-being. Scientific literature describes caregivers as «second victims» or «hidden patients» since caring for a disabled elderly person is a stressful process, which increases caregivers' physical and mental health risks. Caring tasks also tend to restrict his/her social life to the «caregiver-patient» relationship (Siti, 2023; Vitaliano et al., 2003). Perlado (1995) noticed that family caregivers should be considered as a socio-sanitary risk group. In this sense, risk is understood as the probability of developing various disorders described as the «Caregiver Syndrome». This syndrome gathers physical (asthenia, headaches, sleep disturbances, low back pain, skin conditions, gastrointestinal disorders) and psychological symptoms (feelings of tiredness, sadness, anxiety/depression, irritability, and guilt) (Broxson & Feliciano, 2020). Additionally, most caregivers are women, mainly patient´s wife or daughters, and research work points to their greater vulnerability, even more if they are also older adults (Tartaglini et al., 2019).

Hiring of formal caregivers with specific training and economic compensation for the tasks they perform is an aid for family caregivers (Martín & Rivera, 2022). However, this option was limited or interrupted during the pandemic not only because of the lockdown itself but also because, in some cases, the formal caregivers themselves belonged to vulnerable groups at greater

risk of COVID-19 mortality (pregnant women, people over 60 years old, smokers, and subjects suffering respiratory diseases, diabetes, or immunosuppression) (Cervigni et al., 2022).

Besides overload feelings, family caregivers often exhibit generally underdiagnosed mood disorders (Herrera et al., 2020). In Argentina, Stagnaro et al. (2018) described that the over 75 years old population is at greater risk of developing mental disorders, being major depression the most frequent one. The heterogeneity of clinical presentation of geriatric depression is associated with biological and psychosocial etiologies. Regarding anxiety disorders, authors describe that people over 75 years old were the group with the highest prevalence (16.4%) (Alexopoulos, 2005; Cobos & Vásquez, 2022; Salcedo et al., 2022; Stagnaro et al., 2018).

The COVID-19 pandemic and lockdown worsened the scenario since older adults as well as their family caregivers were affected by radical changes in health care dynamics and limitations in support resources (Russo et al., 2021). Several research works reported mood modifications within the pandemic context (Altieri & Santangelo, 2021; Chiu et al., 2022; Mélo et al., 2022; Messina et al., 2022; Schapira, 2020).

The objective of this study was to describe the prevalence of geriatric depression and anxiety in older adult family caregivers during the COVID-19 pandemic and its association with psychosocial characteristics.

Methods

Design

The study employed an observational, cross-sectional design, in which data were collected at a single point in time using a structured battery of validated questionnaires. A quantitative approach was used to analyze the responses and identify patterns within the study population.

Participants

Between March and August 2020, dependent people's Argentine family caregivers, ≥ 60 years old, living in Buenos Aires City, were invited to complete an online questionnaire. Subjects with visual, cognitive, and/or motor impairment that prevented them from completing the online survey autonomously were excluded and forms with missing data were discarded.

Instruments

Closed ad-hoc questions on caregivers' sociodemographic data. The collected variables were age (years), gender, marital status, educational level, job occupation, as well as cohabitation and relationship with the assisted person.

Yesavage Geriatric Depression Questionnaire (GDS; Yesavage, 1988). Argentine validation (Tartaglini et al., 2021), performed on the Spanish version of Martínez et al. (2002). The questionnaire includes 15 dichotomy items (reply options yes/no). Each question can score 0 or 1, where the option 1 is the depression indicator. Total score sums up the 15 items results. The original authors proposed cut-off scores of 0 to 4 absent, 5 to 8 mild, 9 to 11 moderate, and 12 to 15 severe depression.

Generalized Anxiety Disorder scale (GAD-7; Spitzer et al., 2006). Spanish adapted version by García-Campayo et al. (2010). GAD-7 assesses generalized anxiety disorder, according to DSM-5 definition (American Psychiatric Association, 2013), during the last two weeks. It is a seven items self-administered scale, worldly applied in different mental health settings. Frequency of symptoms is scored on a 4-point Likert scale ranging from zero (absence of the symptom) to three (present almost every day). Total GAD-7 scores range from zero to 21, a score ≥ 10 indicates generalized anxiety disorder presence.

Procedure

The study protocol was approved by the Ethics Committee of the Instituto de Neurociencias Buenos

Aires to be administered through an online survey. All participants expressed their approval through an informed consent form stating the objective and characteristics of the study, their voluntary participation, and the preservation of data anonymity. The ethical aspects of the Declaration of Helsinki of 1964, amended by the 64th General Assembly in 2013 were accomplished.

Data analysis

Categorical variables are presented as absolute frequencies and proportions while continuous variables are summarized as median and interquartile range according to the non-parametric data distribution.

For the bivariate analysis, the associations between the categorical variables were evaluated with the chi square test. The distribution of continuous variables was evaluated with the Shapiro-Wilks test. Medians of the continuous variables were assessed with the Wilcoxon rank sum test, according to data distribution.

Two multivariate linear regression models were constructed to evaluate the independent effect of sociodemographic predictors on the presence of depression and anxiety. Adjusted coefficients and 95% confidence intervals (CI 95%) were calculated. The distribution of the residuals was evaluated using a plot. Alpha level was set at 5%.

Sample size estimates

Covinsky et al. (2003) reported a 32% depression rate in family caregivers. An estimated sample size of 171 participants was estimated for a 32% ± 7 anticipated frequencies with 95% CI.

Green's rule was used to estimate the number of participants needed to perform a multivariate analysis of the anxiety predictors (Green, 1991). Considering the intention to include eight variables, the minimum number of subjects to be surveyed was 114 participants.

Results

Description of the population

Of the 244 caregivers who replied to the survey, 24 did not meet the inclusion criteria (six were < 60 years old, ten were foreigners, and eight Argentines living abroad during the COVID-19 pandemic). Twelve subjects did not sign the informed consent form, and 28 surveys were incomplete. Finally, 180 caregivers gave their consent and completed the questionnaire.

The median age of the surveyed caregivers was 66 years (IQR 62-70), 81% were female, 57% were parents or brothers/sisters of the assisted relative, 76% had a tertiary or university educational level, 58% lived with the relative, and 71% had a job occupation (Table 1).

Main outcomes

Geriatric depression was detected in 83 out of 180 participants yielding a 46.1% prevalence (95% CI 38.8 - 53.4). Some levels of anxiety (GAD-7 5 or higher) were detected in 127 out of 180 participants, with a prevalence of 70.5% (95% CI 63.6 - 66.9).

Association of anxiety with caregiver's sociodemographic characteristics was assessed. In the bivariate analysis, anxiety was associated with cohabitation with the patient [OR 2.44 (95% CI 1.20 - 5.18), *p*-value .013]. A trend between female sex and presence of anxiety [OR 2.41 (95% CI .91 - 7.43), *p*-value .08] was observed (Table 2).

When compared to non-depressed caregivers, an association was also found between cohabitation with the patient and the presence of depression [OR 1.92 (95% CI 1.05 - 3.54), *p*-value .033] (Table 3).

Table 1

Sociodemographic characteristics of the surveyed family caregivers (n = 180)

Variable		
Age (years) (Median-IQR)	66	62 - 70
Female (*n* - %)	146	81.1
Live in Buenos Aires (*n* - %)	126	70.8
Have daughters/sons (*n* - %)	28	15.6
Education (*n* - %)		
- Primary	8	4.4
- Secondary	34	18.9
- Tertiary/University	138	76.7
Patient´s relationship (*n* - %)		
- Daughter/son	21	11.7
- Parent/brother-sister	103	57.2
- Spouse	56	31.1
Cohabitation with the patient (*n* - %)	104	57.8
Job occupation (*n* - %)	128	71.1

Note: IQR = interquartile range.

Table 2

Bivariate analysis between sociodemographic predictors and generalized anxiety disorder scale (GAD-7) scores

Variable	GAD-7 0-4 *n* = 53 *n* (%)	GAD-7 5-9 *n* = 79 *n* (%)	GAD-7 ≥ 10 *n* = 48 *n* (%)	*p* value
Age, median (IQR)	65 (62, 69)	67 (62, 71)	65 (61.5, 70.5)	.4
Female	38 (72)	65 (82)	43 (90)	.068
Live in Buenos Aires	38 (73)	53 (67)	35 (74)	.62
Have daughters/sons	11 (21)	11 (14)	6 (12)	.45
Education				
- Primary	1 (2)	6 (8)	1 (2)	.26
- Secondary	7 (13)	17 (22)	10 (21)	
- Tertiary/University	45 (85)	56 (71)	37 (77	
Patient´s relationship				
- Daughter/son	3 (6)	13 (16)	5 (10%)	.22
- Parent/brother-sister	36 (68)	42 (53)	25 (52)	
- Spouse	14 (26)	24 (30)	18 (38)	
Cohabitation with the patient	27 (51)	42 (53)	35 (73)	.045
Job occupation	38 (72)	55 (70)	35 (73)	.92

Note: GAD-7 = Generalized Anxiety Disorder 7-item; IQR = interquartile range.
Anxiety levels according to GAD-7 scores
0-4 = absence
5-9 = mild
≥ 10 = moderate to severe

Table 3

Comparison between sociodemographic predictors and the geriatric depression questionnaire (GDS) scores

Variable	GDS 0-4 *n* = 97 *n* (%)	GDS 5-11 *n* = 83 *n* (%)	*p* value
Age, median (IQR)	67 (63, 70)	65 (62, 70)	.12
Female	74 (76)	72 (87)	.074
Live in Buenos Aires	66 (71)	60 (72)	.52
Have daughters/sons	15 (16)	13 (16)	.97
Education			.39
- Primary	3 (3)	5 (6)	
- Secondary	16 (17)	18 (22)	
- Tertiary/University	78 (84)	60 (72)	
Patient´s relationship			.54
- Daughter/son	11 (12)	10 (12)	
- Parent/brother-sister	59 (63)	44 (53)	
- Spouse	27 (29)	29 (35)	
Cohabitation with the patient	49 (53)	55 (66)	.033
Job occupation	69 (74)	59 (71)	.99

Note: GDS = Geriatric Depression Scale; IQR = interquartile range.
Depression levels according to GDS scores
0-4 = absence
5-11 = mild to moderate
12 to 15 = severe (this category had no subjects)

In the adjusted analysis of the anxiety model, we found that female gender increased the GAD-7 anxiety scale score by 2.5 points (95% CI .72 - 4.30) and cohabitation with the patient raised it by 1.4 points (95% CI .03 - 2.86) regardless of other variables (Table 4).

Cohabitation with the patient significantly increased the risk of depression [OR 2.22 (95% CI 1.16 - 4.23)] (Table 5).

Finally, a positive moderate correlation was observed between geriatric depression and anxiety (Spearman's rho = .40, *p*-value: .00001) (Figure 1).

Table 4

Multivariate linear regression analysis between sociodemographic predictors and anxiety

Variable	Coefficient B	CI 95%	*p* value
Age	-.0111098	-.1292418 a .1070223	.853
Female	2.514239	.7258996 a 4.302579	.006
Have daughters/sons	-.8526326	-2.779552 a 1.074286	.384
Education			
- Primary	Ref	-	-
- Secondary	.643745	-3.008734 a 4.296224	.728
- Tertiary/University	-.0855137	-3.47702 a 3.305993	.96
Cohabitation with the patient	1.450237	.0314841 a 2.86899	.045
Job occupation	-.4888892	-2.029463 a 1.051684	.532

Note: CI = Confidence interval.

Table 5

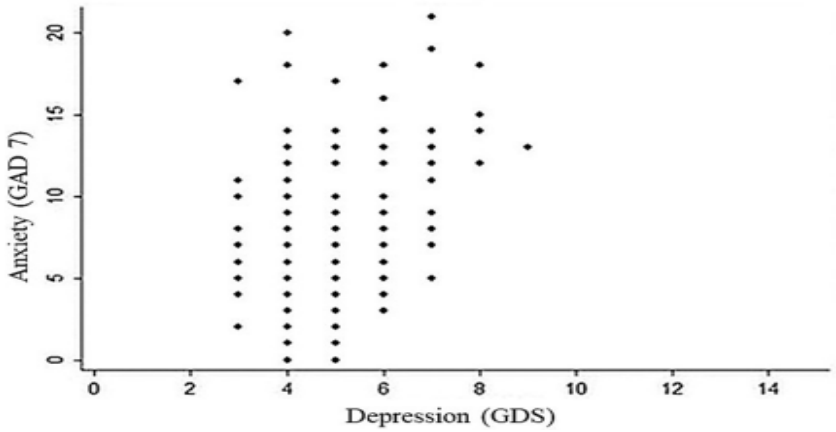
Multivariate analysis among baseline sociodemographic characteristics of caregivers and depression (GDS > 5)

Variable	Coefficient B	CI 95%	*p* value
Age	-.0185	-.0518 to .0148	.275
Female	.2098	-.2971 to .7168	.415
Have daughters/sons	.1826	-.3547 to .7201	.503
Education			
- Primary	Ref	-	-
- Secondary	.0601	-.9755 to 1.0958	.909
- Tertiary/University	-.1255	-1.0858 to .8347	.797
Cohabitation with the patient	.50	.1093 to .9105	.013
Job occupation	-.0060	-.4414 to .4294	.978

Note: CI = Confidence interval.

Figure 1

Correlation between anxiety and geriatric depression



Note: Spearman's rho = .40, *p*-value: .00001

Discussion

When considering aspects related to healthy aging, the World Health Organization (2023) describes that although elder people's health variations may be due to genetics, its greater influencing factors are physical and social environment, particularly housing, neighborhood, and community as well as personal traits such as gender, ethnicity, or socioeconomic status. Likewise, physical and social environments can directly affect health, creating barriers or incentives that determine health-related opportunities, decisions, and habits despite abilities loss. For this reason, the main objective of this study was to analyze the prevalence of geriatric depression and anxiety in Argentine family caregivers and its relationship with the caregivers' psychosocial characteristics during the first months of the COVID-19 pandemic.

The sociodemographic and psychosocial profile registered in this work were consistent with changes associated with increased life expectancy and population aging. When comparing studies´ results from 1980, 2010, and the present work, it is possible to identify changes in the average age of caregivers who turned from being middle-aged to elder adults (Tartaglini & Stefani, 2006; Tartaglini et al., 2017).

Regarding gender, although most caregivers continue to be women, we observed an increase in the percentage of male caregivers (Sundström et al., 2018). Likewise, as regards «patient-caregiver» relationship, marked changes were detected since the number of caring spouses, parents, and siblings increased while the number of caring daughters decreased (Abellan et al., 2017). Finally, higher caregivers' educational and lower job activity levels were observed (Tartaglini, 2020).

In this study, we registered a high prevalence of geriatric depression and anxiety (46% and 71%, respectively) in older caregivers, which is in line with other research works that highlight not only a high prevalence but also a high frequency of underdiagnose (Carrillo-Cervantes et al., 2022; Mares-Rico et al., 2022; Wister et al., 2022). In Argentina, older adults over 75 years old are at higher risk of suffering from a depressive disorder (Stagnaro et al., 2018). This circumstance may be explained by last years' life different types of loss (physical, economic, and psychosocial) which, together with vascular and degenerative aging processes, can predispose to depression onset (Hummel et al., 2017; Miranda et al., 2020).

The preventive lockdown imposed during 2020 against the COVID-19 first wave radically modified several human life spheres, especially health, work, and family dynamics (Cipriani et al., 2022). In this context, the elder and the chronically ill people were considered risk groups that required special care provision. Services from gerontology assistants or members of the patient's social network were reduced to a minimum due to risk of SARS-CoV2 exposure, a synonymous of death at the beginning of the pandemic. For this reason, many dependent people found themselves alone, others had to join a relative´s home or include permanent companions in their homes. In this way, the pandemic made visible the fundamental role that families play as care providers and highlighted the lack of care structures when there is no family network.

Our results showed that cohabitation with the dependent person significantly increased the risk of geriatric depression and anxiety symptoms onset in the elderly family caregiver. The elder vulnerability was increased due to the COVID-19 pandemic and the remarkable changes in their daily dynamics. These findings coincident with previous works reporting that when care demands exceed the caregiver's internal and external capacities, he/she may experience negative emotions and perceptions, subjectively characterized by a feeling of burden, grief, strain, anxiety, depression, or distress (Tartaglini et al., 2019; 2021). Specifically, Park y Kim (2022) analyzed the influence of the cohabitation type on the psychological vulnerability of chronically ill relatives'

family caregivers within the pandemic context. Their results showed that family caregivers living with the patient presented higher scores of depressive symptoms and stress recognition as well as lower scores of subjective health, happiness, and life quality (Semere et al., 2022). Likewise, Martínez (2020) described a high prevalence of anxiety and depression both in the general population and in caregivers, the latter presenting a higher risk than the former.

Asmundson y Taylor (2020) reported that people with high anxiety levels are likely to interpret harmless bodily sensations in a catastrophic way. This increases their anxiety levels and influences their behavior and ability to make up decisions. Within the pandemic context, these mood changes were manifested as maladaptive behaviors such as frequent visits to health care centers to rule out SARS CoV-2 infection, excessive hand washing, and extreme social isolation. Finally, Ozamiz-Etxebarria et al. (2020) demonstrated an increase in anxious and depressive symptoms after confinement.

Our results coincide with Sabo y Chin (2021) recommendations. These authors, after performing a systematized revision about self-caring needs and practices received by older adult caregivers, concluded that they required support to find a balance between effectively fulfilling the caregiver role and promoting their own health. With the growing number of older adults playing the caregiver role, further exploration of the way to best address the vulnerabilities of this population is required. The caregiving role coupled with aging and the presence of chronic illness creates unique health challenges for the caregiver. It is important for healthcare professionals to assess physical, psychological, and financial caregiver needs and engage resources to support them. For these reasons, the World Health Organization (2017) recommends that joint care should be provided to the patient and his/her caregiver with the aim to preserve also the caregiver's well-being.

Lastly, in agreement with Ploeg et al. (2020), we think it is necessary to highlight the substantial epidemiological, social, and economic impacts that chronic diseases generate throughout the world. It is therefore imperative that health systems address them by attending to the specific requirements of patients and their family caregivers and facilitate their connection with health and community support services.

Limitations

As data for the present work was collected through an online survey, it was not possible to randomly select the subjects to answer the questionnaires. Despite this limitation, we considered it interesting to collect information on family caregivers in the context of a pandemic.

We also consider it necessary to conduct a new study to compare the analyzed variables during and after the pandemic context in order to achieve a deeper understanding of the pandemic influence.

The originating cause of dependency of the assisted person was not specifically determined.

Future data collection is planned to overcome these limitations.

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Conflicts of interest

All authors declared that there are no conflicts of interest.

Ethical responsibility

The study protocol was approved by the Ethics Committee of the Instituto de Neurociencias Buenos Aires to be administered through an online survey. All participants expressed their approval through an informed consent form that established the objective and characteristics of the study, their voluntary participation and the preservation of data anonymity. The ethical aspects of the 1964 Declaration of Helsinki, as amended by the 64th General Assembly in 2013, were complied with.

Authorship contribution

MFT: Survey design, electronic distribution of the survey, data collection, data analysis, preparation of the article draft, critical revision of the manuscript content, review and final approval of the manuscript as it is submitted for publication.

SLH: Electronic distribution of the survey, data collection, preparation of the article draft, editing the article, review and final approval of the manuscript as it is submitted for publication.

PDH: Survey design, electronic distribution of the survey, critical revision of the manuscript content, review and final approval of the manuscript as it is submitted for publication.

CF: Survey design, electronic distribution of the survey, critical revision of the manuscript content, review and final approval of the manuscript as it is submitted for publication.

SDO: Survey design, electronic distribution of the survey, critical revision of the manuscript content, review and final approval of the manuscript as it is submitted for publication.

MVS: Electronic distribution of the survey, critical revision of the manuscript content, review and final approval of the manuscript as it is submitted for publication.

DC: Electronic distribution of the survey, data analysis, critical revision of the manuscript content, review and final approval of the manuscript as it is submitted for publication.

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María Florencia Tartaglini

Instituto de Neurociencias Buenos Aires (INEBA - CONICET), Buenos Aires, Argentina.

Doctora de la Universidad de Buenos Aires, área de Humanidades Médicas (Facultad de Medicina, Universidad de Buenos Aires, UBA). Licenciada en Psicología (Facultad de Psicología, UBA). Investigadora adjunta del Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) con lugar de trabajo en el Instituto de Neurociencias Buenos Aires (INEBA). Su línea principal de investigación se centra en cuidadores familiares de pacientes con demencias. Docente de la Facultad de Psicología y Psicopedagogía (Universidad del Salvador). Coordinadora de dispositivos de orientación familiar de personas con deterioro cognitivo.

ORCID: https://orcid.org/0000-0002-7925-7831

Autor corresponsal: florenciatartaglini@gmail.com

Silvina Lidia Heisecke

Unidad de Investigación, Centro de Educación Médica e Investigaciones Clínicas-Consejo Nacional de Investigaciones Científicas y Técnicas (CEMIC - CONICET), Buenos Aires, Argentina.

Magíster en Gestión Ambiental, Universidad Nacional de General San Martín, Buenos Aires, Argentina. Médica veterinaria (Facultad de Ciencias Veterinarias, Universidad de Buenos Aires). Profesional principal de la carrera de apoyo a la Investigación del Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET). Staff de la Unidad de Investigación del Centro de Educación Médica e Investigaciones Clínicas (CEMIC), Unidad Ejecutora de CONICET. Asistente de Investigación en el Servicio de Investigación y Rehabilitación de Enfermedades Neurocognitivas. Coordinadora del curso de Cuidadores Familiares dictado por SIREN-CEMIC-CONICET y la Asociación de Lucha contra el Mal de Alzheimer y alteraciones semejantes de la República Argentina (ALMA).

ORCID: https://orcid.org/0000-0001-9180-9398

silvinahe@gmail.com

Paula Daniela Hermida

Instituto de Neurociencias Buenos Aires (INEBA - CONICET), Buenos Aires, Argentina.

Doctora de la Universidad de Buenos Aires (UBA), área de Humanidades Médicas. Licenciada en Psicología, Facultad de Psicología, UBA. Se desempeña como investigadora adjunta de CONICET, en el Instituto de Neurociencias Buenos Aires (INEBA). Es profesora adjunta en la Segunda Cátedra de Psicología del Trabajo en la Facultad de Psicología, UBA. Su línea principal de investigación se vincula con el análisis del impacto de la jubilación sobre la salud de los adultos mayores. Dirige el Programa de Extensión de Preparación para la Jubilación de la Facultad de Psicología, UBA.

ORCID: https://orcid.org/0000-0003-1585-1222

lic.paulahermida@gmail.com

Carolina Feldberg

Instituto de Neurociencias Buenos Aires (INEBA - CONICET), Buenos Aires, Argentina.

Doctora de la Universidad de Buenos Aires, área de Humanidades Médicas (Facultad Medicina, UBA). Licenciada en Psicología (Facultad Psicología, UBA). Investigadora Adjunta en CONICET y Docente en la Facultad de Psicología de la UBA. Su línea principal de investigación se vincula con el rol de la participación social en las funciones cognitivas en adultos mayores.

ORCID: https://orcid.org/0000-0001-5470-7755

carolfeldberg@gmail.com

Silvia Deborah Ofman

Instituto de Neurociencias Buenos Aires (INEBA - CONICET), Buenos Aires, Argentina.

Doctora de la Universidad de Buenos Aires, área de Humanidades Médicas (Facultad Medicina, UBA). Licenciada en Psicología (Facultad Psicología, UBA). Educadora certificada en diabetes (Sociedad Argentina de Diabetes). Investigadora asistente del Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) con lugar de trabajo en el Instituto de Neurociencias Buenos Aires (INEBA). Línea de investigación impacto en la esfera psicológica y social de las enfermedades no transmisibles (hipertensión y diabetes) en población de edad mediana y avanzada. Docente de la Facultad de Psicología y Psicopedagogía (Universidad del Salvador). Experiencia en el área psicología de la salud.

ORCID: https://orcid.org/0000-0002-7393-5718

debyofman@gmail.com

María Verónica Somale

Facultad de Ciencias Sociales, Universidad de Palermo, Buenos Aires, Argentina.

Médica Cirujana, Facultad de Ciencias Médicas de la Universidad Nacional de Córdoba, Argentina (UNC). Especialista en Neurología, Escuela de Graduados de la Facultad de Ciencias Médicas de la UNC. Docente Universitaria en Medicina, Secretaría Académica de la Facultad de Ciencias Médicas de la UNC. Docente titular de la Cátedra de Neurociencia de la Facultad de Ciencias Sociales de la Universidad de Palermo, Buenos Aires. Exjefa del área de Neurociencias Cognitivas del Instituto de Neurociencias Cognitivas Buenos Aires (INEBA). Miembro adjunto de la Sociedad Neurológica Argentina. Integrante del Grupo de Neurología de la conducta y neurociencias cognitivas, Sociedad Neurológica Argentina. Socia adherente de Asociación de Psiquiatras de Argentina (APSA).

ORCID: https://orcid.org/0000-0001-9072-2792

mvsomale@gmail.com

Diego Caruso

Departamento de Investigación Clínica, Unidad Asistencial Dr. César Milstein, Buenos Aires, Argentina.

Doctor de la Universidad de Buenos Aires, Área Medicina Clínica (Facultad Medicina, UBA). Magíster en Investigación Clínica (Universidad Hospital Italiano de Buenos Aires), Médico especialista en Medicina Interna (Facultad de Medicina, UBA). Docente en la Facultad de Medicina de la UBA (Medicina A y B). Su línea de investigación se relaciona con diversas problemáticas en adultos mayores en su interacción con el sistema de salud. Líder del Departamento de Investigación, educación, calidad e innovación del Hospital Dr. César Milstein, Buenos Aires, Argentina. Coordinador del área de investigación clínica de la Clínica Santa Isabel, Buenos Aires, Argentina.

ORCID: https://orcid.org/0000-0003-2981-7981

diecaruso@gmail.com

Appendix 1

Epidemiological data of the COVID-19 pandemic in Argentina, March-August 2020

Month	Infections/month (*n*)	Infections/day (mean)	Deaths/month (*n*)	Deaths/day (mean)
March	1076	40	70	3
April	3369	112	276	9
May	12 813	413	442	14
June	50 707	1690	952	32
July	122 609	3955	1811	58
August	226 439	7304	5126	165
Total	417 013		8677	

Note: Data from the Argentine Ministry of Health.