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Original Research Article

Depression, self-esteem disorders and emotional distress during the COVID-19 pandemic in the elderly population of Mexico City and the metropolitan area of the valley of Mexico (a preliminary study)

José Daniel Caballero-Flores*

Faculty of Higher Studies Zaragoza, National Autonomous University of Mexico, Mexico City, Mexico

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***Correspondence:**
José Daniel Caballero-Flores,
E-mail: j.danielcaballerof_mc@comunidad.unam.mx

ABSTRACT

Background: SARS-CoV-2 has spread over the world and caused concern and panic in the elderly, which can promote the development of mental illness. The main aim of this study was to identify depression and self-esteem disorders in the elderly population of Mexico City and the metropolitan area of the valley of Mexico in the context of the COVID-19 pandemic.
Methods: A non-experimental, observational, cross-sectional, correlational and descriptive study was conducted via means of a survey distributed and applied via telephone and online using Google Forms among the elderly via snowball sampling. Data was analysed in Microsoft Excel and bivariate analysis was performed using Chi squared test with a statistical significance of $p \leq 0.05$.
Results: The sample was conformed by 175 participants, 115 were female and 60 were male. 4.35% of women and 1.67% of men showed depression and 16.52% of women and 10% of men had mild symptoms of depression while 6.69% of women and 1.67% of men showed symptoms indicative of low self-esteem and 14.78% of women and 10% of men showed normal self-esteem. Women recorded higher levels of depression ($p \leq 0.01$) and men recorded lower levels of self-esteem ($p \leq 0.01$). Participants with diabetes showed lower levels of self-esteem and higher levels of depression in comparison to people without diabetes ($p \leq 0.05$).
Conclusions: It is suggested in making use of the technologies that have emerged to do telemedicine and to keep in touch with patients. This is a preliminary study; future research should be done on a larger sample.

Keywords: COVID-19, Depression, Self-esteem, Elderly, Diabetes

INTRODUCTION

In December 2019, there was an outbreak of atypical pneumonia in the Chinese city of Wuhan. Subsequently, a new coronavirus was identified and denominated SARS-CoV-2 which caused this disease, named COVID-19. Since then, this virus has spread over the world, being the cause of one of the biggest pandemics of the modern age.

Since then, there has been a feeling of fear and uncertainty on the world's population, and as SARS-CoV-2 has spread, it has caused concern and panic specially on the elderly and people with comorbidities, which can promote the development of mental illness.[1,2] In addition, the coronavirus causes uncertainty and fear of becoming sick, as well as changes in their routines, economic difficulties and social isolation, which are worsened by the unknown length of the lockdown and the future.[3]

Lockdown has been one of the public health strategies used to stop the coronavirus spread, which consists of social distancing and social isolation in the people's homes, but it has been shown that confinement during

pandemics has a psychological impact on the population.[4] Emotionally, social distancing, quarantine and self-isolation can cause mental health disturbances, anxiety and depression.[5] During the Middle East respiratory syndrome (MERS) outbreak in 2015, a survey conducted by the National disaster management institute of South Korea, evidenced that the population showed despair during the first nine days of the outbreak, anxiety during the 15 and 19 days and anger during the 20 and 31 days.[6,7]

The vaccination campaign against COVID-19 in Mexico began on 24 December 2020. On its second stage, from February to May 2021, the vaccines were applied to the elderly of 60 years or older.[8] As of 24 December 2021, 9 different vaccines were approved for use in Mexico: BNT162b2 (Pfizer/BioNTech), mRNA-1273 (Moderna), Ad5-nCoV (CanSino), Sputnik V (Gamaleya), Ad26.COV2.S (Johnson and Johnson), AZD1222 (Oxford/AstraZeneca), Covaxin (Bharat Biotech), BBIBP-CorV (Sinopharm) and CoronaVac (Sinovac).[9]

There are studies that show the difference to how women and men respond to the pandemic, finding that women perceive the COVID-19 infection as a serious health problem and agree with the public health policies of lockdown while pertaining to one of the most vulnerable groups to socioeconomic and emotional impact to SARS-CoV-2 infection.[10,11] In contrast, men have a higher prevalence to show high risk behaviour and to work in high risk jobs, such as public transportation driver, which increase their risk of exposure to SARS-CoV-2 or to seek for medical attention when symptoms worsen, which can potentially explain why COVID-19 has a higher severity and death rate in men.[12]

The elderly can become more anxious, irritable, stressed, hectic and withdrawn while on quarantine, especially if they are self-isolating and have a cognitive impairment or dementia. It has been documented that depression in the elderly, alongside other kinds of psychological stress, injures the immune system and can lead to malnutrition and dehydration which combined can lead to physical disease. In addition, the physical disease in this age group can induce depression, generating a vicious cycle.[13]

Furthermore, the lack of motivation in depressed patients can lead them to disregard their integrity and to not look for medical attention when needed.[11,14] It's important to note that physical health problems aggravated by COVID-19 can raise the risk of suicide in the elderly, because of the disturbance in their mental health.[5]

The main objective of this study was to identify depression and self-esteem disorders in the elderly population of Mexico City (CDMX) and the metropolitan area of the valley of Mexico (ZMVM) in the context of the COVID-19 pandemic during 2020 and 2021, collecting survey data from August 1st, 2021 to 28 February 2022. In this article we analysed the relation that exists between the self-esteem variable and the presence of depression in the elderly due to the COVID-19 pandemic.

METHODS

Research design

This research was non-experimental, observational, cross-sectional, correlational and descriptive.

Study population

The sample was integrated by 175 elders of age 60 and up, of which 115 were female and 60 were male, which lived in the CDMX and ZMVM at the time, by snowball sampling. Out of these, 169 participants had completed their vaccination scheme against COVID-19. In every case, we collected written informed consent forms to submit the surveys, from 1 August 2021 to 28 February 2022.

Instruments

Depression and self-esteem were considered as associated variables. Data was collected by means of a survey that consists of 37 questions done expressly for the study where the presence of depressive symptoms and low self-esteem were identified based on Yesavage geriatric depression scale (GDS-15) and Rosenberg self-esteem scale (RSES), respectively.

To participate in this study a consent was solicited where the scientific purpose of the study and anonymity were explained.

The survey consisted of 5 sections: in the first one, demographic data was collected. The second section included multiple choice questions about emotions derived from the pandemic as well as data about metabolic and psychiatric comorbidities. The third section included questions related to the vaccination campaign for COVID-19 in Mexico. The fourth section consists of the GDS-15, which was the short form of an evaluation tool to look for the presence of depression, especially in the elderly, which purpose was to be applied in a short period considering cognitive and attention problems as well as fatigue that can show up in this age group. It was an instrument that has been widely adapted, translated, and validated for different countries and populations, which includes spanish for Mexican Americans. The fifth section was structured by RSES, which evaluates the emotional perception that one has of oneself by means of 10 items, it was an instrument that had been shown to be valid and trustworthy in clinical contexts, in patients with stablished depression, as well as also being validated to measure self-esteem in the elderly population of CDMX.

Data gathering procedures

Data was obtained by means of a survey distributed and applied online using Google Forms and via telephone calls. The instrument was sent to the professors and students who were participating in the DUPAM: Un modelo de atención multidisciplinaria a personas con diabetes (a model of multidisciplinary care for people with diabetes) internship program of the National autonomous university of Mexico (UNAM) who were previously trained and standardized for its application. It was exercised from 1 August 2021 to 28 February 2022. There initially were 41 research subjects, who helped us get in contact with more of the participants via phone calls.

Statistical analysis

The data obtained was analysed with descriptive statistics, such as the mean, standard deviation, frequency analysis, among others. Categorical data was analysed using Chi squared test with statistical significance of $p \leq 0.05$. Data collected was entered and analysed in Microsoft Excel.

RESULTS

175 people were surveyed of which 115 were female (65.71%) and 60 were male (34.29%), with a mean age of 66.42 years (65.88 for women and 67.45 for men) (Table 1).

Table 1: Demographic characteristics of the sample.

Variables	Female (n=115)		Male (n=60)	
	Absolute frequency	(%)	Absolute frequency	(%)
Age (years)				
60-64	65	56.52	27	45.0
65-69	25	22.61	15	25.0
70-74	12	10.43	9	15.0
75-79	6	5.22	5	8.33
80-84	4	3.48	1	1.67
85-89	2	1.74	3	5.0
Place of residency				
Mexico City (CDMX)	78	67.83	40	66.67
metropolitan area of the valley of Mexico (ZMVM)	37	32.17	20	33.33
Marital status				
Married	63	54.78	45	75.0
Single	18	15.65	3	5.0
Divorced	8	6.96	5	8.33
Widowed	26	22.61	7	11.67
Level of education				
Elementary school	23	20.0	12	20.0
Junior high school	14	12.17	4	6.67
High school	20	17.39	8	13.33
College or university	38	33.05	15	25.0
Postgraduate	20	17.39	19	31.67
None	0	0.0	2	3.33
Occupation before the pandemic				
Work (any)	58	50.43	43	71.67
Housekeeping	49	42.61	4	6.67
Taken care of	4	3.48	8	13.33
Other(s)	4	3.48	5	8.33
Previous diagnosis of a psychiatric disease				
None	92	80.0	55	91.67
Depression	13	11.30	0	0.0
Anxiety	6	5.22	5	8.33
Depression and Anxiety	2	1.74	0	0.0
Other(s)	2	1.74	0	0.0

Table 2: Depression and self-esteem disturbances in the elderly, by sex.

GDS-15*	Asymptomatic (0 to 5 pts.)	Mild symptoms (6 to 9 pts.)	Depression (10 to 15 pts.)	Total
Sex				
Women	91	19	5	115
	79.13%	16.52%	4.35%	100.0%
	52.0%	10.86%	2.86%	65.71%
Men	53	6	1	60
	88.33%	10.0%	1.67%	100.0%
	30.29%	3.43%	0.57%	34.29%
Total	144	25	6	175
	82.29%	14.29%	3.42%	100.0%
	100.0%	100.0%	100.0%	100.0%
(p ≤ 0.01)				
RSES**				
Sex	High self-esteem (30 to 40 pts.)	Moderate self-esteem (26 to 29 pts.)	Low self-esteem (25 pts. or lower)	Total
Women	90	17	8	115
	78.26%	14.78%	6.96%	100.0%
	51.43%	9.71%	4.57%	65.71%
Men	53	6	1	60
	88.33%	10.0%	1.67%	100.0%
	30.29%	3.43%	0.57%	34.29%
Total	143	23	9	175
	81.71%	13.14%	5.14%	100.0%
	100.0%	100.0%	100.0%	100.0%
(p ≤ 0.01)				

* Yesavage geriatric depression scale; **Rosenberg self-esteem scale.

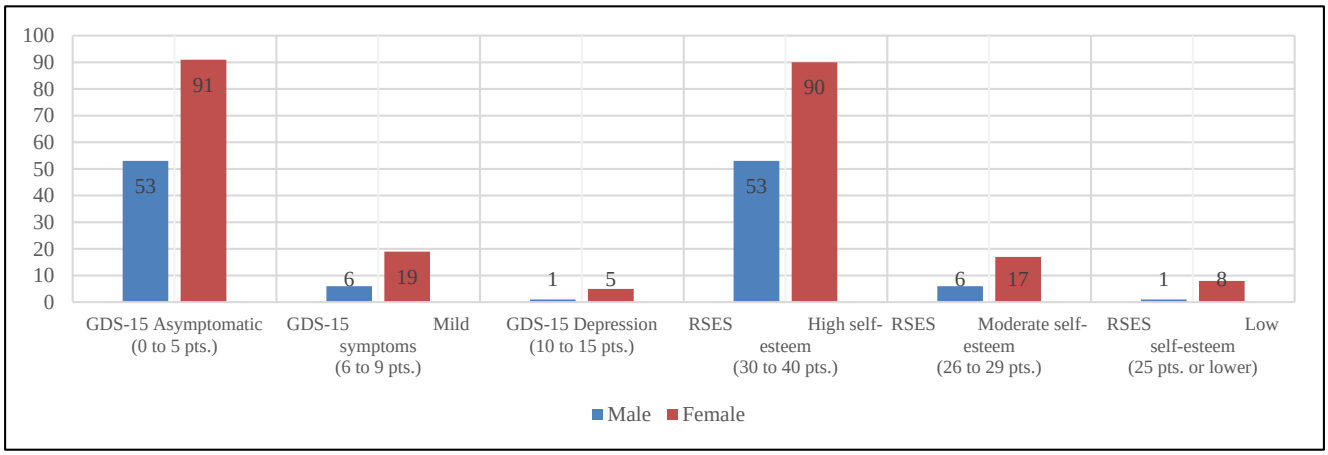

Figure 1: Yesavage (GDS-15) and Rosenberg self-esteem scale (RSES) results in the elderly, by sex.

Of the sample, 169 participants (97.39%) had completed their vaccination scheme against SARS-CoV-2, while the rest had not received a single dose (2.61% of women and 5% of men). Of the vaccinated, 71.01% conveyed a feeling of safety after immunization (72.32% of women and 68.42% of men), 13.61% felt uneasy (14.29% of women and 12.28% of men), while 15.38% did not refer any change (13.39% of women and 19.30% of men).

The emotional responses derived from lockdown and the pandemic as referred by the sample, in order, are anguish in 51.43% (57.39% of women and 40% of men), followed by fear in 14.86% (14.78% of women and 15% of men), anger in 11.43% (10.43% of women and 13.33% of men), sadness in 10.29% (13.91% of women and 3.33% of men) and loneliness in 3.43% (1.74% of women and 6.67% of men); 22.86% of all the participants referred no emotional change at all (18.26% of women and 31.67% of men).

In addition to their emotional disturbances, 46.96% of women and 40% of men stated to feel fear to leave their homes, 21.74% of women and 20% of men went through financial hardships and 17.39% of women and 16.67% of men had their health disrupted, either by developing COVID-19 or the inability to go to their medical check-ups due to lockdown.

Regarding comorbidities, the most frequent was hypertension in 38.86% of the participants (37.39% of women and 41.67% of men), followed by diabetes in 25.14% (25.22% of women and 25.0% of men), obesity in 22.29% (24.35% of women and 18.33% of men), heart diseases in 8.57% (6.09% of women and 13.33% of men), other diseases with immune system suppression in 2.29% (2.61% of women and 1.67% of men). 27.43% referred to have no comorbidities (24.35% of women and 33.33% of men).

The 4.35% of women and 1.67% of men showed depression, mean 3.43%, and 16.52% of women and 10% of men had mild symptoms of depression, mean 14.29%. The mean score we got for the GDS-15 was 3.21 (SD=2.97), 3.44 for women (SD=3.19) and 2.77 for men (SD=2.51). Women recorded higher levels of depression ($p \leq 0.01$) (Figure 1).

Meanwhile 6.96% of women and 1.67% of men, mean 5.14%, showed symptoms indicative of low self-esteem, 14.78% of women and 10% of men showed normal self-esteem, mean 13.14%. The mean score we got for the RSES was 34.98 (SD=5.12), 36.08 for women (SD=4.22) and 34.4 for men (SD=5.48). Men recorded lower levels of self-esteem ($p \leq 0.01$) (Table 2).

Of the studied group, it was found that people with diabetes had lower levels of self-esteem and higher levels of depression in contrast to people without diabetes ($p \leq 0.05$). Furthermore, there were no statistically significant differences between the groups of women and men with diabetes.

DISCUSSION

The main purpose of this research was to identify and analyze depression and self-esteem disorders among the elderly population during the COVID-19 pandemic. The sample consisted mainly of females (65.71%), who lived in the CDMX (67.43%) with an average age of 66.42 (SD=6.41). Women recorded higher levels of depression and men recorded lower levels of self-esteem, both with statistical significance. These figures are consistent with those issued by the WHO, whereby women are more prone to suffer from depression, which likely have increased during the COVID-19 pandemic.[15] Furthermore, the main emotional impact derived from the lockdown and the pandemic was anguish (57.39% of women, 40% of men, mean 51.43%). In addition, 44.57% of the surveyed (46.96% of women and 40% of men) perceived major changes in their social habits, such as fear of leaving their homes.

In a similar study with a sample of 613 people, Pérez-Cano et al found that the main feeling derived from the pandemic was anguish (61.2%), followed by fear (10.4%), sadness (9.5%) and anger (7.7%), with 11.3% reporting indifference. These results coincided to the ones we found.[16]

In 2018, the ENSANUT (National Survey of Health and Nutrition), which was a study conducted nationwide, reports a national prevalence of 10.3% for diabetes (11.4% of women and 9.1% of men) and 18.4% of hypertension (20.9% of women and 15.3% of men).[17] We got higher levels for both diabetes and hypertension, which could partially be explained by the fact that a small number of participants pertain to the DUPAM and they probably referred their acquaintances to participate in this study. The ENSANUT also reported 17.9% of Mexican adults with depressive symptomatology indicative of mild or severe depression, with it being 1.8 times higher on women and a prevalence of 17.3% in urban communities. These were similar results to the performed study.

Before the pandemic, Sánchez-García et al utilized the 30 item GDS to search for depressive symptoms in the elderly population of the CDMX and found a prevalence of 21.7% (24.7% for women and 16.2% for men).[18] These seem to be higher levels to the ones we got, but we must consider they conducted their study on a sample of 7,499 people.

In 2016, using Beck's depression inventory-2 in a community located in the ZMVM found that 63.7% of women had some form of depressive disorder while 63.6% of men referred being asymptomatic.[19] We found a significantly lower proportion of women with depressive symptoms, while we got a higher level of men reported being asymptomatic.

During the first months of the pandemic, America's centers for disease control and prevention (CDC) found that out of 933 participants of 65+ years, 5.8% reported depressive disorder via the four-item patient health questionnaire (PHQ-4), which were significantly lower to the levels in the 25 to 44 years age group (32.5%).[20] This had led to think that the elderly could be less negatively affected regarding their mental health compared to other age groups.[21] These asseverations seemed to be true in the studied population even though this study was conducted more than a year after the pandemic started.

In India, Das et al used the GDS-15 to look for depressive symptoms in a sample of 92 elderly, predominantly male, and found 14 people with a score of 5 or more (15.2%).[22] We had a predominantly female sample and found 32 elderlies with a score of 6 or more (17.71%), which was comparable to this study, even though we almost doubled their sample. Comparatively, in Poland, using the hospital

anxiety and depression scale (HADS-M), 26.25% of the studied sample showed depressive symptoms.[23] This was a higher proportion to the one we found.

In Mexico, women had shown depression rates of up to 6.5%.[24] Many theories have been proposed as to why depression was more common in women, one of which determines a contribution of the gonadal hormones to a hormonal dysregulation, which can predispose women to a higher susceptibility for both anxiety and depression.[25] In Spain, by means of descriptive analysis and compiling linear regression models, González-Sanguino et al found that the female gender was associated to higher depressive symptoms, but that the elderly (60-80 years) had lower depression rates compared to younger people (40-59 years).[21]

Regarding self-esteem, Rivera-Hernández in 2014, using RSES, found a low self-esteem prevalence of 11.46% (6.99% of women and 4.47% of men) in the older population of Mexico with diabetes.[27] Although the research was realized before the pandemic and the fact she divided the results in low and high self-esteem, we found similar low self-esteem levels in women, but if we compare them to the moderate and low self-esteem levels we found, we detected higher levels overall. In a study conducted during the COVID-19 pandemic in a sample of teenage women and young adults of Spain, the mean score of the RSES was 26.86 (SD=6.42) in the 14 to 24 years age group and of 28.61 (SD=6.43) in the 25 to 35 age group.[27] We obtained a comparatively higher mean score although our study was conducted in an older population. As of the writing of this paper, this was one of the first studies to apply RSES in the elderly population during the COVID-19 pandemic.

When working with diabetic patients, it's important to check their metabolic control and to deliberately search and detect complications as well as to take care of their mental health as two sides of the same coin.[13] It had been documented that patients with an adequate glycemic control show a decrease in anxiety and depressive symptoms and that an inadequate control worsens them, there's also evidence that strengthening their self-esteem can help patients to maintain their self-care and diabetes control.[28,29]

Ever since the beginning of the pandemic, the DUPAM program has made use of telehealth communication to bring medical, dental, psychological, thanatological and emotional attention to patients, encouraging safeguarding at home and limiting saturation in health centers. We know that during the pandemic it can be hard for patients to keep in touch with their primary care physicians because COVID-19 has replaced social interactions with digitalised ones in many parts of the world.[30] This was why we suggested making use of the technologies that have emerged to do telemedicine and to keep in touch with patients. This had been proven critical for diabetic patients with COVID-19 to assure constant communication with primary care physicians.[31]

CONCLUSION

This is a preliminary study, we suggest future research should be done on a larger sample, however, this paper matches similar studies performed on a bigger sample. Nonetheless, it should be considered that this study was conducted during the pandemic, while people were suffering the effects of lockdown and confinement.

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