Geriatric vulnerability during COVID-19 pandemic

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ABSTRACT

Background: Geriatric persons are more likely to be frail and have less resilience to psychological stressors.

Objectives: To determine elders vulnerability during COVID-19 pandemic.

Methods: Predefined questionnaires were fulfilled by 500 participants from various governorates in Egypt. The survey consists of four tools including: COVID-19 anxiety scale, COVID-19 Coping inventory (C-19C), The State-Trait Anxiety Inventory, State version (STAIS – Anxiety scale) and Coping Responses inventory (CRI). One way ANOVA test was conducted to compare the effects of age on different aspects of anxiety and coping related to COVID-19 pandemic followed by a Tukey post hoc test to make pair wise comparisons between group means.

Results: The elders group (aged ≥ 60 years) consisted of 24 males and 46 females. In comparison to younger age groups, older females had the highest scores in the COVID-19 anxiety scale (M= 61.565, p-value < 0.001) and the lowest scores in different subscales of both coping scales. This was shown in the coping responses inventory (M= 99.369, p <0.01) with seven out of its subscales and COVID-19 coping Inventory with three of its subscales. While, older males had the lowest scores in coping strategies inventory (M= 103.75, p-value <0.05) with all of its subscales except for the emotional discharge subscale and in the COVID-19 coping Inventory (M= 8.10870, p-value .005) with 2 of its subscales. However, they didn't have statistically significant increase in COVID-19 anxiety pandemic.

Conclusion: COVID-19 pandemic has a major psychological impact on the society with the greatest burden among elders females.

Keywords: COVID-19, Anxiety, Coping, Elders, Psychological Impact.

Introduction

Because of its rapid and high spread throughout the world, the World Health Organization (WHO) declared SARS-CoV-2 as a global pandemic on March 11, 2020. Over 132 million cases have been infected, with over 2 million deaths through out the world till January 2020.¹
In Egypt, COVID-19 confirmed infections reached 207 thousands with over 12 thousand COVID-19 related deaths. The majority of these deaths were older adults aged 60 or more, representing 60% of total deaths, despite of comprising 6.7% of the total population and 20% of total COVID-19 infection. Similarly, 80% of COVID-19 related deaths occurred in elders population in the U.S. There is a continuous increase in the total number of older persons allover Egypt, according to the Central Agency for Public Mobilization and Statistics (CAPMAS), there is a gradual increase in elders population reaching 6.5 million people until January 2019 which makes them at the top priorities during the pandemic.

The Centers for Disease Control and Prevention (CDC) supported elders vulnerability to COVID-19 as 8 out of 10 deaths in the U.S. occurred in those ≥ 65 old because of poor health outcome and higher rates of hospitalization than younger population. Additionally, Psychiatric or neurologic diseases are common among older adults, affecting more than 20% of those ≥ 65 old all over the world with high prevalence of dementia, depression and anxiety. Loneliness due to social distancing and isolation increases the vulnerability for those who already have psychiatric disorders and elders persons are at the highest risk. Older age, depression, and dementia are predisposing factors for suicide. Social disconnection could induce a more pronounced negative spiral of worsening anxiety and/or depression among elders. Special attention is needed for these patients as stressors related to the viral infection and isolation are major triggers of worsening age-associated conditions. These data necessitate urgent therapeutic interventions for these vulnerable groups of patients. Accordingly, the study aims to determine geriatric vulnerability during COVID-19 pandemic.

Material And Methods

Patients and methods

This research was conducted on total sample of 500 Egyptian participants from various governorates. The most responsive of which were (Cairo, Gharbia & Giza). Age ranged from18 years to 86 years in which elders more than 60 years represented 14% of the sample using an online survey in a convenience sample. We used Google forms in addition to an offline survey for those who had no access to the online survey.

Ethics approval and consent to participate

Ethical approval for the study was granted by the Tanta University Ethical Committee, with approval Code 34394. Informed written consent was obtained from each participant to take part in the study.
Tools

We applied four tools on all the participants. Two of them were used to assess coping; coping response inventory and the other one was "COVID-19 coping (C-19C)". While the third and fourth questionnaires were used to assess anxiety: "COVID-19 life events-Anxiety Inventory (C-19LAI)" and "The State-Trait Anxiety Inventory, State version (STAI S – Anxiety scale)". The coping response inventory (CRI) consists of eight subscales (logical analysis, positive reappraisal, seek guidance and support, take problem-solving action, cognitive avoidance, acceptance/resignation, seek alternative rewards, and emotional discharge). On the other hand, COVID-19 coping is a 50 items questionnaire which measures specific coping responses with COVID-19. It consists of four subscales (activities, behavioral phenomena, direct dealing with the problem, and positive reappraisal) 11.

Anxiety was assessed using (STAI S – Anxiety scale), we used the Arabic state trait anxiety inventory 12. It is formed of 20 items which reflect feelings of apprehension, tension, nervousness, and worry. In addition to this, the last questionnaire was used to assess the COVID-19 anxiety in particular using "COVID-19 life events-Anxiety Inventory" 13. It included 20 anxiety-related statements using a four-point rating scale ranging from “not at all” to “fairly often” regardless whether the problem or life event occurred.

Procedure and Data analysis

One way ANOVA analysis was conducted to compare the effects of age on different aspects of anxiety and coping related to COVID-19 pandemic. Then a Tukey post hoc test was conducted to make pairwise comparisons between group means. T test analysis of all variables for male and female age groups was used to compare the means of the two groups. All statistical analyses were performed with the SPSS, IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.

Results

Our sample included 500 individuals completed the questionnaire online, 182 were males and 318 were females. 260 participants (52%) were less than 40 years, 170 (34%) were 40-59 years and 70 participants (14%) were 60 and above. The elders group consisted of 24 males and 46 females. Our results showed the vulnerability of elders in different aspects related to anxiety and coping during COVID-19 pandemic. It showed significant statistical difference between different female age groups in COVID-19 anxiety scale in which female above 60 years got the highest scores denoting highest
levels of anxiety with significant statistical difference among other age groups (M=61.565, p-value< 0.001) as shown in Table 1 and Table 2.

Table 1: Differences between age groups & Gender in variables of COVID-19 Life Events (C-19L), COVID-19 Anxiety (C-19A) and COVID-19 Coping inventory (C-19C) with its subscales.

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<th>Variables</th>
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<th>Male</th>
<th>SD</th>
<th>F</th>
<th>Female</th>
<th>Male</th>
<th>SD</th>
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<td>7.8500</td>
<td>3.55464</td>
<td>15.657**</td>
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<td>3.92188</td>
<td>78</td>
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<tr>
<td></td>
<td>more than 60</td>
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<td>80</td>
<td>49.1625</td>
<td>14.8447</td>
<td>24.094**</td>
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** Significant at 0.01 Level  * Significant sat 0.05 Level
Moreover, coping was affected in the elder group in both males and females with different aspects. As for females, results in this study showed that females above 60 years got the lowest scores in different subscales of both coping scales with significant statistical difference between the other female age groups. This was shown in the coping responses inventory (M=99.369, p <0.01) and seven out of its 8 subscales which are logical analysis (M=14.804, p <0.05), seeking support and information (M=13.282, p <0.01), problem solving (M=12.869, p <0.05), cognitive avoidance (M=13.804, p <0.01), acceptance (M=44.413, p <0.001), seeking alternative reward (M=11.260, p <0.05) and emotional discharge (M=10.913, p <0.05).

Table 2: Bonferroni Multiple Comparisons between age groups in female

<table>
<thead>
<tr>
<th>Dependent</th>
<th>(I) Age</th>
<th>(J) Age</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
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<td>9.0487-25.6010</td>
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<td>.67023</td>
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* The mean difference is significant at the 0.05 level.
Also, this was shown in COVID-19 coping inventory with three of its subscales which are activities related with COVID-19, direct dealing related with COVID-19 and positive reappraisal as shown in Table 3 and Table 2.

**Table 3: Differences between age groups & Gender in variables of S-Anxiety and Coping Responses inventory (CRI) with its subscales.**

<table>
<thead>
<tr>
<th>Variables</th>
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**Significant at 0.01 Level * Significant at 0.05 Level**

In the male elders group, they also showed poor coping in both coping scales. Males more than 60 years got the lowest scores in coping strategies inventory (M=103.75, p value<0.05) and all of its subscales except for the emotional discharge with significant statistical difference between different age groups as shown in Table 4. This was also shown in the COVID-19 coping inventory with 2 of its subscales: positive reappraisal (M=46.625, p value, 0.05) and direct dealing related with COVID-
19 (M= 23.125, p value<0.05). However, they didn’t show increase in COVID-19 anxiety when compared to other age groups.

**Table 4:** Bonferroni Multiple Comparisons between age groups in male

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<th>Dependent Variable</th>
<th>(I) Age</th>
<th>(J) Age</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
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<th>Upper Bound</th>
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*The mean difference is significant at the 0.05 level.*
Discussion

The need for implementing specialized mental health service for elderly in Egypt is increasing dramatically. This requires precise vision for coping and mental disorders in this important sector especially during health crisis. COVID-19 pandemic has represented major crisis in Egypt and the whole world and has shown the highest health impact on the elders population. That’s why the identification of frail and vulnerable older persons represents a public health priority among elders population, due to various reasons such as low immunity, pre-existing co-morbidities are certainly predisposed to exhibit a high mortality rate. The heightened perception of morbidity and mortality risks in addition to social suppression during COVID-19 pandemic has increased the risk of mental and physical consequences. This has made older population more vulnerable to depression and anxiety.

In Egypt, Vulnerability of elders Even before the appearance of COVID-19 specially females was revealed in a study done in 2016 in Mansoura. This study showed that 44% of its elders sample showed depressive symptoms. The regulations of lockdown presented a perfect violent storm for mental distress for older people which developed high challenge for communities and governments. Despite this fact, there are very limited studies that discussed vulnerability of elders in Egypt during the pandemic.

Our results showed that females in the elders age group showed significant higher anxiety related to COVID-19 with poor coping skills than other age groups. This was consistent with a review article which included 20,069 participants above 60 years from Asia, Europe, and America. It reported high anxiety prevalence ranging from 8.3%, 18.7% in the different studies included in the review identifying being a female as an important risk factor. Also, it was consistent with another study done in the first COVID-19 wave in Netherlands which showed that the worry of getting infected with COVID-19 (p value = 0.03) was stronger in women ≥ 69 years when compared to other groups. However, it wasn’t consistent with another study which showed that social vulnerability and the potential negative mental effects were higher in young adults compared to middle aged and older adults, and in males than females.

As for coping, our results showed significant decrease in coping skills in both males and females in the elders group than other age groups in both coping response inventory with many of its subscales such as, logical analysis and cognitive avoidance in addition to COVID-19 coping inventory. This reflected diminished use of adaptive coping strategies such as problem solving, seeking support and information, acceptance and logical analysis leading to difficulty in developing resilience.
A cross-sectional study done on 141 elders participants in U.S.A during the outbreak reported that higher resilience showed significant relation with more frequent use of acceptance, humor, and other adaptive coping strategies. Also, another study done in India on 11 elders couples showed a resilience to COVID-19 phenomenon by using different forms of learning and relearning, rejuvenating spouse relationship and maintaining connections with family and friends. However, the early identification of vulnerable populations in the COVID-19 pandemic would help governments to allocate resources and put appropriate and adequate strategies to contain consequences of this serious outbreak.

Conclusions

To determine old age vulnerability in different aspects related to anxiety and coping during COVID-19 pandemic. Comparisons between age groups and between males and females within the elders group has been conducted.

The degree of different aspects of anxiety and coping of the elders population in Egypt showed vulnerability in comparison of other age groups. It was consistent with other findings in Egypt before COVID-19 pandemic showed vulnerability in elders especially females.

Old age females showed higher anxiety related to COVID-19 with poor coping skills than other age groups. These findings were similar to findings from other regions from Asia, Europe, and America, suggesting there is a certain need to establish as a community and elders healthcare professionals therapeutic projects for anxiety and psychoeducation of Coping Responses with the most vulnerable group, elders and especially females.

It is possible that the lack of clinical protocols in practice and easy access to mental health services for the elders through government hospitals as well as private clinics can contribute with the practice of the elders population’s regarding psychotherapy. These therapeutic projects is necessary, since COVID-19 pandemic has been the highest health impact on Elders Egyptian Population.

STATEMENTS AND DECLARATIONS

**Funding** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Data availability** The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.
Conflict of interest The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical consideration Ethical approval for the study was granted by Tanta University Ethical Committee, approval Code 34394. This research has been performed in accordance with declaration of Helsinki,

Consent to participate Informed written consent for taking part in the study was obtained from each participant. The authors would like to thank the participants who took part in this study.

References


