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## Psychological distress among older adults during COVID-19 pandemic: Prevalence and associated factors

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### Introduction

Coronavirus disease (COVID-19), a highly infectious disease that emerged in Wuhan city, China in December 2019,<sup>1</sup> has become a global public health emergency.<sup>2</sup> COVID-19 was confirmed to have reached Egypt on February 14, 2020.<sup>3</sup> According to a statement from the Ministry of Health and Population in Egypt, the total number of confirmed cases was 104,000, including 6029 deaths and 97,592 recovered patients as of October 10, 2020.<sup>4</sup> While all age groups are at risk of contracting COVID-19, older adults are at significant risk of developing serious illnesses due to physiological changes associated with aging and established underlying health conditions and comorbidities.<sup>5</sup> In Egypt, the death rate among older adults aged >60 years due to COVID-19 was 60%, while the infection rate was 7% among those aged >70 years.<sup>4</sup>

Furthermore, international and local governments and health authorities have informed older adults that they are at a higher risk of more serious and possibly fatal illnesses associated with COVID-19. Hence, the global recommendation for the older populations not only encompasses practices of hygiene and infection control standards but also limits social contact through social distancing and staying at home.<sup>5,6</sup> Consequently, the COVID-19 pandemic and quarantine have been reported to have a strong influence on the daily life of the general population, especially older adults. In addition, uncertainty about the biology of COVID-19 and its transmission,<sup>7</sup> absence of effective treatment and global vaccine of COVID-19,<sup>8</sup> globalization, and increasing use of media for transmitting and sharing information and news about the causative virus have significantly increased psychological distress among the general population.<sup>9–11</sup> Simultaneously, as the pandemic progresses, the general population is increasingly experiencing different degrees of psychological distress, such as anxiety, depression, sleep disorders, inattention, nervousness, and disease phobia.<sup>12,13</sup>

Previous studies have indicated that certain psychological disorders also arise during similar epidemics<sup>14</sup> or other traumatic stress events, such as natural disasters<sup>15,16</sup> and illness<sup>17</sup> and may last for a long time. The American Psychiatric Association (APA), 2020

reported that approximately 48% of Americans were anxious about the possibility of getting COVID-19, and nearly four in 10 (40%) Americans were anxious about becoming seriously ill or dying from COVID-19, but more Americans (62%) were anxious about the possibility of family and loved ones getting COVID-19.<sup>18</sup> Another recent study from Denmark stated that psychological well-being is negatively affected by the COVID-19 pandemic.<sup>19</sup> Furthermore, a study in China including 1210 respondents revealed that 53.8% of respondents rated the psychological impact of the outbreak as moderate or severe, 16.5% of respondents reported moderate-to-severe depressive symptoms, 28.8% respondents reported moderate-to-severe anxiety symptoms, and 8.1% respondents reported moderate-to-severe stress levels.<sup>20</sup>

Peritraumatic distress is a negative psychological impact of the COVID-19 pandemic. Peritraumatic distress is emotional and physiological distress experienced during and/or immediately after a traumatic event.<sup>21</sup> During the COVID-19 pandemic, most of the research was centered on understanding and preventing transmission, exploring treatment opportunities, and concerns with global governance. However, the psychological effect of this pandemic among older adults was also a serious concern. Nevertheless, many studies have indicated that peritraumatic distress is associated with sex, age, educational level, marital status, occupation, labor and employment conditions, place of residence, health status, media use, and exercise hours.<sup>22,23</sup> However, no study has determined the prevalence of psychological distress among older adults during the COVID-19 pandemic and its associated factors in Egypt.

Studying the prevalence of psychological distress and its associated factors would help gerontological nurses develop comprehensive interventions to manage such psychological distress through consultation, implementing relevant mental health interventions, and educational programs that enable older adults to cope with distressing symptoms. Therefore, this study aimed to determine the prevalence of psychological distress and its associated factors among older adults during the COVID-19 pandemic in Egypt. This study was based on the hypothesis that age, sex, marital status, income level, presence of comorbidities, social support, self-rated health status, type of media use, media content, and duration of media use would be significantly associated with peritraumatic distress among older adults during COVID-19 pandemic.

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## Research questions

This research proposed to address the following research questions: 1) What is the prevalence of COVID-19 associated peritraumatic distress among older adults during the COVID-19 pandemic? 2) Do the levels of peritraumatic distress significantly differ according to sociodemographic characteristics of older adults, self-rated health status, presence of comorbidities, social support, and media use? 3) What are the predictors of COVID -19 associated peritraumatic distress among the older adults during the COVID-19 pandemic?

## Material and methods

### Study design

This was a descriptive cross-sectional study using a single-time survey.

### Setting and participants

According to The Information Centre of Local Health Directorate in Dakahlia Governorate, Mansoura district is the largest district in Dakahlia and includes one city (Mansoura city) and 38 villages. A list of all health centers/units in both urban and rural areas of Mansoura district was obtained from the local health directorate. From urban areas, three of 11 health centers were selected by systematic random sampling (every third)—Jadiluh, Torell, and Sandoob. In rural areas, six of 38 rural health units/family health units were chosen by systematic random sampling (every fifth)—Slammon, Awash El-Hagar, Shoha, Tanah, Shawah, and Badawi.

The target population was older adults aged  $\geq 60$  years of both sexes who lived in the above-mentioned settings. Older adults aged  $\geq 60$  years who were able to read and write and consented to participate in the study were included. Older adults who were diagnosed with any psychiatric or mental disorders were excluded.

The sample size was calculated online using Open EPI (<https://www.openepi.com/>). A pilot study of 40 older adults revealed that 35 (87.5%) of them had some level of peritraumatic distress (mild to severe). With an alpha error of 0.05, the precision of 5%, and the design effect due to the systematic sampling method, the sample size was calculated as 254 older adults. The sample size was distributed proportionally between selected centers/units. In each health center/unit, a list of older adults who were eligible to participate and their contacts were prepared from family files. Subsequently, older adults were selected from a list using systematic random sampling. Three hundred older adults were invited to participate in the survey. However, the response rate was 89.3% (268 of 300 older adults). The remaining 10.7% (32 of 300 older adults) were not interested in the study.

### Study tools

An electronic self-administered questionnaire was developed by researchers and was composed of five tools for data collection. *Socio-demographic data and health-related data* such as age, sex, marital status, education level, income, living condition, place of residence, current work, and presence of comorbidities. *Self-rated health status* is a widely used measure of general health. It was assessed by one question: “How would you rate your health?” Responses were rated from 1 (poor) to 5 (excellent).<sup>24</sup> For analysis, fair and poor responses were merged and categorized as poor self-rated health, and the other responses were merged and categorized as good self-rated health. *Media use by older adults during the COVID-19 pandemic* was established based on the results of a previous study<sup>25,26</sup> and included: *type of media use* (traditional media such as television, radio, newspapers, and new media as online website news and social media), *duration of*

*media use* (total number of hours following up media per day), *media content* (frequency of media content viewed on a five-point scale from 0 = never to 4 = very often). For analysis, media content was classified into positive and negative news. The positive news was assessed using the question, “how often do you view content about recovered cases, method of infection control and protection from COVID-19, discovering new vaccines and treatment for COVID-19, and general programs other than those related to COVID-19.” Negative news was assessed using the question “how often do you view content about the intensity of the pandemic nationally and internationally and the number of new and death cases?”

*Oslo social support scale (OSSS-3)* is a brief and economic instrument used to evaluate the level of social support. The OSSS-3 comprises three items that evaluate the number of close confidants, the sense of concern from other people, and the relationship with neighbors with a focus on the availability of practical help. It was developed by Kocalevent in 2018.<sup>27</sup> The sum score ranges from 3 to 14, with low values indicating poor levels and high values indicating strong levels of social support. The OSSS-3 sum score can be operationalized into three broad categories of social support: 3–8, poor social support; 9–11, moderate social support; and 12–14, strong social support. The reliability of the Arabic version of the OSSS-3 was measured during a pilot study using the test-retest method. Reliability was evaluated using Cronbach’s alpha coefficient. It indicated that the OSSS-3 had a reliability of 0.95.

*COVID-19 peritraumatic distress index (CPDI)* is an index of 24 questions related to the occurrence of COVID-19 associated anxiety, depression, cognitive change, particular phobias, physical symptoms, avoidance and compulsive behavior, and loss of social functioning during the past week. It was originally developed by Qiu in 2020<sup>22</sup> in China. On a five-point Likert scale, items were rated from 0 (not at all) to 4 (extremely). The total score ranges from 0 to 96. The codes of the answers to the 24 questions were used to construct the CPDI. Therefore, the scores of the respondents ranged from 0 to 96. A base count of 4 was applied to all respondents to allow a maximum of the normal 100 for a CPDI. The addition of the base, which has also been carried out in recent studies on the effects of COVID-19 on distress in Saudi Arabia and China, makes it possible to equate the current findings with previous studies that used 100 by growing the base without altering the impact gradient. To obtain the levels of distress, the CPDI was then categorized, with scores of 0–28 indicating no distress (normal levels), a score of 29–52 indicating mild-to-moderate distress, and a score of 53–100 indicating severe distress. The reliability of the Arabic version of the CPDI was tested during the pilot study. The test-retest correlation coefficients of the different items ranged from 0.76 to 0.95, with Cronbach’s alpha of 0.90 and an average inter-class correlation of 0.90.

### Procedures

The CPDI and OSSS-3 were translated into Arabic and back-translated to English by two bilingual translators. To ensure that the original English versions preserve the essence of the translation and verify the questionnaire, the study tools were tested for content validity by five panels of experts in related fields of the study, and the required modifications were performed accordingly. A pilot study was conducted on 40 older adults selected from Belqas district and included three health care centers (Asfoor, Demlash, and Alshirka) to determine the clarity, applicability, and ambiguity of the tools and test the reliability of the study tools and discard all unnecessary, difficult, or ambiguous questions. These older adults were not included in the study. The data obtained from the panels of experts and the pilot study were analyzed manually. Some items were added, and other items were rephrased for clarity and a better understanding (Tool II and Tool III). As a result, crucial modifications were made before the final versions of the tools were ready for use.

Because the Egyptian government committed to implementing the lockdown and minimizing face-to-face or physical interaction, an electronic survey was conducted through the online resources available. Official permission was obtained from the authorities in charge at each health center/unit. The nurse in charge of each healthcare center/unit provided the researchers with contacts of the older adults selected randomly from each unit. A written consent form was sent to all participants in the first part of the online survey before the questionnaire was completed, and once the user clicked on the link, they were given clear information about the nature and aim of the survey on the first page. They were informed that the collected data would be used only for research purposes and that their participation was voluntary and that they could withdraw from the study at any time without giving a reason. Data were collected anonymously without asking the participants' names, and all data and opinions provided were confidential. To ensure that all the older adults filled the data, those who had missed it were contacted once per week as a reminder. Data collection was performed for 3 weeks, from April 21 to May 15, 2020.

#### Ethical consideration

The study was approved by the Research Ethics Committee of the Faculty of Nursing, Mansoura University.

#### Data analysis

Data entry and analysis were performed using the IBM SPSS (Statistical Package for Social Sciences) software package version 20.0 (IBM Corp., Armonk, NY, USA). Qualitative variables are presented as numbers and percentages. Quantitative variables are presented as ranges (minimum and maximum), means, and standard deviations. Pearson's chi-square test and Fisher's exact test were used to comparing qualitative variables between groups, as appropriate. The student's *t*-test was used to compare normally distributed quantitative variables between groups. Crude odds ratios (CORs) and their 95% confidence intervals (CIs) were calculated. Significant factors in the bivariate association were entered into a multivariate regression model to determine independent predictors of peritraumatic distress. All significant factors were included in multivariate analysis. *P* values were considered statistically significant at  $\leq 0.05$ .

#### Results

Among the 268 older adults, 182 (67.9%) older adults were 60–70 years old, while 86 (32.1%) older adults were  $\geq 70$  years old, with a mean age of  $67.67 \pm 6.30$  years. There were 144 (53.7%) men, 124 (46.3%) women, 148 (55.2%) married older adults, 137 (51.1%) older adults living in urban areas, 131 (48.9%) older adults living in rural areas, 136 (50.7%) literate older adults, 167 (62.3%) older adults living alone, 149 (55.6%) older adults who were currently not working, and 164 (61.2%) older adults who did not have enough income. Of the 268 older adults, 214 (79.9%) had comorbidities, 135 (50.4%) older adults rated their health status as good, 170 (63.4%) older adults had poor social support, and 174 (74.3%) older adults used traditional types of media (Table 1). The prevalence of mild-to-moderate and severe peritraumatic distress among older adults during the COVID-19 pandemic was 60.1% and 31%, respectively (Table 2). Moreover, the mean score  $\pm$  SD of the CPDI was  $45.79 \pm 14.56$ .

The prevalence of peritraumatic distress was significantly higher among older adults aged  $\geq 70$  years (COR = 1.463), those who resided in rural areas (COR = 0.398), those who lived alone (COR = 3.741), those who had comorbidities (COR = 0.377), and those who had poor self-rated health status (COR = 3.256) than that among other older adults (Table 3). The older adults who listened to positive news had

**Table 1**  
Sociodemographic characteristics of the study participants (N = 268).

Variables	Participants, n (%)	
Age (years)		
60–70	182	67.9
$\geq 70$	86	32.1
Mean $\pm$ SD	$67.67 \pm 6.30$	
Sex		
Male	144	53.7
Female	124	46.3
Marital status		
Not married <sup>a</sup>	120	44.8
Married	148	55.2
Place of residence		
Urban	137	51.1
Rural	131	48.9
Education level		
Read and write	136	50.7
Below secondary	88	32.8
Secondary and above	44	16.4
Living arrangement		
Alone	167	62.3
With family and sons	101	37.7
Currently working		
Yes	119	44.4
No	149	55.6
Income		
Enough	104	38.8
Not enough	164	61.2
Comorbidities		
No	54	20.1
Yes <sup>b</sup>	214	79.9
Social support		
Poor	170	63.4
Moderate	85	31.7
Strong	13	4.9
Self-rated health status		
Poor	133	49.6
Good	135	50.4
Type of media use		
Traditional	199	74.3
Traditional & new	69	25.7
Media content		
Positive news	$5.94 \pm 1.75$	
Negative news	$5.93 \pm 2.10$	
Duration of media use (per hours)		
<4	177	66.0
$\geq 4$	91	34.0
Mean $\pm$ SD	$3.24 \pm 1.20$	

<sup>a</sup> Single (*n* = 6), widow (*n* = 96), and divorced (*n* = 119)

<sup>b</sup> Diabetes (*n* = 58), hypertension (*n* = 89), cardiac disease (*n* = 66), gastrointestinal disease (20), liver disease (*n* = 18), joint disease (*n* = 26), urological disease (*n* = 23), neurological disease (*n* = 19), and respiratory disease (*n* = 40).SD: standard deviation

**Table 2**  
Overall levels and scores of COVID-19 peritraumatic distress among older adults.

COVID-19 peritraumatic distress	N (%)	Score
Levels		
No distress (0–28)	24 (9.0)	
Mild to moderate (29–52)	161 (60.1)	
Severe distress (53–100)	83 (31.0)	
Total score		
Mean (SD)		45.79 (14.56)
Median (minimum–maximum)		46.0 (9.0–87.0)
Percent score		
Mean (SD)		47.70 (15.16)
Median (minimum–maximum)		47.92 (9.38–90.63)

SD: standard deviation; COVID-19: coronavirus disease

**Table 3**  
Prevalence of peritraumatic distress and its associated factors.

	Peritraumatic Distress				Test of significance	P	OR (95% CI)	P
	No distress (n = 24)		Distress (n = 244)					
	No.	%	No.	%				
Age (years)								
60–70*	18	75.0	164	67.2	$\chi^2 = 0.608$	0.436		
≥70	6	25.0	80	32.8			1.463 (0.559–3.829)	0.436
Mean ± SD	65.21 ± 5.14		67.91 ± 6.36		t = 2.018*	0.045*	1.096(1.001–1.201)	0.049*
Sex								
Male*	14	58.3	130	53.3	$\chi^2 = 0.225$	0.636		
Female	10	41.7	114	46.7			1.228(0.525–2.871)	0.636
Marital status								
Not married	7	29.2	113	46.3	$\chi^2 = 2.598$	0.107	2.095(0.839–5.233)	0.113
Married	17	70.8	131	53.7				
Place of residence								
Urban*	17	70.8	120	49.2	$\chi^2 = 4.100^*$	0.043*		
Rural	7	29.2	124	50.8			0.398(0.160–0.995)	0.049*
Education level								
Read and write	9	37.5	127	52.0	$\chi^2 = 3.523$	0.172	2.670(0.931–7.655)	0.068
Below secondary	8	33.3	80	32.8			1.892(0.638–5.608)	0.250
Secondary and above*	7	29.2	37	15.2				
Living arrangement								
Alone	8	33.3	159	65.2	$\chi^2 = 9.427^*$	0.002*	3.741(1.538–9.098)	0.004*
With family and sons*	16	66.7	85	34.8				
Currently working								
Yes	12	50.0	107	43.9	$\chi^2 = 0.335$	0.563		
No	12	50.0	137	56.1			1.280(0.553–2.963)	0.564
Income								
Enough*	8	33.3	96	39.3	$\chi^2 = 0.332$	0.564		
Not enough	16	66.7	148	60.7			1.297(0.535–3.149)	0.565
Comorbidities								
No*	9	37.5	45	18.4	$\chi^2 = 4.932^*$	FE P = 0.034*		
Yes	15	62.5	199	81.6			0.377(0.155–0.915)	0.031*
Social support								
Poor	16	66.7	154	63.1	$\chi^2 = 4.208$	0.122	2.887 (0.72–11.583)	0.135
Moderate	5	20.8	80	32.8			4.80 (0.994–23.190)	0.051
Strong*	3	12.5	10	4.1				
Self-rated health status								
Poor	6	25.0	127	52.0	$\chi^2 = 6.395^*$	0.011*	3.256 (1.250–8.483)	0.016*
Good*	18	75.0	117	48.0				
Type of media use								
Traditional	17	70.8	182	74.6	$\chi^2 = 0.161$	0.688	1.209(0.479–3.052)	0.688
Traditional and new*	7	29.2	62	25.4				
Media content								
Positive news	6.67 ± 1.61		5.86 ± 1.75		t = 2.154*	0.032*	0.777(0.616–0.981)	0.034*
Negative news	5.67 ± 1.88		5.95 ± 2.12		t = 0.641	0.522	1.072(0.867–1.325)	0.521
Duration of media use (per hours)								
<4	20	83.3	157	64.3	$\chi^2 = 3.513$	0.061		
≥4	4	16.7	87	35.7			0.361 (0.120–1.090)	0.071
Mean ± SD	2.88 ± 0.68		3.28 ± 1.24		t = 2.526*	0.016*	1.383 (0.921–2.078)	0.118

$\chi^2$ : Chi-square test, FE: Fisher's exact test, t: Student's t-test; COR: crude odds ratio; CI: confidence interval

\*: reference category; P: P value for association between different categories; \*: Statistically significant at  $P \leq 0.05$

lower levels of peritraumatic distress than those who listened to negative news (COR = 0.777). Multivariate linear regression analysis revealed that age (B = 0.476), sex (B = 6.704), living arrangement (B=2.150), comorbidities (B= 3.397), and self-rated health status (B=3.031) were independent predictors of peritraumatic distress among older adults during the COVID-19 pandemic. Moreover, age and sex are highly significant predictors. (Table 4).

## Discussion

Based on previous studies, there is a clear correlation between a pandemic outbreak and the population's psychological status in the history of emerging pandemics.<sup>14,16</sup> The current study revealed that 60.1% and 31.0% of older adults reported mild-to-moderate and severe peritraumatic distress associated with COVID- 19, respectively. Previous studies conducted in China, Iran, and India revealed

**Table 4**

Multivariate linear regression analysis of independent predictors of peritraumatic distress.

	#Multivariate	
	P	B (95% CI)
Age (years)	0.001*	0.476 (0.192–0.759)
Sex (Female)	<0.001*	6.704 (3.109–10.300)
Place of residence	0.099	–3.028 (–6.630–0.573)
Living arrangement	0.261	2.150 (–1.612–5.911)
Comorbidities	0.132	3.397 (–1.036–7.830)
Self-rated health status	0.136	3.031 (–7.022–0.961)
Media content	0.995	0.003 (–1.042–1.048)

B: unstandardized coefficient; CI: confidence interval

\* Statistically significant at  $P \leq 0.05$

#: All variables with  $P < 0.05$ , were included in the multivariate

that 35%, 61.1%, and 33.2% of respondents experienced psychological distress associated with COVID-19, respectively.<sup>22,28,29</sup> Another survey conducted showed that 37.1% of older adults experienced depression and anxiety associated with COVID-19.<sup>30</sup> Similarly, another research suggested that the general population in the mainland, China reported higher levels of psychological distress in the early stages of the COVID-19 epidemic than those in the non-epidemic period.<sup>31</sup> Furthermore, a study in Italy found that more than one-third of the older adults reported high post-traumatic stress disorder symptoms due to the COVID-19 outbreak.<sup>32</sup> In the current study, the mean CPDI score was 45.79, which is higher than that reported in studies in China and Iran (23.65 and 34.54, respectively).<sup>22,28</sup> The discrepancy in these findings might be due to timing changes in the interpretation of the results of the studies.

Psychological distress experienced during and/or immediately after a traumatic event is individualized and is influenced by many factors, including sociodemographic characteristics, health status, social support, lifestyle, and media use.<sup>22,28,29</sup> The current study revealed that older adults aged  $\geq 70$  years had a higher level of peritraumatic distress than those aged 60–70 years. Moreover, age, as a sociodemographic factor, is a significant predictor of peritraumatic distress among older adults during the COVID-19 pandemic. These findings are comparable to those of a survey conducted in China indicating that age as a major factor in distress related to COVID-19.<sup>30</sup> A similar research found that adults <65 years had the lowest psychological distress among all age groups.<sup>33</sup> The researchers commented that this could be because people in this age group maintained the best lifestyle and behaviors compared to those in higher age groups. It is not surprising that older adults are more likely to be psychologically affected since the highest mortality occurs among older adults during epidemics.<sup>30</sup> It may also be related to physiological changes and psychological characteristics of older adults.<sup>34</sup> In Saudi Arabia, a research found that older adults were less stressed than young people.<sup>35</sup> They rationalized that the older adults could handle their stress because they are more aware of the pandemic compared to young people and that younger people experience the highest mental distress due to COVID-19 because of their high exposure to social media.<sup>36</sup> These discrepancies might be due to cultural, educational, and economic differences among the research settings under question. In this study, sex was also a risk factor and predictor of peritraumatic distress, and women were more likely to experience peritraumatic distress than men. This result is consistent with those reported by recent studies in China,<sup>20,22</sup> Italy,<sup>32</sup> Saudi Arabia,<sup>37</sup> and India.<sup>38</sup> These studies attributed their findings to biological factors and sex differences in hormonal reactions to stress.<sup>39</sup> In the current study, results may reflect, to some degree based on cultural norms in Arab countries, that women are most likely to express and communicate their emotions, such as fear and anxiety. Men are usually less emotional, and they hide their emotions as it is considered a part of their manhood.<sup>40</sup> Women are also more susceptible to stress hormones and threats, less likely to use adaptive coping mechanisms, and more likely to provide negative evaluations of emergencies than men.<sup>41,42</sup> It has also been documented that women appear to assume more caregiving tasks.<sup>43</sup> Balancing work and/or household, under very stressful circumstances, can be considered as at-risk group.<sup>44</sup> In this regard, more attention should be paid to the psychosocial health of older adult women.

Regarding educational level, the results revealed that older adults with higher education levels had lower levels of peritraumatic distress. This agrees with the findings reported in Italy which indicated that lower education status directly indicates the increased onset of stress related to the epidemic.<sup>32</sup> This may be attributed to the fact that education is the foundation for successful coping. It allows the person to see difficult life events without overestimating the situation. On the other hand, some studies suggested that people with

higher education levels appeared to be more anxious, perhaps due to a high degree of self-awareness about their well-being.<sup>22,45</sup> These discrepancies are not in agreement with major previous stress studies as it is widely evident that the stress and education level are inversely related.<sup>32</sup> The novel nature of disease and changing views regarding the disease is one of the major factors justifying these contrary results.

In this current study, the prevalence of peritraumatic distress was significantly higher among older adults living in rural areas than in those living in urban areas. Furthermore, place of residence was a significant predictor of peritraumatic distress. In accordance with our results, a study confirmed that the highest level of peritraumatic distress was reported in the central rural region of China (including Hubei, the center of the epidemic), while Shanghai had a low level of distress.<sup>22</sup> This could be due to variations in the availability of local medical facilities, the effectiveness of the regional public health system, and the measures taken to prevent and control the pandemic situation.<sup>46,47</sup> This may also be attributed to the lower education and monthly income levels among older adults living in rural areas than among those living in urban areas in Egypt.<sup>48</sup>

The results of this study showed that older adults with poor social support had a higher level of peritraumatic distress than those with good social support. Likewise, unmarried older adults had a higher risk of distress than married older adults. This agrees with a report, which concluded that a lack of a major social support system was related to psychological distress.<sup>20</sup> This could be explained by the fact that the sense of being with a supportive family and having a social network is an important approach in reducing anxiety and distress. Social support provided by spouses, family members, friends, and neighbors might help decrease stress responses and cope effectively with stressful situations.<sup>49</sup>

In terms of the self-rated health status of the older adults, the results of the present study showed that older adults who rated their health status as poor were at a higher risk of peritraumatic distress than those who rated their health status as good. Additionally, the results of the current study revealed that older adults with comorbidities experienced more peritraumatic distress than those without comorbidities. In addition, self-rated health status and the presence of comorbidities were predictors of peritraumatic distress among older adults. Similar results are reported in other studies that the presence of chronic illness and self-evaluation of poor health are associated with increased psychological distress.<sup>20,50</sup> A possible explanation for this result is that older adults with a history of comorbidities who rated their health status as poor might feel more vulnerable to contracting a new disease.<sup>51</sup>

The current study results revealed that the older adults who were watching negative news about COVID-19, such as that on the intensity of the pandemic nationally and internationally and the number of new and deceased cases, had higher peritraumatic distress than those who were watching positive news, such as that on the number of recovered cases, method of infection control and protection from COVID-19, discovering new vaccines and the treatment for COVID-19, and general programs other than those related to COVID-19. A recent study reported that disaster-related social media use is strongly correlated with poor mental health.<sup>52</sup> Moreover, it is reported that >80% of participants reported that social media exposure was positively associated with anxiety and a combination of depression and anxiety associated with COVID-19.<sup>53</sup> Media is considered a double-edged sword. Studies have shown that the provision of extensive negative news, including elevated morbidity and mortality rates related to COVID-19 as well as confusion regarding preventive and therapeutic therapies, can provoke different emotional responses.<sup>54,55</sup> In addition, a vast amount of information can increase the perception of danger and have the potential to impact mental health and well-being.<sup>52,56</sup>

## Conclusions and implications for nursing practice

In the current study, older adults reported a high prevalence of mild-to-moderate and severe peritraumatic stress during the COVID 19 pandemic. The prevalence of peritraumatic distress was significantly higher among older adults aged  $\geq 70$  years, those living in rural areas, those living alone, those with comorbidities, those who rated their health status as poor, and those who were watching negative news than in other older adults. Moreover, age, sex, place of residence, presence of comorbidities, and self-rated health status were predictors of peritraumatic distress. The findings of this study recommend that more attention needs to be paid to young older adults, old older adults, aged women, non-working older adults, older adults living in rural areas, and older adults with chronic diseases. Providing psychological counseling, education, and intervention to older adults is essential during an epidemic. National strategic planning and management for psychological intervention, including epidemiological screening, monitoring, counseling, and referral during major disasters, through telenursing and teleconsultation, should be established. Promoting a supportive social network is important for decreasing distress during pandemics. Since media reports can be emotionally disturbing, so educating older adults about contacting pandemic-related news should be monitored and limited, and taking caution about the use of media that aids in the spread of fabricated data and rumors. Accessibility to medical resources and the public health service system should be further strengthened and improved in rural areas.

## Limitations

The cross-sectional study design does not clearly show the sequential relationship by time and does not show the causal associations between variables. The sample was restricted to the older adult who could read and write, who were able to use the online resources, and who had access to the internet. Therefore, the sample's representativeness and generalization of the results are limited.

## Declaration of Competing Interest

None.

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