

Fear of COVID-19, Nurses' Stress, and Health Care Behaviors toward Elderly People

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Abstract: Elderly people are the most vulnerable group for high morbidity and mortality from Covid-19. As nurses are at the front of fighting this pandemic in all geriatric settings, they have faced several stressors and fear of corona which can affect the provided elderly care. This study **aimed to** determine nurses' fear of Covid-19 and stress and their effects on health care behaviors towards elderly people. **Research design:** A cross-sectional descriptive research design was carried out on **185 nurses** who are working in geriatric health care settings of ten governorates of Egypt and completed an online questionnaire which distributed from September 2020 to February 2021. **Tools:** Demographic characteristics and three scales were used: **(1)** The Fear of COVID-19 (FCV-19S), **(2)** The Nursing Stress Scale (NSS), and **(3)** The Caring Behaviors Inventory scale (CBI). **Results** indicated that 41.0 of the studied nurses had a mild level of fear from COVID-19 and 20% of them experienced severe stress. Besides, there was a significantly positive correlation between nurses' Fear of COVID-19 and their stress ($r=.77$, $p <.001$), while, significant negative correlations between (fear of COVID-19 & nursing stress) and caring behaviors with ($r= -.61$, $p <.001$) & ($r= -.55$, $p <.001$) respectively were found. **Conclusion:** This study demonstrated that 41% and 35% of the studied nurses had mild levels of fear from Covid-19 and stress respectively, added to nurses' fear of Covid-19 and stress affected health care behaviors toward elderly people negatively. **Recommendations:** Psychological intervention for geriatric nurses is needed to ensure adequate adaptation and high quality of elderly care despite this global crisis.

Keywords: Fear of COVID-19-Nurses-Stress-Caring behaviors.

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Introduction

Corona virus disease 2019 (COVID-19) is a chief communal health challenge globally. Firstly, it was discovered in China in December 2019 and has been quickly spreading to fight all over the world with economic, social, and psychological adverse consequences [1]. It is mainly transmitted by close contacts through respiratory; sneezes or coughs or by touching contaminated objects [2].

World health organization (WHO) in July 2021, reported that the total of definite cases of COVID-19 was 194,080,019, and the deaths reached 4,162,304 globally [3]. Elderly people (over-65 age) with underlying chronic conditions are the most susceptible risky group represented 88% of all deaths [4, 5].

In Egypt; the total number of cases of COVID-19 were 284,024 and 16,487 deaths, in July 2021, as it ranked ninth globally in the death rate by 5.8% [3]. The highest death rate among infected patients in Egypt was in the group of 65 years and over and representing 48.9% of total deaths. Likewise, Egypt ranked 68th globally in the number of people infected with the virus, as well as, 186th globally in the rate of recovery from the disease [6].

While COVID-19 affects all age groups, elderly people are more vulnerable to have severe illness if they became infected, causing fatal acute respiratory distress syndrome for them, and rapid deterioration and complications lead to death [7]. This can be attributed to lower immunity, decreased functional capacity, associated co-morbidities, plus age-related physiological changes [8].

This dangerous number of definite cases can overpower healthcare systems with numerous cases requiring crucial care, which consequently increases the workload on healthcare providers, especially nurses who are in a position of direct contact with elderly cases with COVID-19 [9].

According to the International Council of Nurses (ICN); more than 600 nurses died as a result of COVID-19 worldwide [10]. Hence, nurses are working under higher stressful circumstances despite the progressive shortage of staff, limited resources, and a high risk of infection from patients which put them at risk for physical, emotional, and mental health problems that negatively affect the quality of provided care [11].

Now a day, geriatric nurses in all geriatric health care settings getting a higher responsibility of protecting and saving elders' lives, preventing virus transmission between residents; maintain isolation precautions, providing continuous care for infected cases on a daily regular basis[12]. Excessive workload and stress can interfere with a person's physical and mental health contributing to low levels of productivity [13].

The severity and fatality of and susceptibility to disease can create anxiety, stress, and fear among nurses because they work directly with coronavirus patients who are risky for suffering and dying [9]. Several recent related studies have shown higher dysfunctional levels of stress and fear related to the COVID-19 pandemic among nurses more than the other health care workers and the general population [11, 14].

Therefore, psychosocial assessment and interventions are essential to help the healthcare staff particularly nurses to well deal with, cope, and respond to the COVID-19 epidemic as well as, to improve the provided health care in the future [14].

Significance of the study

In the context of the global crisis triggered by the COVID-19 virus, elderly people are the most vulnerable group for high morbidity and mortality rates as a result of co-morbidities and health care providers especially nursing staff is the first line of defense to combat this disease.

The huge number of infected cases during the Covid-19 outbreak raises the workload on nurses and increases the responsibility to save the lives of the elderly and protect their own safety; this is putting nurses at greater risk for stressful working conditions, fear of death, and infection from patients [2, 3]. There is little recent literature focusing on determining geriatric nurses' fear of COVID-19 and stress, and their effects on health caring behaviors towards elderly people in Egypt. From this point, this study was conducted.

Aim of the study

The aim of the current study was to determine nurses' fear of Covid-19 and stress, and their effects on health care behaviors towards elderly people.

Research questions:

Q1- What are the levels of stress and fear of Covid-19 among nurses of geriatric health care settings?

Q2- If there is a correlation between nurses' fear of Covid-19 and their stress?

Q3- Does nurses' fear of Covid-19 and stress affect health care behaviors toward elderly people?

Subjects and Method:

Research design:

A cross-sectional descriptive research design was utilized in this study.

Setting:

The study was carried out on nurses who are working in geriatric health care settings of ten governorates of Egypt and who were accessible over the Internet. These governorates were (Cairo, Alexandria, Giza, Fayoum, Zagazig, Gharbia, Mansoura, Assuit, Suez, and Minia).

Subjects:

A total of 230 geriatric nurses completed the questionnaire with a reply rate of 26.47%. There were forty-five questionnaires that were invalid and excluded. Ultimately, **185 nurses actually completed** the online questionnaires, with an efficiency rate of 97.9%. Nurses were individually requested to share in the research and the questionnaire was sent for them electronically over the Internet and Whatsapp.

The inclusion criteria: Nurses who are currently working in geriatric health care settings for at least six months and who did not currently have corona disease.

Study duration. Data was collected between September 2020 and February 2021.

Tools: Four tools were utilized to collect the essential data:

Tool I: Demographic Characteristics of nurses. A structured questionnaire was established by the authors after revising the relevant literature to obtain the necessary information related to; age- marital status- sex-educational level- place of work-working shifts- previous Covid-19 experience, and experience years.

Tool II: The Fear of COVID-19 Scale (FCV-19S): It is a seven-item scale **adopted from [15]** and designed to assess the fear level experienced through the COVID-19 epidemic by persons. The variables of scale are counted on a five-point Likert Scale considered as the following: Strongly Disagree=1; Disagree=2; Neither Agree; Nor Disagree=3; Agree=4; and Strongly Agree=5. The sum total score varieties from 7 to 35, with a greater score representing more level of fear from COVID-19. Scores were obtained by reversing responses and then summing across all scale items and categorized as the following: Normal (7-16); Mild level of fear (17-26), and Sever level of fear (27-35).

Tool III: Nursing Stress Scale-Spanish Version (NSS-34) is a self-administered questionnaire adopted from [16] and used to measure nurses' work-related stress. The NSS targets nursing stress rather than general job stress. It involved 34 items categorized into seven major sources of stress that were perceived by nurses while performing their duties. The seven sub-scales are; 1-Death and suffering (7 items); 2-Conflict with physicians (5 items); 3-Inadequate preparation & training (3 items), 4-Lack of support (3 items), 5-Conflict with other nurses (5 items); 6-Workload (6 items), and 7-Uncertainty about treatments (5 items). Each item's responses ranked on a 4-point Likert scale fluctuating from (never = 0, sometimes = 1, frequently = 2, and very frequently = 3). The sum of the obtained scores resulted in a global index, ranging from 0 to 102. A higher score reflects a higher stressful condition. Scores are obtained by reversing responses and then summing across all scale items and categories as the following: Normal (0-34); Mild level of stress (35-68), and Sever level (69 -102).

Tool IV: The Greek Version of the Caring Behaviors Inventory Scale (CBI-GR) **adopted from [17].** It is a Self-reported questionnaire used to determine nurses' perceptions about nursing care (assessing the provided care from their point of view). It was containing 24-items that classified into four underlying variables; 1) Professional Skills and Knowledge; 2) Assurance of Human Presence; 3) Patient's Respect; and 4) Positive Connectedness. Each item's responses ranked on a 6-point Likert scale fluctuating from (Never =1 to Always=6). Evaluation of the scale is done according to the total scores; thus, low scores indicate the low perception of care.

Tools validity and reliability:

The tools validity was examined by five experts of the Psychiatric and Gerontological nursing field to test the clarity, applicability, and completeness of the questions, and their suggested modifications were done in order to reach the final form. **The reliability** of tool

II, tool II, and tool IV were tested to measure their internal consistency by using Cornbrash's alpha test. It was ($r= 0.84$ for tool II), ($r= 0.88$ for tool III), and (0.87 for tool IV) which indicated a high reliability.

The pilot study:

In order to examine the tools applicability and clarity, a pilot study was carried out on 10 nurses who were excluded from the actual sample because of needed modifications. Likewise, it is directed to estimate the needed time, to discover any barriers for data collection process.

Study procedure:

1. An official approved was issued from the Faculty of Nursing, Fayoum University.
2. Data collection for this study was carried out over a period of 6 months from September 2020 to February 2021.
3. All nurses were called in to participate in the survey by Whatsapp platform groups after presenting the purpose, instructions, inclusion criteria, and precautions. After the nurses' agreement to participate was obtained, the questionnaires were sent and answered online.

Ethical consideration:

This research was depending on an online survey. The participants' agreement was sought by filling out a questionnaire form. When compiling the data, the researchers would encode the surveys evenly. Furthermore, the participants were free to withdraw at any time.

Data analysis

Data were processed using SPSS 22.0 for Windows statistical software program. The entered data were analyzed using descriptive analysis, frequencies and percentages, charts, means and standard deviations, and correlations. Statistical Significance was set at $p < 0.05$.

Results

Table1: Participants' demographics characteristics (NO=185).

Demographic Characteristics	No (%)
Sex	
• Women	170 (91.9)
• Men	15 (8.1)
Age	
Mean \pm SD	42 \pm 9.57
Minimum- Maximum	23-60
Marital Status	
• Single	12 (6.5)
• Married	156 (84.3)
• Divorced	10 (5.4)
• Widowed	7 (3.8)
Educational level	
• Nursing school	54 (29.2)
• University	120 (64.9)
• Post graduated	11 (5.9)
Working Shift	
• Morning	61 (33%)
• Rotated	95 (51.4)
• Night	29 (15.6)
Experience years	
• 5-10 years	108 (85.4)
• 11-15 years	77 (41.6)
History of covid-19 infection	
• Yes	17 (9.2)
• NO	168 (90.8)

Table (1): Reveals that most participants were women (91.9%), mean age was 42 \pm 9.57. Also, 84.3 % and 64.9% % of them were married and had bachelor graduates respectively. Besides, (85.4%) of the participants had (5-10) years of experience and 9.2% of them had previous Covid-19 infection.

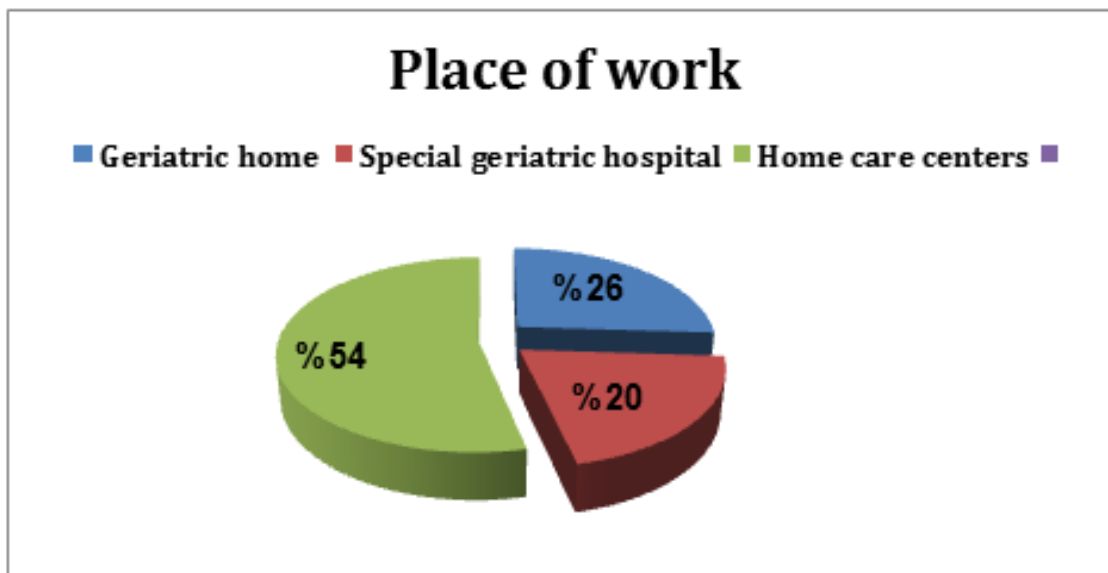


Figure (1): Nurses' distribution according to their place of work (N=185)

Figure (1): Displays that 54% and 26.0% of the participants were worked at home care centers and geriatric homes respectively.

Table (2): The Percentage of participants according to their governorates.

Governorate	%	Governorate	%
Cairo	22	Gharbia	7
Alexandria	18	Mansoura	5
Giza	15	Asuit	4
Fayoum	13	Suize	4
Zacazek	10	Minia	2

Table (2): Illustrates that the most participants involved in the study were from the governorates of Cairo and Alexandria (22% and 18% respectively), followed by Giza and Fayoum governorates. As for the response, it is an individual and does not represent the reality of the service.

Table (3): Frequency distribution of Nurses' responses to Fear of Covid-19 Scale items (N=185).

Fear of COVID-19 Scale Items		Strongly Disagree 1		Disagree 2		Neutral 3		Agree 4		Strongly Agree 5	
		F	%	F	%	F	%	F	%	F	%
1	I am most afraid of Corona virus.	90	48.6	70	37.8	10	5.4	7	3.8	8	4.3
2	Feeling of uncomfortable when think about Corona.	28	15.1	20	10.8	40	21.6	12	6.5	85	45.9
3	My hands became sweaty when I think about Covid.	100	54.1	24	13.0	12	6.5	30	16.2	19	10.3
4	I am worry of life losing because of Corona.	91	49.2	15	8.1	7	3.8	2	1.1	70	37.8
5	When I watch recent news related to the virus on different media, I become anxious.	30	16.2	18	9.7	50	27.1	35	18.9	52	28.1
6	Difficult sleep as a result of worrying about getting Corona.	66	35.7	58	31.4	20	10.8	24	12.9	17	9.2
7	Having increased heart rate or palpitates when thinking about receiving the infection.	80	43.2	20	10.8	53	28.6	20	10.8	12	6.5

Table (3): Shows that the nurses experienced fear of corona, in which 45.9%, 37.8 %, and 28.1% of them had "discomfort when thinking about Corona, worry of losing life because of Corona, and being anxious when watching news and stories about Corona on social media" respectively.

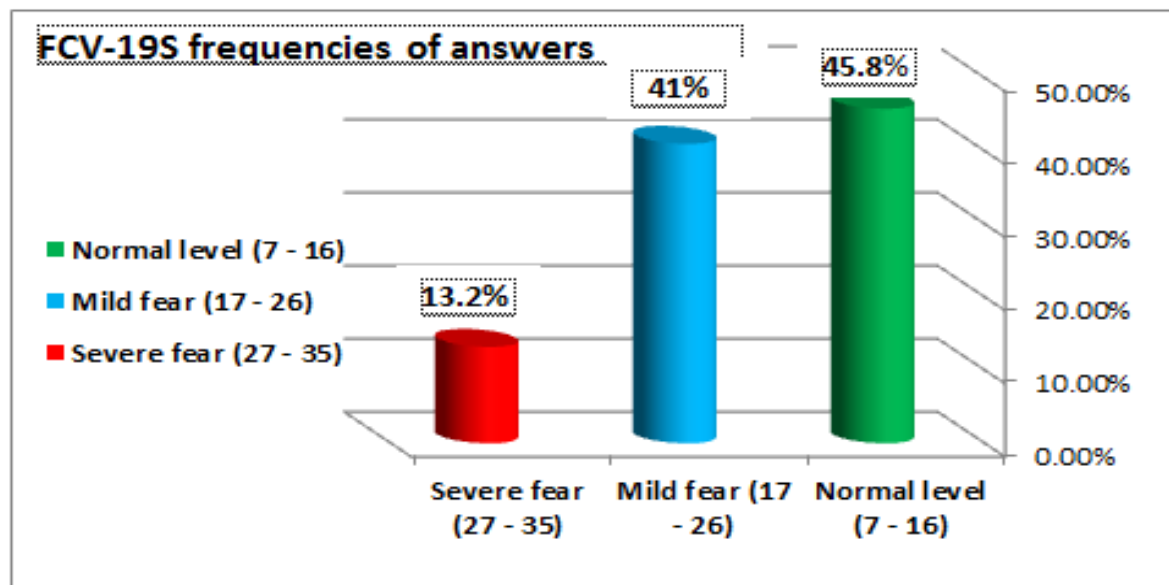


Figure (2): Percentages of fear levels according to (Fear of Covid-19 Scale) among the geriatric nurses (N=185).

Figure (2): Represents that 41.0 % of the studied nurses had a mild level of fear, while 13.2% of them had severe fear of Covid-19.

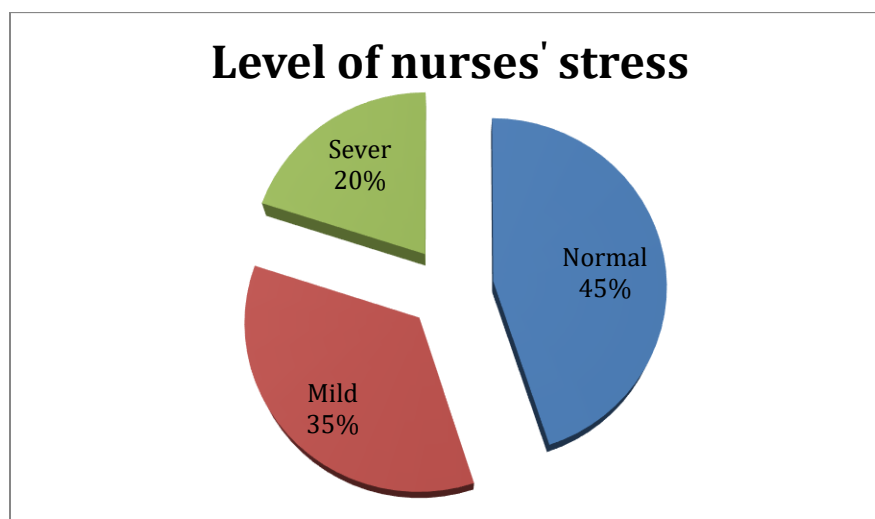


Figure (3): Stress levels among the geriatric nurses (N=185).

Figure (3): Reveals that 35% and 20% of the geriatric nurses experienced mild and severe stressful conditions respectively.

Table (4): Mean value of Nursing Stress (NSS-34), Caring Behavior Inventory (CBI) and Fear of Covid-19 (FCV-19S) scales.

Variable	Mean (SD)
(NSS-34) Sub-Scales	
• Work load	2.68 (0.83)
• Deaths and suffering	2.65 (0.76)
• Lack of support	2.56 (0.88)
• Conflict with physicians	2.44 (0.86)
• Inadequate training & preparation	2.39 (0.86)
• Conflict with other nurses	2.29 (0.88)
• Uncertainty concerning treatment.	1.71 (0.84)
Total NSS mean value	2.22 (0.65)
CBI Sub-Scales	
• Assurance of human presence	5.07 (0.73)
• Professional knowledge and skill	4.90 (0.76)
• Respect for patient	4.50 (0.84)
• Positive connectedness	4.32 (0.89)
Total CBI mean value	4.52 (0.81)
FCV-19 Scale	
Total mean value of FCV-19S	45.02 (SD = 7.63)

Table (4): Shows that the more detected stressful factors among the studied nurses were work load and deaths with mean value of (2.68 ± 0.83) and (2.65 ± 0.76) , followed by lack of support (2.56 ± 0.88) and conflicts with physician (2.44 ± 0.86) . Concerning caring behaviors inventory scale (CBI), it was found that the mean values of CBI items were low in the items of "Positive connectedness" and "Respect for patient" compared to other items. As regards the mean value of Covid-19 fear scale, it was (45.02 ± 7.63) .

Table (5): Correlations between total the scores of NSS, FCV-19S, and CBIS (N= 185).

Variables	r (p-value)		
	NSS	FCV-19S	CBI
NSS	----		
FCV-19S	.77 (< .001)	-----	
CBI	-.55 (< .001)	-.61 (< .001)	-----

Note. NSS = Nursing Stress Scale, **FCV-19S** = Fear of COVID-19 scale, **and CBIS**= Caring Behaviors Inventory Scale.

Table (5): Shows a significant positive correlation between nursing stress scale (NSS) score and the Fear of COVID-19 scale score (FCV-19S) reflected by ($p < .001$). Furthermore, significant negative correlations were found between (NSS & FCV-19S) scores and caring behaviors inventory scale (CBI) score with ($P < .001$). This table answered the research questions in which results indicated that the level of fear affected nurses' stress, added to, both fear of Covid-19 and stress among geriatric nurses were predictors of decreased health caring behaviors toward elderly people.

Discussion

Covid-19 affected all age groups from all Egyptian areas, but most deaths were documented among elderly people with comorbidities. Nurses meet many challenges of care, adapt to provide end-of-life care for elderly patients who experience a rapid deterioration as a result of this infection more than others, hence they were at greater risk of experiencing psychological and physical symptoms that can negatively affect the provided care.

Therefore this study was conducted to determine nurses' fear of COVID-19 and stress, and their effects on health caring behaviors toward elderly people.

The main finding of this study was that most of the participants were females. This may be attributed to the male gender didn't prefer to work at geriatric places or to choose this nursing profession, as this age category needs patience and gentleness care. This was similar to the previous study [12] which was conducted to investigate the experiences of geriatric nurses during the Covid-19 outbreak in nursing homes across four countries (**Spain, Italy, Peru, and Mexico**) and denoted that most of the studied nurses were females.

The present study reflected that the studied nurses' age was between (23-60) years. Most of them were married, and more than half of them had a university education. This

was consistent with [14] who found that the majority of nurses who work in geriatric care settings were female, their age was between 30 to 45 years and most of them had a bachelor degree.

Findings of this study illustrated that near to half and thirteen percent of the studied nurses had a mild and severe level of from Covid-19 respectively. "Afraid of losing life because of Corona" took the highest percentage of all scale's items. These findings were similar to the previous **Chinese** study [18] which demonstrated a high level of anxiety and fear among geriatric nurses and mentioned that fear of COVID-19 is universal to most geriatric nurses as they have a greater responsibility toward protecting older people who are the foremost victims of the COVID-19 and protecting themselves from gaining the infection were the main sources of their fear.

Also, this finding supports a previous study established in **Oman** [19] which illustrated that fear was the main psychological consequence of Covid-19 among nursing staff in Nursing Homes and discussed that many psychological challenges experienced by geriatric nursing staff during the pandemic as a result of the sudden increase in the number of COVID-19 cases and its related deaths, as well as, the frequently exchanging protocols, deficiency of training, longer work hours, fear of acquiring the infection for them and for family members, and shortage of personal protective supplies.

Also, our study results reflected that one-third and near to one-quarter of the studied nurses experienced mild and severe stress respectively, the most stressful factors reported by them were; workload and deaths. These findings come in agreement with another study [14] which denoted that most geriatric nurses during the Covid-19 pandemic were stressed by a patient's death and the dying process, and excessive workload which negatively influencing their performance. This fact can be attributed by unexpected staff shortages, high job demands, and increased daily health needs of residents with low resources during the pandemic period.

While these findings were against [25] who revealed that conflicts with physicians and conflicts with others nurses were the most stressful factors experienced by the studied nurses. And stated that these similarities and differences between the studies' results may be related to; the size of the sample, environmental influences, psychological condition of respondents, governmental policies, and culture.

As regards the correlations between the three study variables; nurses' fear of Covid-19, stress, and health care behaviors toward elderly people, results of the current study reflected a significant strong positive correlation between nurses' Fear of COVID-19 and

their experienced stress. Besides, significant negative correlations between nurses' stress and fear of Covid-19 with health caring behaviors were documented. These findings were answered the research questions.

The similar finding was reported by a study conducted in the **Philippine** [20] to investigate the effect of fear of Covid-19 on nurses' job stress and revealed a significant positive relation between geriatric nurses' fear and their stress, and discussed that caring for older people during the outbreak of disease is considering the very stressful situation for nursing staff as they are more liable for acquiring the infection, they need 24-hour health care because of the rapid decline, and the interrelated physical, medical, or mental conditions.

Also, these findings were in the same line with the studies conducted in **Spain, Italy, Oman and China** and [19, 21, 22 and 23] respectively. This can be attributed by the increasing deaths among health workers caring for patients with COVID-19 became a psychological challenge putting them at greater risk for psychological problems such as uncertainty discomfort, fear, stress, depression, and sleep disturbances which may threaten their future professionals' work outcomes and psychological well-being, and negatively impacting their abilities to save their lives and to save others.

Diversely, the previous study conducted in **Italy** demonstrated a low level of stress and fear among the nursing staff during pandemic Covid-19 [24]. From the authors' view of point, this variation can be explained by the different policies and isolation actions that were achieved by the different countries to decrease the spread of COVID-19, added to the variations of cultural norms, lifestyle, beliefs, and values between nations may affect the degree of stress, anxiety, and fear caused by Corona infection and the quality of provided care.

On other hand, results reflected a negative correlation between geriatric nurses' (fear and stress) and health caring behaviors toward older adults. Our findings were confirmed by the study which conducted In **Australia** [25] and showed similar outcomes, and discussed that inadequate management of nurses' fear and stress during this global crisis affects negatively their performance, influences the quality of provided health care, and consequently affects patients' safety and outcomes.

Additionally, our findings supported by the earlier studies of [26, 27] which reflected that health caring behavior is significantly affected by; inadequate information about the virus, the continuous care provided for patients with COVID-19, great workload, and persistent contact with serious events as death, and recommended an urgent

need for developing and implementing mental health interventions among the health care providers especially geriatric nurses.

Conclusion

This study demonstrated that 41% and 35% of the studied nurses had mild levels of fear from Covid-19 and stress respectively, workload and deaths of patients were the most sources stress among them. Additionally, the level of nurses' fear influenced their stress and both nurses' fear of Covid-19 and stress affected health care behaviors toward elderly people negatively at geriatric health care settings in different governorates of Egypt.

Recommendations:

- An urgent need for designing a psychological intervention programs for nurses of geriatric care settings to ensure adequate adaptation and high quality of elderly care despite this global crisis.
- Medical institutions and the government should continue to strengthen the preventive measures of corona in all health care settings and provide more comprehensive care involving the frontline healthcare workers, especially nurses.
- Governmental efforts are needed emphasizing Stress reduction activities and measures to decrease excessive workload for nurses at different geriatric health care settings in Egypt.

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