

## Fear, Perceived Stress, Life Satisfaction, and Coping Styles among Community Dwelling Older Adults during COVID -19 Pandemic

Eman Baleegh Meawad Elsayed<sup>1</sup>, Tarek Mohammed Ahmed Ahmed Selim<sup>2</sup>

(1) Assistant. Professor of Gerontological Nursing, Faculty of Nursing, Mansoura University, Egypt. (2) Lecturer of Gerontological Nursing, Faculty of Nursing, Mansoura University, Egypt [drtarekselim@yahoo.com](mailto:drtarekselim@yahoo.com) .

### Abstract

**Background:** Since COVID-19 pandemic and all people around the world especially elderly people affected by its consequences on their daily life as it increases their fear, stress, and affect their life satisfaction and their coping styles to changes occurred. **Aim:** To estimate fear, perceived stress, life satisfaction, and coping styles among community dwelling older adults during COVID -19 Pandemic. **Methods:** A descriptive exploratory design was used. A purposive sample of 241 community dwelling older adults of both sexes registered in El Saada elderly club in Mansoura city, Egypt. **Tools:** Online electronic Arabic questionnaire through Google form was used including: Elderly People's Demographic and medical data, Fear of COVID-19 Scale, Perceived Stress Scale, Satisfaction with life Scale, and Brief Cope Scale. **Results:** Less than one third of the studied elderly had infected with COVID-19 with mild to moderate symptoms. Highest percentage (43.2, 31.5) respectively of them had moderate to severe feeling of fear which increased with age and no previous infection; while severe stress was higher in elderly had severe fear of COVID, low income and previous infection. Less than two thirds of them were satisfied with their life that was higher in elderly with mild to moderate feeling of stress. Moreover 54.4% of them used high problem based coping followed by high emotional based coping (31.5%), while high dysfunctional based coping used by 18.3%. **Conclusion:** Highest percentage of studied elderly had moderate to severe feeling of fear which associated with higher stress of COVID-19 infection, but they still were satisfied with their life and they used high problem based coping styles. **Recommendations:** Promote elderly awareness about how to avoid COVID-19 infection and how to cope after infection, and provide them with reliable updated news about the pandemic to decrease feeling of fear and stress through all types of media and health educational sessions.

**Keywords:** Fear, Stress, Life Satisfaction, Coping Styles, COVID-19 and Older Adults

### Introduction

This time the most important global health crisis and the biggest challenge the people have faced since the Second World War is the coronavirus disease 2019 (COVID-19) outbreak. It is a respiratory disease that is highly infectious caused by severe acute respiratory syndrome-coronavirus-2 (SARS - CoV-2). The disease's clinical picture varies from mild or even asymptomatic to severe respiratory failure and even death generating significant consequences on individuals, families and societies (Boulos & Geraghty,

2020). Persons of any age can be affected by the virus, but the most vulnerable to serious infection and death are older adults due to age-related decline in immunity and having more preexisting health conditions associated with aging, such as hypertension, cardiovascular disease, respiratory disease, diabetes, dementia and cancer which could predispose the older-adults to develop severe complications of COVID-19 (Nikolich-Zugich et al., 2020 & Verity et al., 2020).

COVID-19 took a heavy toll on older adults, approximately 41% of the cases and 93% of deaths from the virus were aged 60 or older, and the prognosis is worse in elderly patients with comorbidities. As a consequence, older adults were identified as a group at risk, and strict governmental restrictions were imposed on them (**Guterres, 2020**). So World Health Organization (WHO) has warned that the impact of COVID on mental and psychosocial wellbeing of vulnerable groups, such as older adults, will be large and enduring (**WHO, 2020**). As a result of distress related to the progression of the disease, moreover there is no reliable cure for this disease yet, its resolution remains unpredictable, more prolonged quarantine duration, and the main changes in lifestyle and everyday habits are required to avoid infections, like washing hands frequently, use of face masks outside the home, avoidance of touching face, nose, eyes with hands, and social distancing increases the psychological burden and put already vulnerable groups at greater risk for psychological distress and fear (**Ho, et al., 2020**).

Although, fear is an adaptive emotion that helps to activate energy to deal with potential threat, it can be maladaptive when it is not well attuned to the actual threat. The elders are estimated to be more susceptible to post COVID-19 pandemic stress and fear. Their worries could be coming from the fact that the contagion could occur from contact with others even without any obvious manifestations, their vulnerability to complications and high rate of fatalities also contribute to induce feeling of stress and fear of death among them (**Perrotta et al., 2020**). In addition, the inadequate knowledge regarding the route of transmission, treatment, safety measures, the spread of negative news in mass media, and social network may add to their worries. All of these causes could impose them to be more isolated and increase their feelings of avoidance, which disrupted normal social, economic, occupational, leisure, and religious activity, which can lead

to increase psychological distress and decrease their level of life satisfaction (**Ahorsu et al, 2020**).

Life satisfaction is the difference between what person has and his expectations. Also, it can be defined as the extent to which individual needs, goals and wishes are met. Many studies showed that the fear of COVID-19 is positively correlates with increase in negative emotions as depression and anxiety which lead to increase stress and decrease in positive emotions and life satisfaction (**Ahorsu et al., 2020 & Li et al., 2020**). Consequently, stress and psychological problems among elderly people precipitate serious health conditions. All of these associated COVID stresses, restrictions impacting on daily life, such as limitations on public outings, reduce the opportunities of elderly to release stress (**Venkatesh & Edirappuli, 2020**). So, it is important to state coping strategies that can help elderly adjust to the highly stressful situations related to COVID-19.

Coping is the persons' cognitive and behavioral efforts to manage external and internal demands that exceeding a person's resources. When elderly people faced negative experiences or stress, some of them responding negatively and some positively. Evidence suggested that coping styles toward stress affect their quality of life, and negative coping styles may be related to psychological problems such as post-traumatic stress disorder (**Santarnechi et al., 2018 & Wang et al., 2020**). So, using coping strategies in a traumatic situations may prevent a mental health problems and proposing strategies that elderly can use to cope with stress is very essential element to overcome negative effects of COVID-19, and help the elderly who have distress and respond negatively to be detected early and undergo timely intervention, which lead to improve their psychological symptoms, promote their life satisfaction, and general health. (**Tahara et al., 2021**).

### Significance of the study

COVID-19 is a significant threat to elderly life and health. There has been no definitive treatment and specific protection against COVID-19. As a result of multiple chronic illnesses as a consequence of aging the prognosis is worse in elderly patients with comorbidities. Which it makes them experience fear, stress, anxiety and mood disorders, which have a negative impact on their psychological well-being and quality of life (Ye et al., 2020). So this study was conducted to estimate fear, perceived stress, life satisfaction, and coping styles among community dwelling older adults during COVID 19 pandemic.

### Aim of the study

To estimate fear, perceived stress, life satisfaction, and coping styles among community dwelling older adults during COVID 19 pandemic.

### Research questions:

**Q1:** What are the levels of fear, perceived stress, and life satisfaction, among elderly during COVID 19 pandemic?

**Q2:** What are the associated factors of fear, perceived stress, and life satisfaction, among elderly during COVID 19 pandemic?

**Q3:** What are the coping strategies used by elderly people during COVID 19 pandemic?

### SUBJECTS AND METHODS

**Research design:** This study used a descriptive exploratory research design.

**Setting:** The study was carried out, in El Saada elderly club in Talkha district, Mansoura Egypt. This club consists of a big garden and celebrating hall, and provides many services as religious, recreational, and cultural services.

**Sample size:** The sample size was calculated by medcalc software Based on the previous study by Wang et al., (2020), at the following formula is used: Sample size

$$= \frac{[(Z_{1-\frac{\alpha}{2}})^2 + P(1-P)]}{d^2}$$

= Where,  $Z_{1-\alpha/2}$  = is the standard normal variation, at 5% type 1 error ( $p < 0.05$ ) it is 1.96. P = the expected proportion in

population based on previous studies.  $d$  = absolute error or precision. So, Sample size =  $[(1.96)^2 \cdot (0.342) \cdot (1-0.342)] / (0.06)^2 = 241$ .

**Subjects:** A purposive sample of 241 community dwelling older adults of both sexes from the above mentioned setting and fulfilling the following criteria:

- Their age from 60 years old and above.
- Able to communicate and willing to participate in the study.
- Elderly with psychiatric illness, neurological diseases, and physical disabilities were excluded.

### Tools:

Online electronic Arabic questionnaire including the following five tools to collect the data for this study:

**Tool I: Elderly People's Demographic and Medical Data form:** It was developed by the researcher to identify demographic characteristics and medical history: as age, sex, educational level, marital status, occupation before retirement, income, presence of chronic illness, duration of disease and, medication taken, previous infection with COVID 19, and general health status self-evaluation.

**Tool II: Fear of COVID-19 Scale (FCV19S):**

Fear of COVID-19 scale was developed by Ahorsu et al., (2020). This scale included 7 items that assessed the fear of COVID-19, each item of the scale rated on a 5-point likert type scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Accordingly, the total score of FCV-19S calculated by adding up each item score (ranging from 7 to 35); with a score ranging from 7-15 indicating mild fear, from 16-25 indicating moderate fear, and 26-35 indicating severe fear of COVID-19.

**Tool III: Satisfaction with life scale (SWLS):**

It was developed by Diener et al., (1985). This scale included 5 items designed to measure global cognitive judgments of one's life satisfaction. The participants indicated how much they agreed or disagreed with each

of the 5 items using a 7-point scale that ranged from 7 (strongly agree) to 1 (strongly disagree). Accordingly, the total score of SWLS calculated by adding up each item score (ranging from 5 to 35); with a score ranging from 5 - 9 indicating extremely dissatisfied, from 10 - 14 meant dissatisfied, from 15 - 19 meant slightly dissatisfied, 20 neutral, from 21 - 25 indicating slightly satisfied, from 26 - 30 meant satisfied, and 31 - 35 meant extremely satisfied.

#### **Tool IV: Perceived Stress Scale (PSS):**

This was developed by Cohen et al., (1983) including 10 items only. Each response rated on a five-point likert-type scale that ranged from (0) indicating "never" to (4) indicating "very often". Four statements from the scale (4, 5, 7, and 8) negatively stated and reversely scored. It was translated by Zen El-Abdeen et al., (2018). Total score obtained by summing up all item scores and ranging from 0 to 40. The scores from 0 - 13 considered as low level of perceived stress, scores from 14 - 26 as moderate level and scores from 27 - 40 as high level of perceived stress.

#### **Tool V: Brief Cope Scale:**

It was developed by Carver, (1997). It used to assess a different coping behaviors and thoughts a person may have in response to a specific situation. It consisted of 28 items rated on frequency of use by the participant with a scale of 1 reflecting ("I hadn't been doing this at all") to 4 reflecting ("I had been doing this a lot"). It made up of 14 subscales and represented by 2 items for each: self-distraction, active coping, denial, substance use, use of emotional support, use of informational support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame.

Items 2,7,10, 14, 23, and 25 were classified as problem-based coping and the rest of the items fell into emotion-based coping. Another model grouped the 14 subscales into three categories: problem-focused (use of instrumental support, active

copied and planning,) represented by 6 items, emotion-focused (acceptance, humor, religion, use of emotional support and positive reframing) represented by 10 items, and dysfunctional coping (behavioral disengagement, venting, self-blame, substance use, denial, and self-distraction) represented by 12 items (Bayuo & Agbenorku 2018). Total score of problem-focused coping strategies obtained by summing up all item scores and ranging from 6 to 24. The scores lower than 12 considered as low level of problem-focused coping strategies, scores from 12 to 18 as moderate level and scores from 18 to 24 as high level. Total score of emotion-focused coping strategies was ranging from 10 to 40. The scores lower than 20 considered as low level of emotion-focused coping strategies, scores from 20 to 30 as moderate level and scores from 30 to 40 as high level. Total score of dysfunctional coping strategies was ranging from 12 to 48. The scores lower than 24 considered as low level of dysfunctional coping strategies, scores from 24 to 36 as moderate level and scores from 36 to 48 as high level.

#### **Methods:**

1. Official permissions were obtained from the responsible authorities of Faculty of Nursing Mansoura University and forwarded to the director of El-Sadaa elderly club to obtain their permission to perform the study.
2. The study tool I (elderly people's demographic and medical data form) was developed by the researcher after a review of current literature (Bluma et al., 2020, Metwally et al., 2021).
3. Tool II (Fear of COVID 19 Scale), tool III (Satisfaction with Life Scale), and tool V (Brief Cope Scale) were translated into Arabic language by the researchers.
4. The content validity of the study tools was done by one expert (professor) from Psychiatric Mental Health Nursing, Faculty of Nursing Mansoura University and 6 experts

- (professors and assistant professors) of Gerontological Nursing in Faculty of Nursing Mansoura and Alexandria University to check the comprehensiveness, relevancy and clarity and applicability of the questions. According to their opinions, minor modifications were done, and the final form was developed.
5. Tool II (Fear of COVID 19 Scale), tool III (Satisfaction with Life Scale), tool IV (Stress Perceived Scale) and tool V (Brief Cope Scale) were tested for reliability by means of Cronbach's alpha coefficient ( $r = 0.82, 0.85, r = 0.86$  and  $0.81$  respectively).
  6. A pilot study was carried out on 10% (25) of the studied subjects to test and ascertain clarity and feasibility of the study tools, also for estimation of the approximate time needed to complete the study tools. In light of the findings of the pilot study, the necessary modifications were done. Those elderly were not included in the study sample.
  7. Before starting the study the researchers contacted with the responsible authority of El-Saada club then they were added to the WhatsApp of club members through the club management, and the purpose of the study was explained.
  8. The researchers developed electronic Arabic questionnaires containing all study tools through the Google form, which facilitated the online sharing to maintain social distancing during the lockdown and the generated link was shared on WhatsApp to the elderly club group members.
  9. All participants were invited to participate in this study and requested to answer the questionnaire and submit the form.
  10. All participants' responses were retrieved via WhatsApp, and Facebook messenger.
  11. The study was conducted in about three months beginning at June 2021 till the end of August 2021.

### **Ethical considerations**

-After ethical approval was obtained from Ethics Committee affiliated to Faculty of Nursing- Mansoura University. An official permission was obtained from the director of El Saada elderly club in Mansoura city. Verbal consent was obtained from elderly persons after complete explanation of the purpose of the study. The elderly were informed that they were voluntary to participate and that they could withdraw from the study at any time. Anonymity, privacy of the study subjects and confidentiality of the data collected were assured.

### **Statistical Analysis:**

After data were collected it was revised, coded and fed to statistical software SPSS version 22. The count and percentage mean, standard deviation, Chi Square ( $X^2$ ), confidence interval, crude odds ratio, logistic regression and adjusted odds ratio were statistical measures used in this study.

## Results

**Table1: Demographic characteristics of the studied elderly**

Item	No. %
<b>Age group</b>	
Young old (60 <75)	220 (91.3)
Middle old (75-85)	21 (8.7)
	Mean ± sd 66.834±1.087
<b>Sex</b>	
Male	117 (48.5)
Female	124 (51.5)
<b>Marital status</b>	
Married	123 (51)
Not married *	118 (49)
<b>Education</b>	
Basic education* secondary and above	171 (52.3) 70 (47.7)
<b>Income</b>	
Enough	171 (71)
Not enough	70 (29)
<b>Source of income</b>	
Pension	194 (80.5)
Support by others	47 (19.5)
<b>Work before retirement</b>	
Employee	102 (42.3)
House wife	73 (30.3)
Worker	51 (21.2)
Others	15 (6.2)
<b>Living with</b>	
Family	109 (45.2)
Son or relative	91 (37.8)
Alone	41 (17)

\*Not married (widow- divorced- single) \*Basic education (from primary to secondary)

**Table2: Frequency and percentage distribution of COVID 19 infection and health status among studied elderly**

Item	No.%
<b>Suffer from a disease</b>	
Yes#	193(80.1)
No	48(19.9)
<b>COVID-19 infection</b>	
Yes	71(29.5)
No	170 (70.5)
<b>Severity of infection</b>	
Mild	32(45.1)
Moderate	26 (36.6)
Severe	13(18.3)
<b>Family member infection</b>	
Yes	114 (47.3)
<b>Death of family member</b>	
Yes	70 (29)
<b>Health self-evaluation</b>	
poor	129 (53.5)
Good	112(46.5)

# means more than one answer

\* (Diseases include (hypertension -DM- osteoarthritis and others)

**Table3: Frequency and percentage distribution of Fear of COVID-19, perceived stress, satisfaction with life, and the coping strategies among studied elderly**

Fear of COVID-19	No. %
<b>Fear of COVID-19</b>	
Mild	61 (25.3)
Moderate	104 (43.2)
Severe	76 (31.5)
<b>Perceived stress</b>	
Low	14 (5.8)
Moderate	181 (75.1)
Severe	46 (19.1)
<b>Life satisfaction</b>	
Dissatisfied	93 (38.6)
Satisfied	148 (61.4)
<b>Problem based coping</b>	
Low	37 (15.4)
Moderate	73 (30.3)
High	131 (54.4)
<b>Emotional based coping</b>	
Low	28 (11.6)
Moderate	137 (56.8)
High	76 (31.5)
<b>Dysfunctional based coping</b>	
Low	73 (30.3)
Moderate	124 (51.5)
High	44 (18.3)

Figure (1) shows that the most common coping strategies used by the studied elderly were religion followed by use of instrumental support and acceptance.

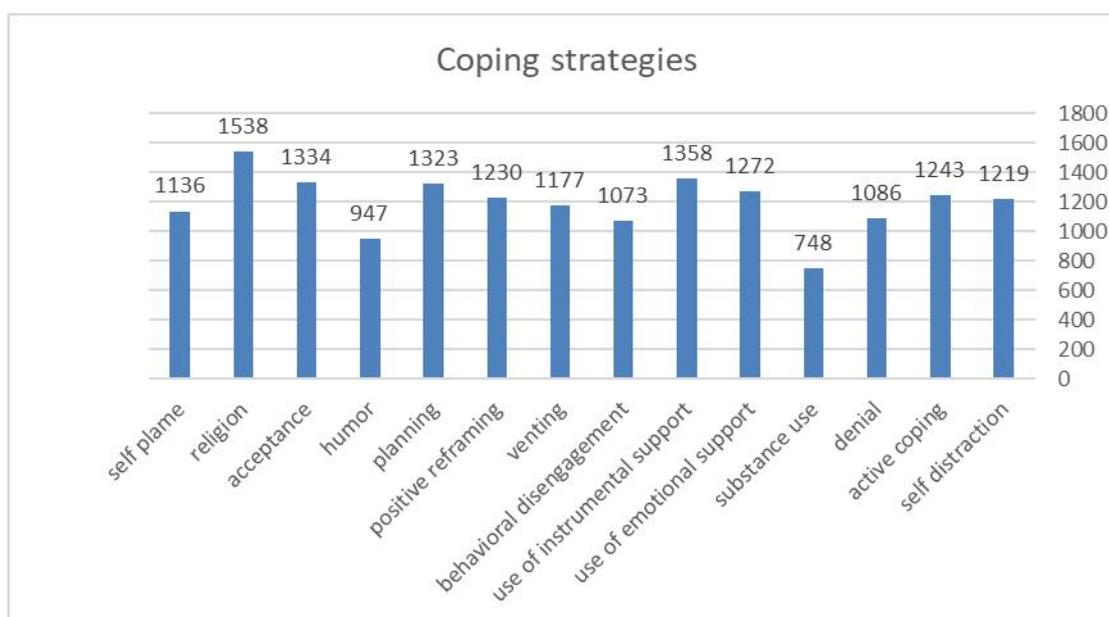


Figure 1: Frequency distribution of Coping strategies used by studied elderly during COVID19 pandemic

**Table 4: Prevalence of severe fear of COVID-19 among studied elderly and univariate, multivariate logistic regression analysis of its associated factors**

Variables	Total N(%)*	Univariate analysis			Logistic regression	
		COVID-19 fear N (%)**	P	COR(95% CI)	P	AOR(95% CI)
<b>Overall</b>	241(100)	76(31.5)				
<b>Age (years):</b> Young old Middle old <b>Mean±SD=</b> 66.834±1.087	220(91.3) 21(8.7)	63(28.6) 13(61.9)	0.003	r(1) 4.05 (1.60- 10.24)	0.003	r(1) 4.11(1.60-10.60)
<b>Sex</b> Male Female	117(48.5) 124(51.5)	44(37.6) 32(25.8)	0.050	r(1) 0.577 (0.333- 0.999)		
<b>Marital status</b> Married Not married	123(51) 118(49)	38(30.9) 38(32.2)	0.828	r(1) 1.063(0.617- 1.83)		
<b>Education</b> Basic education secondary and higher	126(52.3) 115(47.7)	43(34.1) 33(28.7)	0.369	r(1) 1.28(0.745-2.224)		
<b>Income</b> Enough Not enough	171(71.1) 70(29)	47(27.5) 29(41.4)	0.038	r(1) 1.086(1.043- 3.34)		
<b>Living with</b> Family Alone	200(83) 41(17)	60(30) 16(39)	0.266	r(1) 1.49(0.333- 1.34)		
<b>Suffer from a disease</b> Yes No	193(80.1) 48(19.9)	62(32.1) 14(29.2)	0.705	r(1) 1.14(0.744- 2.99)		
<b>COVID-19 infection</b> Yes No	71(29.5) 170(70.5)	32(25.1) 44(25.9)	0.004	r(1) 2.35(1.31- 4.19)	0.004	r(1) 2.37(1.31-4.29)
<b>Health self-evaluation</b> Good poor	193(80.1) 48(19.9)	55(28.5) 21(43.8)	0.048	r(1) 1.95(1.019 – 3.73)		
<b>Constant</b> <b>Model <math>\chi^2</math></b> <b>% predicted</b>						-1.196 283.25 70.5

\*column%, \*\*row %

COR=Crude odds ratio AOR=Adjusted odds ratio CI=Confidence interval

**Table 5: Prevalence of perceived high stress among studied elderly and univariate, multivariate logistic regression analysis of its associated factors**

Variables	Total N (%)*	Univariate analysis			Logistic regression	
		Perceived high stress N(%)**	P	COR(95% CI)	P	AOR(95% CI)
<b>Overall</b>	241(100)	46(19.1)				
<b>Age (years):</b> Young old Middle old <b>Mean±SD=</b> 66.834±1.087	220(91.3) 21(8.7)	43(19.5) 3(14.3)	0.596	r (1) 0.686(0.193-2.43)		
<b>Sex</b> Male Female	117(48.5) 124(51.5)	20(17.1) 26(21)	0.451	r (1) 1.28(0.673-2.45)		
<b>Marital status</b> Married Not married	123(51) 118(49)	20(16.3) 26(22)	0.260	r (1) 1.45(0.762-2.78)		
<b>Education</b> Basic education secondary and higher	126(52.3) 115(47.7)	13(11.3) 33(26.2)	0.003	r (1) 2.78(1.38-5.61)		
<b>Income</b> Enough Not enough	171(71.1) 70 (29)	22(12.9) 24(34.3)	0.000	r (1) 3.53(1.81-6.88)	0.001	r (1) 3.08(1.54-6.17)
<b>Living with</b> Family Alone	200(83) 41(17)	34(17) 12(29.3)	0.083	r(1) 2.02(0.938- 4.35)		
<b>Suffer from a disease</b> Yes No	193(80.1) 48(19.9)	43(22.3) 3(6.3)	0.007	r (1) 4.3(1.27-14.52)		
<b>COVID-19 infection</b> Yes No	71(29.5) 170(70.5)	22(31) 24(14.1)	0.003	r (1) 0.366(0.188- 0.410)	0.29	r (1) 0.454(0.224- 0.921)
<b>Health self-evaluation</b> Good poor	193(80.1) 48(19.9)	30(15.5) 16(33.3)	0.008	r (1) 2.71(1.32- 5.55)		
<b>COVID-19 fear</b> Mild and moderate Severe	165(68.5) 76(31.5)	22(13.3) 24(31.6)	0.001	r(1) 0.333(0.172- 0.644)	0.19	r (1) 0.431(0.214- 0.869)
<b>Constant</b> <b>Model <math>\chi^2</math></b> <b>% predicted</b>						-0.837 208.58 81.7

\*column%, \*\*row %

COR=Crude odds ratio AOR=Adjusted odds ratio CI=Confidence interval

**Table 6: Prevalence of life satisfaction among studied elderly and univariate, multivariate logistic regression analysis of its associated factors**

Variables	Total N(%)*	Univariate analysis			Logistic regression	
		life satisfaction N(%)**	P	COR(95% CI)	P	AOR(95% CI)
<b>Overall</b>	241(100)	148(64.1)				
<b>Age (years):</b> Young old Middle old <b>Mean±SD=</b> 66.834±1.087	220(91.3) 21(8.7)	139(63.2) 9(42.9)	0.07	r (1) 0.437(0.176-1.08)		
<b>Sex</b> Male Female	117(48.5) 124(51.5)	68(58.1) 80(64.5)	0.312	r (1) 1.31(0.797-2.20)		
<b>Marital status</b> Married Not married	123(51) 118(49)	80(65) 68(57.6)	0.241	r (1) 0.731(0.434-1.23)		
<b>Education</b> Basic education secondary and higher	126(52.3) 115(47.7)	76(66.1) 72(57.1)	0.157	r (1) 0.684(0.405-1.15)		
<b>Income</b> Enough Not enough	171(71.1) 70(29)	109(63.7) 39(55.7)	0.250	r (1) 0.715(0.406-1.25)		
<b>Living with</b> Family Alone	200(83) 41(17)	125(62.5) 23(65.1)	0.448	r (1) 0.766(0.388-1.51)		
<b>Suffer from a disease</b> Yes No	193(80.1) 48(19.9)	116(60.1) 32(66.7)	0.411	r (1) 0.753(0.387-1.46)		
<b>COVID-19 infection</b> Yes No	71(29.5) 170(70.5)	46(64.8) 102(60)	0.492	r (1) 0.815(0.458-1.45)		
<b>Health self-evaluation</b> Good poor	193(80.1) 48(19.9)	122(63.2) 26(54.2)	0.256	r (1) 0.687(0.363-1.30)		
<b>COVID-19 fear</b> Mild and moderate Severe	76(31.5) 165(68.5)	104(63) 44(57.9)	0.450	r (1) 1.24(0.712-2.15)		
<b>Perceived stress</b> Mild and moderate high	195(80.9) 46(19.1)	131(67.2) 17(37)	0.000	r (1) 3.49(1.78-6.81)	0.000	r (1) 1.78 (1.87-6.81)
<b>Constant</b> <b>Model <math>\chi^2</math></b> <b>% predicted</b>						-0.534 307.43 66.4

\*column%, \*\*row %

COR=Crude odds ratio AOR=Adjusted odds ratio CI=Confidence interval

**Table 7: Prevalence of high dysfunctional coping among studied elderly and univariate, multivariate logistic regression analysis of its associated factors**

Variables	Total N(%)*	Univariate analysis			Logistic regression	
		Dysfunctional coping N(%)**	P	COR(95% CI)	P	AOR(95% CI)
<b>Overall</b>	241(100)	44(18.3)				
<b>Age (years):</b> Young old Middle old <b>Mean±SD=</b> 66.834±1.087	220(91.3) 21(8.7)	37(16.8) 7(33.3)	0.084	r (1) 0.404(0.152-1.07)		
<b>Sex</b> Male Female	117(48.5) 124(51.5)	31(26.5) 13(10.5)	0.001	r(1) 3.07(1.51-6.23)	0.008	r (1) 2.74(1.30-5.78)
<b>Marital status</b> Married Not married	123(51) 118(49)	25 (20.3) 19 (16.1)	0.403	r (1) 1.32(0.688-2.56)		
<b>Education</b> Basic education secondary and higher	126(52.3) 115(47.7)	24(19) 20(17.4)	0.744	r (1) 1.11(0.58-2.15)		
<b>Income</b> Enough Not enough	171(71.1) 70(29)	25(14.6) 19(27.1)	0.027	r (1) 0.459(0.233-0.903)		
<b>Living with</b> Family Alone	200(83) 41(17)	36(18) 8(19.5)	0.802	r (1) 0.905(0.386-2.12)		
<b>Suffer from a disease</b> Yes No	193(80.1) 48(19.9)	33(17.1) 11(22.9)	0.358	r(1) 0.693(0.321-1.49)		
<b>COVID-19 infection</b> Yes No	71(29.5) 170(70.5)	14(19.7) 30(17.6)	0.699	r (1) 1.14(0.566-2.32)		
<b>Health self-evaluation</b> Good poor	193(80.1) 48(19.9)	33(17.1) 11(22.9)	0.358	r (1) 0.693(0.321-1.49)		
<b>COVID-19 fear</b> Mild and moderate Severe	76(31.5) 165(68.5)	16(9.70) 28(36.8)	0.000	r (1) 5.43(0.152-650)	0.000	r(1) 5.76(2.81-11.81)
<b>Perceived stress</b> Mild and moderate Severe	195(80.9) 46(19.1)	28(14.40) 16(34.8)	0.000	r (1) 0.184(2.71-10.88)		
<b>Life satisfaction</b> Dissatisfied Satisfied	93(38.6) 148(64.1)	16(17.2) 28(18.9)	0.746	r (1) 0.890(0.452-1.75)		
<b>Constant</b> <b>Model <math>\chi^2</math></b> <b>% predicted</b>						2.85 194.06 81.7

\*column%, \*\*row %

COR=Crude odds ratio AOR=Adjusted odds ratio CI=Confidence interval

Table (1) shows that age of the studied elderly ranged from 60 up to 76 years. 91.3% of them were young old, and 51.5% were married females. As for the educational level, 52.3% had completed their basic education, and 47.4% of them had a secondary degree and above. Furthermore, (71%) of them had enough income and the pension was the main source of it, and 45.2% of them lived with their families.

Table (2) shows that 80.1% of studied elderly had a history of chronic diseases such as (hypertension, osteoarthritis and diabetes mellitus). As well 29.5% of them were suffered from COVID-19 infection with mild to moderate symptoms (45.1%, & 36.6% respectively) as (bone ache, fever and loss of smell and taste). Moreover, (47.3%) of studied elderly reported that they had a family members infected with COVID-19 while, (29%) of them reported death of a family member due to COVID-19 infection. As for general health, (53.5%) rated their general health as poor.

Table (3) shows that 31.5% and 43.2% of the studied elderly had severe and moderate fear of COVID-19 respectively. Evermore (75.1% and 19.1%) of them had moderate to high feeling of stress respectively during COVID-19 outbreak. About 38.6 of them were not satisfied with their life. Regarding coping styles used by elderly the study showed that (54.4%) of them used high problem based coping followed by high emotional based coping (31.5%), while high dysfunctional based coping used by 18.3%.

Table (4) shows that 31.5% of studied elderly had severe fear of COVID-19. Determinants of COVID-19 fear according to the results were age, and COVID-19 infection. COVID-19 fear was higher by factor equal to 4.11 in middle old than young old (AOR= 4.11; 95% CI: 1.6-10.6). Also it was higher by factor equal to 2.37 in elderly who not infected with COVID-19 than infected (AOR= 2.37; 95% CI: 1.3-4.2).

Table (5) shows that 19.1% of studied elderly perceived severe stress towards COVID-19. Determinants of feeling with stress according to the results were income,

COVID-19 infection and COVID-19 fear. Feeling with stress was higher by factor equal to 3.08 in elderly with low income (AOR= 3.08; 95% CI: 1.5-6.1). Moreover it was higher by factor equal to 0.45 in elderly infected with COVID-19 than not-infected (AOR= 0.45; 95% CI: 0.22-0.92). It was higher also by factor equal to 0.43 in elderly who had high fear of COVID-19 than elderly with mild or moderate fear (AOR= 0.43; 95% CI: 0.21-0.86).

Table (6) shows that 64.1% of studied elderly were satisfied with their life during COVID-19 pandemic. Determinants of life satisfaction according to the results were perceived stress. As life satisfaction was higher by factor equal to 1.78 in elderly with mild or moderate feeling with stress than elderly with high feeling with stress (AOR= 1.78; 95% CI: 1.8-6.8).

Table (7) shows that 18.3% of studied elderly had high dysfunctional coping strategies during COVID-19 pandemic. Determinants of dysfunctional coping according to the results were sex and COVID-19 fear. Dysfunctional coping was higher by factor equal to 2.74 in elderly males than elderly females (AOR= 2.74; 95% CI: 1.30-5.78). Also, it was higher by factor equal to 5.76 in elderly with severe fear of COVID-19 than elderly with mild to moderate fear (AOR= 5.76; 95% CI: 2.81-11.81).

## Discussion

COVID-19 is a significant threat to elderly life and health, which makes them experience fear, stress, anxiety and mood disorders, which have a negative impact on their daily routines, the care and support they receive, and their ability to stay socially connected which is reflected on their life satisfaction and psychological well-being (WHO. 2020). In this context, special attention should be given to the elderly population during pandemic through identification of factors that affect fear, stress, and life satisfaction of them in order to enhance their quality of life and promote successful aging. So, this study aimed to estimate fear, perceived stress, life

satisfaction, and coping styles among community dwelling older adults during COVID 19 pandemic.

Fear is a protective mechanism for humans, essential to survival; it involves several biological processes aimed at preparing them to respond to potentially dangerous events. However, when it is chronic or unbalanced, it can lead to development of various mental disorders (Garcia, 2017). The results of this study revealed that highest percentage of the studied elderly had moderate to severe fear of COVID-19. This is in congruent with studies done in India and Egypt which reported their studied older adults had a medium-high level of fear post COVID-19 pandemic (Metwally et al., 2021 & Nair et al. 2020). As well as other studies conducted by Satici et al., (2020) and Wang et al., (2020) who found that COVID-19 not only affected people's health and well-being, but also, led to stress, fear and anxiety. This result might be related to fear of elderly of being infected or infection of any loved-one, fear of consequences, worse prognosis of them, long duration of the pandemic and daily deaths especially among them whereas most of them reported presence of many chronic illnesses and had poor health status.

The current study results revealed that fear of COVID-19 was higher in middle old than young old and in elderly not infected with COVID-19 than infected., the study of Metwally et al., (2021) and Torrente et al., (2020) that conducted in Argentina and Egypt respectively who found that those young old groups had a higher level of psychological impact of COVID-19 more than middle elderly. Also, other study conducted by Nair et al., (2020) documented that old-old experienced less fear and stress related to COVID-19 pandemic, more gratitude, and more resilience. This could be attributed to old elderly had many experiences through their lives and more problem solving skills that helped them to cope with different challenges

The fear of COVID-19 is a source of stress that can have a significant impact on

the psychological well-being of individuals; however, different people may experience a mental crisis at different levels Khalid et al., 2016. The results of this study revealed that the majority of the studied elderly had moderate to high feeling of stress. This is in line with an Indian study performed by Nair et al., (2020) which reported that stress levels were moderate in more than half of their respondents. Similar results were obtained in other studies by Chen et al., (2020), El-Zoghby et al., (2020), Gamonal-Limcaoco et al., (2020), Li et al., (2020), Metwally et al., (2021) and Zhang et al., (2020). This may be attributed to changes in everyday life caused by the pandemic which is considered new experience for them which cause lack of social support due to strict isolation, fear of infection from other people, and strict following of protective measures. Plus elderly people in this study had many chronic illnesses which make them more stressful about their health especially such virus haven't treatment until now.

The results showed that perceived stress was higher in elderly with low income, with previous COVID-19 infection, and who had severe fear of COVID. Likely a study done in china by Zhang et al., (2020) reported that stress increased in people with low income. Similarly Xiao et al., (2020) reported fear of the unknown can lead to the development of mental disorders, stress, anxiety, depression as well as adverse behaviors. In addition a Turkish study conducted by Satici et al., (2020) showed that fear of COVID-19 was positively associated with stress and anxiety. Moreover, several other studies supported the study results which reported that more than quarter of the general population who had moderate to severe symptoms experienced more stress and anxiety during the coronavirus pandemic Ahorsu et al., 2020, Fardin, 2020, Qiu et al., 2020 and Wang et al., 2020).

Life satisfaction for elderly affected by level of stress. The present result indicated that less than two thirds of the studied elderly were satisfied with their life during COVID 19 pandemic, and life

satisfaction was higher in elderly with mild to moderate level of perceived stress. This is congruent with a study done in Poland and Germany by **Bluma et al., (2020)** and a study done by **Bacon et al., (2020)** in United Kingdom who reported that older people rated their quality of life and life satisfaction higher than young people during pandemic. On the other hand these results are inconsistent with the result of Turkish study done by **Satici et al., (2020)**, who showed that COVID 19 pandemic reduced life satisfaction. This result may explained by most of the studied elderly were married, educated, had enough income from pension, and living within their families which give them sense of security, source of social support, and chance to look after their grandchildren (while the nurseries, kindergartens, and schools were closed) which enhance their life satisfaction, In addition, Egyptian elders culture and religion make them thank Allah for everything inspite of they experienced many crises throughout their lives.

Older adults vary in their ability to access and use coping strategies amid the pandemic. The present study revealed that more than half of the studied elderly had high problem focused coping, followed by moderate emotional based coping, and moderate dysfunctional coping which considers a maladaptive coping strategy that higher in males who had severe fear of COVID. Also the common coping strategies used by the studied elderly were religion, followed by use of instrumental support, and acceptance while the least coping strategy used was substance use. These results are consistent with **Aldwin & Igarashi (2012)** who reported there are various coping strategies are not mutually exclusive, and participants often reported using more than one concurrently or sequentially. In the same line **Finlay et al. (2021)** and **Taylor & Carr (2021)** suggested that older adults are more resilient than younger adults, including higher problem-solving approaches and emotional regulation to cope with adversity. These finding may be due to all coping strategies may be reciprocally used

according to situation. As, problem-focused coping strategy may be effective during pandemic through plan of action by following of preventive measures, while dysfunctional coping strategies would be more effective in an unchangeable situation and sometimes, the use of strategies to regulate the emotional state associated with stress (emotion-focused coping strategy) become more appropriate. On the contrary a study carried out in USA and Canada by **Clair et al., (2021)** and **Galica et al., (2021)** respectively reported that elderly had a higher substance use, instrumental and emotional support was the most coping strategy, during pandemic. These study results may be due to Egyptian religion and culture and many challenges and experiences the elderly face during their life all of these factors helped them to use problem focused coping followed by emotional coping strategies and dysfunctional coping.

### **Conclusion**

Based on the findings of this study highest percentage of studied elderly had moderate to severe feeling of fear and stress of COVID-19 infection. Severe fear was higher with age, no previous infection. While high stress was higher in elderly had severe fear of COVID-19, low income and previous infection. Moreover, highest percentage of them were satisfied with their life and used high problem focused coping, followed by moderate emotional, and dysfunctional based coping styles.

### **Recommendations**

The following recommendations are suggested:

- Promote elderly awareness about how to avoid COVID-19 infection and how to cope after infection, and provide them with reliable updated news about the pandemic to decrease feeling of fear and stress through all types of media and health teaching sessions.
- Development of psychological counseling to elders about how to deal with feelings of fear and stress through using of different relaxation

techniques as deep breathing exercise, and progressive relaxation.

- Develop regular workshops for elderly to teach them different positive coping mechanisms to enhance their coping strategies to decrease their perceived fear and stress to promote their life satisfaction.

## References

1. Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: development and initial validation. *International journal of mental health and addiction*, 1-9.
2. Aldwin, C. & Igarashi, H. (2012). An ecological model of resilience in late life. *Annual review of gerontology and geriatrics*, 32(1), 115-130.
3. Bacon, A. M., & Corr, P. J. (2020). Coronavirus (COVID-19) in the United Kingdom: A personality-based perspective on concerns and intention to self-isolate. *British Journal of Health Psychology*, 25(4), 839-848.
4. Bayuo, J., & Agbenorku, P. (2018). Coping strategies among nurses in the Burn Intensive Care Unit: A qualitative study. *Burns Open*, 2(1), 47-52.
5. Bluma IP, Bidzan-Bluma, I., Bidzan, M., Jurek, P., Bidzan, L., Knietzsch, J., Stueck, M., & Bidzan, M. (2020). A Polish and German population study of quality of life, well-being, and life satisfaction in older adults during the COVID-19 pandemic. *Front. Psychiatry* 11:585813. doi: 10.3389/fpsy.2020.585813.
6. Boulos, M. N., & Geraghty, E. M. (2020). Geographical tracking and mapping of coronavirus disease COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: how 21st century GIS technologies are supporting the global fight against outbreaks and epidemics. *International journal of health geographics*, 19(1), 1-12.
7. Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief cope. *International journal of behavioral medicine*, 4(1), 92-100.
8. Chen G, Wu Q, Jiang H, Zhang H, Peng J, Hu J, Chen M, Zhong Y & Xie C (2020) Fear of disease progression and psychological stress in cancer patients under the outbreak of COVID-19. *Psychooncology* 29:1395–1398.
9. Clair, R., Gordon, M., Kroon, M., & Reilly, C. (2021). The effects of social isolation on well-being and life satisfaction during pandemic. *Humanities and Social Sciences Communications*, 8(1), 1-6.
10. Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of health and social behavior*, 385-396.
11. Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
12. El-Zoghby, S. M., Soltan, E. M., & Salama, H. M. (2020). Impact of the COVID-19 Pandemic on Mental Health and Social Support among Adult Egyptians. *Journal of Community Health*, 2020; 1(14): 236-246.
13. Fardin, M A. (2020). COVID-19 and Anxiety: A Review of Psychological Impacts of Infectious Disease Outbreaks, *Archives of Clinical Infectious Diseases*, Online ahead of Print ; 15(COVID-19):e102779.
14. Finlay, J. M., Kler, J. S., O'shea, B. Q., Eastman, M. R., Vinson, Y. R., & Kobayashi, L. C. (2021). Coping during the COVID-19 pandemic: a qualitative study of older adults across the United States. *Frontiers in Public Health*, 9.

15. Galica, J., Liu, Z., Kain, D., Merchant, S., Booth, C., Koven, R., & Haase, K. R. (2021). Coping during COVID-19: a mixed methods study of older cancer survivors. *Supportive Care in Cancer*, 29(6), 3389-3398.
16. Gamonal-Limcaoco, S., Montero Mateos, E., Fernandez, J. & Roncero, C. (2020). Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic, March 2020. Preliminary results, medRxiv .
17. Garcia R. (2017). Neurobiology of fear and specific phobias. *Learning & Memory*, 24(9), 462–471.
18. Guterres, A. (2020). Secretary-General’s policy brief: The impact of COVID-19 on older persons. United Nations, 2020-05.
19. Ho, C. S., Chee, C. Y., & Ho, R. C. (2020). Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Ann Acad Med Singapore*, 49(1), 1-3.
20. Khalid, I., Khalid, T. J., Qabajah, M. R., Barnard, A. G., & Qushmaq, I. A. (2016). Healthcare Workers Emotions, Perceived Stressors and Coping Strategies During a MERS-CoV Outbreak. *Clinical Medicine & Research*, 14(1), 7–14.
21. Li, S., Wang, Y., Xue, J., Zhao, N., & Zhu, T. (2020). The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. *International journal of environmental research and public health*, 17(6), 2032.
22. Metwally, M., Mousa, A. E. G., Mohammed H, M., & Ahmed Mohsen, H. (2021). Post-traumatic Stress Symptoms, Fear, and Health-Related Quality of Life among Community Dwelling Older Adults during COVID-19 Pandemic in Alexandria, Egypt. *Egyptian Journal of Health Care*, 12(2), 314-331.
23. Nair, D. R., Rajmohan, V., & Raghuram, T. M. (2020). Impact of COVID-19 lockdown on lifestyle and psychosocial stress-an online survey. *Kerala Journal of Psychiatry*, 33(1), 5-15.
24. Nikolich-Zugich, J., Knox, K. S., Rios, C. T., Natt, B., Bhattacharya, D. and Fain, M. J. (2020). SARS-CoV-2 and COVID-19 in older adults: what we may expect regarding pathogenesis, immune responses, and outcomes. *GeroScience* <https://doi.org/10.1007/s11357-020-00186-0>.
25. Perrotta, F., Corbi, G., Mazzeo, G., Boccia, M., Aronne, L., D’Agnano, V. & Bianco, A. COVID-19 and the elderly: insights into pathogenesis and clinical decision-making. *Aging clinical and Experimental Research*, 2020; 49(22):1-10.
26. Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *General psychiatry*, 33(2).
27. Santarnecchi, E., Sprugnoli, G., Tatti, E., Mencarelli, L., Neri, F., Momi, D., & Rossi, A. (2018). Brain functional connectivity correlates of coping styles. *Cognitive, Affective, & Behavioral Neuroscience*, 18(3), 495-508.
28. Satici, B., Gocet-Tekin, E., Deniz, M. E., & Satici, S. A. (2020). Adaptation of the Fear of COVID-19 Scale: Its Association with Psychological Distress and Life Satisfaction in Turkey. *International Journal of Mental Health and Addiction*, 1–9. Advance online publication.
29. Tahara, M., Mashizume, Y., & Takahashi, K. (2021). Coping mechanisms: Exploring strategies utilized by Japanese healthcare workers to reduce stress and improve mental health during the COVID-19

- pandemic. *International journal of environmental research and public health*, 18(1), 131.
30. Taylor, M. G., & Carr, D. (2021). Psychological resilience and health among older adults: a comparison of personal resources. *The Journals of Gerontology: Series B*, 76(6), 1241-1250.
31. Torrente, F., Yoris, A., Low, D. M., Lopez, P., Bekinshtein, P., Manes, F., & Cetkovich, M. (2021). Sooner than you think: A very early affective reaction to the COVID-19 pandemic and quarantine in Argentina. *Journal of affective disorders*, 282, 495-503.
32. Venkatesh, A., & *Edirappuli*, S. (2020). Social distancing in COVID-19: what are the mental health implications? *Bmj*, 369.
33. Verity, R., Okell, L. C., Dorigatti, I., Winskill, P., Whittaker, C., Imai, N., ... & Ferguson, N. M. (2020). Estimates of the severity of coronavirus disease 2019: a model-based analysis. *The Lancet infectious diseases*, 20(6), 669-677.
34. Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. *International Journal of Environmental Research and Public Health*, 17(5), 1729.
35. World Health Organization (WHO) (2020). Health care considerations for older people during COVID-19 pandemic. Consulted via <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-COVID-19/technical-guidance/health-care-considerations-for-older-people-during-COVID-19-pandemic> on August 26 2020.
36. Xiao, H., Zhang, Y., Kong, D., Li, S., & Yang, N (2020). Social Capital and Sleep Quality in Individuals Who Self-Isolated for 14 Days during the Coronavirus Disease 2019 (COVID-19) Outbreak in January 2020 in China. *Medical Science Monitor*, 26, e923921.
37. Ye, Q., Wang, B., Mao, J., Fu, J., Shang, S., Shu, Q., & Zhang, T (2020). Epidemiological analysis of COVID-19 and practical experience from China. *Journal of Medical Virology*, 92(7), 755-769. <https://doi.org/10.1002/jmv.25813>.
38. Zen El-Abdeen, M., Abd Elhameed, S. & Hassaneen, A (2018). Stresses self-assessment among community dwelling older adults. *Mansoura Nursing Journal*, 5(1), 68-85. DOI:10.21608/MNJ.2018.150610.
39. Zhang, Y., & Ma, Z. F. (2020). Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. *International journal of environmental research and public health*, 17(7), 2381.