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# Psychological distress and coping skills used by individuals in the crisis caused by the COVID-19 pandemic

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## Abstract:

**BACKGROUND:** Psychological distress, as a key indicator, describes a person's emotional problems and psychological reactions to adapt to the environment. This study aimed to investigate the relationship between psychological distress and coping strategies used by individuals during the crisis caused by COVID-19.

**MATERIALS AND METHODS:** The current research is an analytical cross-sectional study that was designed in 2021. The sampling area included the three cities of Lar, Gerash, and Evaz in the south of Fars province in the south of Iran. The study population was the residents of these three cities during the COVID-19 pandemic. The final sample size in the present study was 384 people. Individuals were selected through available sampling. By answering questions from the self-assessment system of COVID-19 disease, the Ministry of Health and Medical Education filled out the necessary information for individual screening and registration of the symptoms of COVID-19 disease. Then, they completed the Coping Methods Questionnaire and the Psychological Distress Questionnaire.

**RESULTS:** The mean age of the participants was 40.90 years. One hundred sixty-seven (43.5%) participants were male, and 217 (56.5%) were female. The mean score of problem-oriented coping style was significantly different between the levels of education ( $P = 0.001$ ). The mean score of problem-solving coping style for the participants suspected of being infected with COVID-19 was 6.18 scores lower than others, and the difference was statistically significant ( $P = 0.001$ ). Multiple regression with a forward selection also showed that among the studied variables, age, problem-oriented, and emotion-oriented coping strategies were important variables affecting mental distress.

**CONCLUSION:** People who were not suspected of having COVID-19 symptoms had a higher mean problem-oriented coping score than those who were suspected of having COVID-19. Therefore, early identification of suspects and the implementation of counseling and training programs can be very effective.

## Keywords:

Coping strategy, COVID-19, psychological distress

## Introduction

The COVID-19 outbreak was confirmed on December 8, 2019, in Wuhan, China, and at the end of January 2020, the World Health Organization declared that the COVID-19 outbreak is an international concern.<sup>[1,2]</sup> Iran is one of the countries affected by this disease, and immediately

after its outbreak in Iran, the control of the disease became one of the main concerns of the Ministry of Health and Medical Education in Iran.<sup>[3]</sup> Because people face life-threatening conditions during a pandemic of diseases such as COVID-19, they will experience a number of negative psychological reactions, such as depression and anxiety;<sup>[4,5]</sup> also, the psychological

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distress experienced by people in such critical situations can increase demand for healthcare services.<sup>[5,6]</sup> Psychological distress is the emotional distress caused by a real or perceived physical or psychological threat that a person experiences. Psychological distress, as a key indicator, describes a person's emotional problems and psychological reactions to adapt to the environment and can negatively affect a person's ability to work-family life, and well-being.<sup>[7]</sup> According to research in this regard, people with COVID-19 may experience psychological distress.<sup>[8]</sup> A review of studies on the psychological effects of COVID-19 shows that individuals experience a number of negative psychological effects during the COVID-19 crisis, such as posttraumatic stress disorder, anxiety, depression, fear, anger, and confusion.<sup>[8-10]</sup> Among these, according to research, the type of adaptation methods used by individuals in critical situations play an important role in modifying or exacerbating the effects of psychological distress experienced by individuals.<sup>[2]</sup> Therefore, it can be said that the coping methods used by individuals during the crisis caused by COVID-19 can affect the mental health of individuals.<sup>[11]</sup> Coping skills refers to the way people consciously deal with difficulties and try to overcome them.<sup>[12]</sup> Having an effective set of coping skills increases a person's sense of self-control and self-direction, so the better a person's resources for coping, the less likely he/she is to fall into situations that he/she is vulnerable to.<sup>[13,14]</sup> In general, coping skills can be divided into two categories: efficient (useful) and inefficient. Effective coping skills maintain the mental health of people in critical situations; on the other hand, negative coping skills can have devastating psychological consequences.<sup>[14,15]</sup> Since few studies have been conducted on psychological distress and the type of coping strategies used by individuals in the crisis caused by COVID-19, this study aimed to investigate the relationship between psychological distress and coping strategies used by individuals under the crisis caused by COVID-19.

## Materials and Methods

### Study design and setting

The current research is an analytical cross-sectional study that was designed in 2021. The sampling area included the three cities of Lar, Gerash, and Evaz in the south of Fars province in the south of Iran. The study population was the residents of these three cities during the COVID-19 pandemic. The research samples were also people who went to comprehensive health centers to receive health-care services. For this study, a sample size of 384 people was calculated.

### Study participants and sampling

After obtaining the necessary permits, the researcher first considered these three cities as clusters through cluster

sampling; then, among the comprehensive health centers of each city, three centers were selected through simple random sampling, and in the final stage, samples were selected through accessible sampling. Inclusion criteria were being willing to participate in the study, having a smartphone to send the link to the online questionnaire, and being a resident of Lar, Evaz, and Gerash cities. Exclusion criteria included the participants who did not complete the questionnaires completely and those who were not willing to continue the study.

### Data collection and analysis

Then, the participants with the inclusion criteria filled out a questionnaire designed by the researchers, including demographic information about gender, age, and level of education. Moreover, by answering questions from the self-assessment system of COVID-19 disease, the Ministry of Health and Medical Education (<https://salamat.gov.ir/>) filled out the necessary information for individual screening and registration of the symptoms of COVID-19 disease (fever, chills, cough, sore throat, loss of sense of smell, loss of sense of taste). The samples were also asked to identify if they themselves or one of their relatives were suspected of COVID-19. Then, they completed the Coping Methods Questionnaire and the Psychological Distress Questionnaire.

The coping style questionnaire was prepared by Folkman and Lazarus and named Ways of Coping Questionnaire; it contains 66 questions.<sup>[16]</sup> It is scored based on a 4-point Likert scale (0 to 3). This test divides eight coping methods into two categories: problem-oriented and emotion-oriented. Problem-oriented practices include seeking social support, accountability, planned problem-solving, and positive reassessment. Emotion-based coping strategies include confrontation, avoidance, escape avoidance, and self-control. The validity and reliability of this questionnaire have been confirmed in Iran.<sup>[17]</sup>

The Kessler Psychological Distress Scale (k-10) with 10 items was also used in this study.<sup>[18]</sup> The questions of this questionnaire are like-minded (are scored on a 4-point style ranging from never to forever and scored from 0 to 4). The maximum score in this questionnaire is 40. This questionnaire does not target a specific mental disorder but generally identifies the level of anxiety and depressive symptoms that a person has experienced over the past few weeks. According to a study conducted in Iran, this questionnaire also has good validity and reliability.<sup>[19]</sup> In this study, according to the conditions of COVID-19 in the country, online questionnaires (made on the Google Form page) were used. The individuals were provided with a link through social networks and email. At the beginning of the questionnaire, the participants gave their informed consent to complete

the questionnaire and participate in the research. The researchers tried to keep the information confidential at all stages of the study. All methods and implementation of the study were carried out in accordance with the Declaration of Helsinki.

**Statistics analysis**

After collecting the data, it was entered into the statistical software SPSS version 25. Frequency (percentage) and mean (standard deviation) were used to report descriptive statistics. Also, independent *t*-test, Pearson’s correlation coefficient and multiple linear regression were used to report analytical statistics. A significance level of 0.05 was considered.

**Ethical consideration**

The research was approved by the ethics committee of Larestan University of Medical Sciences (IR. LARUMS. REC.1400.006). In addition, the questionnaires were anonymous, and informed written consent was obtained from all participants. Also, the participants were allowed to leave the study at any stage without any consequences. The researchers tried to keep the information confidential at all stages of the study.

**Results**

Totally, 384 residents from three cities (Lar, Gerash, and Evaz) of Fars province of Iran participated in this study; the subjects were living in these cities during the COVID-19 pandemic. The mean age of the participants was 40.90 years, with a standard deviation of 13.99 years. Also, 167 (43.5%) participants were male and 217 (56.5%) female. The characteristics of the participants in the study are shown in Table 1.

According to the results shown in Table 1, 56.5% of the participants were female, and also the majority of them had a diploma (45.3%). Also, 33 (8.6%) of the participants in the study had one of the symptoms of COVID-19. Among the symptoms, cough was reported more than other symptoms. Also, 28 (7.3%) participants were suspected of being infected with COVID-19. According to Table 1, 44 (11.5%) participants reported that there was at least one of their family suspected of infection with COVID-19.

Tables 2 and 3 display the comparison of the mean scores of problem-oriented coping style and emotion-coping style between gender groups, education, symptoms of infection with COVID-19, and the suspicion of being infected with COVID-19 in one of the family members.

As the results show, the mean score of problem-oriented coping style in men was 0.81% higher than in women, but this difference was not statistically significant (*P* = 0.811).

**Table 1: Descriptive statistics of the study participants**

Variable	Category	Frequency	Percentage
Gender	Female	217	56.5
	Male	167	43.5
Education	Under diploma education	97	25.3
	Diploma education	174	45.3
	College education	113	29.4
COVID symptoms	None	351	91.4
	Fever	2	0.5
	Shivering	1	0.3
	Cough	19	4.9
	Sore throat	3	0.8
	Loss of sense of smell	6	1.6
	Loss of taste	2	0.5
Suspicion of being infected with COVID-19	Yes	28	7.3
	No	356	92.7
Suspicion of being infected with COVID-19 in family members	Yes	44	11.5
	No	340	88.5

**Table 2: Comparison of the mean scores of problem-oriented coping strategies between gender groups, education, symptoms of infection with COVID-19, and the suspicion of being infected with COVID-19 in one of the family members**

Variable	Category	Mean	SD	P
Gender	Female	31.59	10.28	0.811
	Male	32.4	9.54	
Education	Under diploma education	29.39	9.56	0.001*
	Diploma education	31.70	8.30	
	College education	34.5	11.92	
COVID symptoms	None	32.37	9.8	0.069
	Fever	20	7.07	
	shivering	15	-	
	Cough	30.11	10.72	
	Sore throat	29.67	3.05	
	Loss of sense of smell	24.67	13.37	
	Loss of taste	20.5	3.54	
Suspicion of being infected with COVID-19	Yes	27.91	9.65	0.004*
	No	32.64	9.89	
Suspicion of being infected with COVID-19 in family members	Yes	26.21	10.29	0.001*
	No	32.39	9.8	

\*Statistically significant

The mean score of problem-oriented coping style was significantly different between the levels of education (*P* = 0.001); also, the mean score of those with college education was higher than those with a diploma (score = 2.8). Also, the mean score was higher than those with an education level under diploma by 5.11 score. The results of *post hoc* Bonferroni test showed that the difference between the mean score of problem-oriented coping style between the level of university education and those with under diploma

**Table 3: Comparison of the mean scores of emotion-oriented coping strategies based on gender, education, symptoms of suspicion of being infected with COVID-19, and the suspicion of being infected with COVID-19 in family members**

Variable	Category	Mean	SD	P
Gender	Female	41.41	8.36	0.46
	Male	41.87	7.82	
Education	Under Diploma Education	45.18	7.44	<0.001*
	Diploma Education	42.29	6.97	
	College Education	37.51	8.62	
COVID-19 symptoms	None	41.13	8.07	0.01*
	Fever	47.5	4.95	
	Shivering	51	-	
	Cough	47.37	8.18	
	Sore throat	48	4.58	
	Loss of sense of smell	45.33	6.74	
Suspicion of being infected with COVID-19	Yes	44.89	7.89	0.004*
	No	41.19	8.07	
Suspicion of being infected with COVID-19 in family members	Yes	48.32	7.19	<0.001*
	No	41.09	7.96	

\*Statistically significant

education was significant ( $P = 0.001$ ). The mean score of problem-solving coping was higher for people with no symptoms of COVID-19 than those who had at least one of the symptoms, but this difference was not statistically significant ( $P = 0.069$ ). The mean score of problem-solving coping style for the participants suspected of being infected with COVID-19 was 6.18 scores lower than others, and the difference was statistically significant ( $P = 0.001$ ). The mean score of problem-oriented coping style for the participants who reported that at least one of their family was suspected of being infected with COVID-19 was 4.73, scores lower than others, and this difference was statistically significant ( $P = 0.004$ ).

Also, the correlation between age and problem-oriented coping strategies was 0.224, showing that with increase in age, the score of problem-oriented coping strategy also increased; however, this correlation was low.

The mean score of emotion-oriented strategies in men was 0.46 score higher than in women, but this difference was not statistically significant ( $P = 0.46$ ). Also, the mean score of emotion-oriented strategies was significantly different among those with different levels of education ( $P < 0.001$ ), and that for people with college education was lower than those with a diploma education (4.78 score) and also lower than those with an education level under diploma by 7.67 score). The results of *post hoc* Bonferroni test showed that the difference in the mean scores of emotion-oriented strategies among all categories of education was significant ( $P < 0.05$ ). The mean score of emotion-oriented strategies was lower for people who did not have symptoms of COVID-19 than those who

had at least one of the symptoms, and this difference was statistically significant ( $P = 0.01$ ). The results of *post hoc* Bonferroni test showed that the difference in the mean scores of emotion-oriented strategies among the participants with and without symptoms of COVID-19 was significant ( $P = 0.015$ ). Moreover, the mean scores of emotion-oriented strategies for the participants suspected of infection with COVID-19 were 3.27 scores higher than the others, and the difference was statistically significant ( $P = 0.004$ ). The mean score of emotion-oriented strategies for participants with at least one family member suspected of being infected with COVID-19 was 7.23 scores higher than the others, and this difference was statistically significant ( $P < 0.001$ ). Also, the correlation between age and emotion-oriented strategies was  $-0.132$ , which showed that with an increase in age, the score of emotion-oriented strategies decreased; however, this correlation was weak.

Table 4 shows the comparison of the mean scores of psychological distress based on gender, education, symptoms of suspicion of being infected with COVID-19, and the suspicion of being infected with COVID-19 in family members.

The results displayed in Table 4 show that the mean score of psychological distress in men was 0.71 scores higher than in women, but this difference was not statistically significant ( $P = 0.429$ ). The mean score of psychological distress was significantly different among different levels of education ( $P < 0.001$ ), and that for people with college education was lower than those with a diploma education (2.4 score) and also lower than those with education lower than diploma (6.53 score). The results of *post hoc* Bonferroni test showed that the difference in the



**Table 4: Comparison of the mean scores of psychological distress based on gender, education, symptoms of suspicion of being infected with COVID-19, and the suspicion of being infected with COVID-19 in family members**

Variable	Category	Mean	SD	P
Gender	Female	28.86	8.96	0.429
	Male	29.57	8.27	
Education	Under Diploma Education	32.18	6.25	<0.001*
	Diploma Education	29.78	7.97	
	College Education	25.65	10.20	
COVID symptoms	None	28.89	8.78	0.55
	Fever	35.5	0.71	
	Shivering	35	-	
	Cough	31.47	8.21	
	Sore throat	33.33	2.31	
	Loss of sense of smell	32.67	2.81	
Suspicion of being infected with COVID-19	Yes	33.04	5.77	0.014*
	No	28.87	8.78	
Suspicion of being infected with COVID-19 in family members	Yes	33.02	5.04	0.002*
	No	28.67	8.91	

\*Statistically significant

mean score of psychological distress among all categories of education was significant ( $P < 0.05$ ). The mean score of psychological distress was lower for people who did not have symptoms of COVID-19 than for those with at least one of the symptoms, but this difference was not statistically significant ( $P = 0.55$ ). Further, the mean score of psychological distress for the participants suspected with being infected with COVID-19 was 4.35 scores higher than the others, and the difference was statistically significant ( $P = 0.002$ ). Also, the mean score of psychological distress for the participants who reported that at least one of their family members suspected of being infected with COVID-19 was 4.17 scores higher than the others, and this difference was statistically significant ( $P = 0.002$ ). Also, the correlation between age and psychological distress was  $-0.321$ , which showed that with an increase in age, the score of psychological distress decreased; however, this correlation was low.

Pearson correlation was used to determine the correlation between psychological distress and problem-oriented and emotion-oriented coping strategies; the results are shown in Table 5.

According to the results presented in Table 5, there was a relatively moderate and inverse correlation between problem-oriented coping strategies and psychological distress (0.460), so with an increase in problem-oriented coping score, psychological distress decreased. Also, there was a weak and direct correlation between psychological distress and emotion-oriented coping strategies by 0.151, showing that with an increase in the score of emotion-oriented coping, psychological distress increased, but this relationship was not statistically significant. However, this significance can

**Table 5: Correlation matrix of the variables**

Variable	1	2	3
1. psychological distress	1		
2. problem-oriented coping	-0.460*	1	
3. emotion-oriented coping	0.151*	-0.048	1

\*Statistically significant

be obtained due to the large sample size. Also, the results shown in Table 5 show that there is a very weak and inverse correlation between problem-oriented and emotion-oriented coping strategies, which was not statistically significant ( $P > 0.05$ ). In the next step, to evaluate the effect of the study variables on psychological distress by adjusting the effect of other variables, multiple linear regression was used. The results are shown in Table 6.

As shown in Table 6, by fitting a simple linear regression and considering one variable in each fitting, the effect of age, university education to the under diploma education, suspicion of being infected with COVID-19, suspicion of being infected with COVID-19 in family members and problem-oriented coping strategies and emotion-oriented coping strategies on psychological distress was significant. In the next step, variables with a  $P$  value of less than 0.2 were entered into the multiple model. It was shown that by adjusting the effect of other variables, by increasing one score in problem-oriented coping, the mean score of psychological distress decreased by 0.34 score, and also by adjusting the effect of other variables, by increasing a score in emotion-oriented coping strategies, the mean score of psychological distress increased by 0.1 scores. By adjusting the effect of other variables, with an increase of one year in the age of the individual, the mean score of psychological

**Table 6: The results of multiple linear regression model for assessing the effect of age, gender, education, symptoms of suspicion of being infected with COVID-19, and the suspicion of being infected with COVID-19 in family members, problem-oriented coping, and emotion-oriented coping on psychological distress**

Variable	Simple linear regression			Multiple Linear regression <sup>A</sup>			Multiple regression forward		
	B	95% CI	P	B	95% CI	P	B	95% CI	P
Age	-0.198	(-0.26,-0.19)	<0.001*	-0.086	(-0.15,-0.03)	0.006*	-0.128	(-0.18,-0.07)	<0.001*
Gender (reference=male)	-0.707	(-2.46,1.05)	0.429	-	-	-	-	-	-
Education (collage to under diploma)	-4.99	(-6.83,-3.15)	<0.001*	-3.56	(-6.06,-1.07)	0.005*	-	-	-
Education (collage to diploma)	1.12	(-0.625,2.86)	0.202	-0.76	(-2.6,1.12)	0.429	-	-	-
Suspicion of being infected with COVID-19 (yes=reference)	-4.17	(-7.49,-0.85)	0.014*	0.42	(-0.34,0.28)	0.167	-	-	-
Suspicion of being infected with COVID-19 in family members (yes=reference)	-4.35	(-7.02,-1.65)	0.002*	-5.2	(-9.34,-1.17)	0.014*	-	-	-
Problem-oriented coping style	-0.40	(-0.48,-0.35)	<0.001*	-0.34	(-0.419,-0.26)	<0.001*	-0.366	(-0.44,-0.29)	<0.001*
Emotion-oriented coping style	0.162	(0.055,0.268)	0.003*	0.1	(0.0001,0.19)	0.043*	0.154	(0.06,0.25)	<0.001*

\*Statistically significant, <sup>A</sup>The variables with  $P < 0.05$  are entered in the model

distress decreased by 0.086 scores. By adjusting the effect of other variables, the mean score of psychological distress in people with no suspicion of being infected with COVID-19 was 5.2 scores less than those with suspicion of being infected with COVID-19.

Multiple regression with forward selection also showed that among the studied variables, age, problem-oriented, and emotion-oriented coping strategies were important variables affecting mental distress. It was shown that with an increase of one year in age, the score of mental distress decreased by 0.128, and by an increase of one score in the problem-oriented strategies, the mean score of psychological distress decreased by 0.366; also, with an increase of a score in the emotion-oriented coping strategies, the mean score of mental distress increased by 0.154

## Discussion

There is a growing concern today that the COVID-19 crisis may have long-term effects on mental health throughout the society, especially among people with pre-existing mental health conditions.<sup>[20]</sup> The results of the present study showed that by an increase of a score in problem-oriented coping strategies, the mean score of mental distress decreased by 0.34 points; also, by an increase of a score in the face of emotion-style coping, the mean score of mental distress increased by 0.1 points. By adjusting the effect of other variables, with an increase of one year in the age of the individual, the mean score of mental distress decreased by 0.86 points. By adjusting the effect of other variables, people who did not have relatives suspected of having COVID-19 had a mean score of 5.2 points less distress than those who had relatives suspected of having COVID-19. On the other hand, people with university education had a score of 4.99 lower than their undergraduate peers, which was quite significant in terms of statistics. Also, the results

of the present study showed that age, problem-oriented coping, and emotion-oriented strategies were important variables. They are on mental distress, so with an increase of 1 year of age, the score of mental distress decreased by 0.128 points, and by an increase of one score in the face of problem-oriented strategies, the mean score of mental distress decreased by 0.366 points. Moreover, by increasing a score in the emotion-focused style, the mean score of mental distress increased by 0.154 points. A meta-analysis study showed that the prevalence of psychological distress among the people affected by COVID-19 was about 13.29%.<sup>[21]</sup> Another study in Italy during the COVID-19 pandemic showed that the prevalence of mental distress was 48.6%, and women had a significantly higher score of mental distress than men; also, people with a university education level had lower psychological distress than people with a lower education level. In the same study, it was shown that with an increase in age, the score of psychological distress also decreased to a large extent.<sup>[22]</sup> Felice Iasevoli's study showed that the level of distress perceived by patients with serious mental illness was higher than the general public's perception due to the COVID-19 pandemic and widespread quarantine. On the other hand, the perceived real stress of COVID-19 prevalence and quarantine constraints seems to be a strong predictor and mediator to increase the risk of severe anxiety in patients with serious mental illness.<sup>[23]</sup> Another study in China reported that about 24.9% of students experienced anxiety due to the prevalence of COVID-19. Living in urban areas, living with parents, and having a stable family income were some of the factors that protected the students from anxiety during the COVID-19 outbreak. However, having a relative or acquaintance infected with COVID-19 was a risk factor for experiencing anxiety. COVID-19-related stressors included economic factors, effects on daily life, and delays in education, which were positively correlated with the level of anxiety symptoms of Chinese students during the epidemic, while social

support was negatively related to the level of anxiety experienced by students during this period.<sup>[24]</sup> Another study showed that the prevalence of psychological distress in students during the COVID-19 pandemic was about 26.63%, and people who scored high on both childhood adversity and stressful life experiences over the past year were at risk for mental distress. In contrast, good family performance has been associated with a reduced risk of distress.<sup>[25]</sup> Eisazadeh *et al.* conducted a study to investigate the psychological consequences of people with coronavirus in Iran and reported that psychological consequences such as negative emotions such as fear of death, depression and anxiety, decreased social activity, feelings of fragility on the part of the community, decreased effective communication with family and community, and stigma during the COVID-19 pandemic occurred in participants, Researchers in this study concluded that these complications reduce the quality of life in these patients.<sup>[26]</sup>

### Limitations

Since the study was conducted during the COVID-19 pandemic in 3 cities in the south of Fars province (Iran), the results of this study can be generalized to the study population.

### Conclusion

In general, the results of the present study showed that among the studied variables, age, problem-oriented coping, and emotion-oriented are important variables affecting mental distress. So with increasing one year of age, the score of mental distress decreases by 0.128 points, and by increasing one score in the face of problem-oriented style, the average score of mental distress decreases by 0.366 points, and by increasing a score in the emotion-oriented style, the average score of mental distress increases by 0.154 points. The possibility of psychological distress and its exacerbation during the COVID-19 pandemic seems undeniable. Therefore, early identification of people at risk and implementation of psychological and psychiatric counseling programs for them can reduce complications caused by psychological distress. Also, holding training sessions during a pandemic through official and public media such as television, radio, and official social networks for the general public can be very effective in reducing the score of psychological distress.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will

be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

The authors declare that there is no conflict of interests.

### References

1. Lu H, Stratton CW, Tang YW. Outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. *J Med Virol* 2020;92:401-2.
2. Yu H, Li M, Li Z, Xiang W, Yuan Y, Liu Y, *et al.* Coping style, social support and psychological distress in the general Chinese population in the early stages of the COVID-19 epidemic. *BMC Psychiatry* 2020;20:426.
3. Abdi M. Coronavirus disease 2019 (covid-19) outbreak in Iran: Actions and problems. *Infect Control Hosp Epidemiol* 2020;41:754-5.
4. Druss BG. Addressing the COVID-19 pandemic in populations with serious mental illness. *JAMA Psychiatry* 2020;77:891-2.
5. Kontoangelos K, Economou M, Papageorgiou C. Mental health effects of COVID-19 pandemic: A review of clinical and psychological traits. *Psychiatry Investig* 2020;17:491-505.
6. Cullen W, Gulati G, Kelly BD. Mental health in the covid-19 pandemic. *QJM* 2020;113:311-2.
7. Park SC, Park YC. Mental health care measures in response to the 2019 novel coronavirus outbreak in Korea. *Psychiatry Investig* 2020;17:85-6.
8. Alizadeh A, Khankeh HR, Barati M, Ahmadi Y, Hadian A, Azizi M. Psychological distress among Iranian health-care providers exposed to coronavirus disease 2019 (COVID-19): A qualitative study. *BMC Psychiatry* 2020;20:494.
9. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, *et al.* The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet* 2020;395:912-920.
10. Sun N, Wei L, Shi S, Jiao D, Song R, Ma L, *et al.* A qualitative study on the psychological experience of caregivers of covid-19 patients. *Am J Infect Control* 2020;48:592-8.
11. Dawson DL, Golijani-Moghaddam N. Covid-19: Psychological flexibility, coping, mental health, and wellbeing in the UK during the pandemic. *J Contextual Behav Sci* 2020;17:126-34.
12. de Boer SF, Buwalda B, Koolhaas JM. Untangling the neurobiology of coping styles in rodents: Towards neural mechanisms underlying individual differences in disease susceptibility. *Neurosci Biobehav Rev* 2017;74:401-22.
13. Heffer T, Willoughby T. A count of coping strategies: A longitudinal study investigating an alternative method to understanding coping and adjustment. *PLoS One* 2017;12:e0186057.
14. Algorani EB, Gupta V. Coping Mechanisms. In: *StatPearls*

- [Internet]. Treasure Island (FL): StatPearls Publishing; 2024. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK559031>. [Last updated on 2023 Apr 24].
15. Compas BE, Jaser SS, Bettis AH, Watson KH, Gruhn MA, Dunbar JP, *et al.* Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychol Bull* 2017;143:939-91.
  16. Folkman S, Lazarus RS. The relationship between coping and emotion: Implications for theory and research. *Soc Sci Med* 1988;26:309-17.
  17. Alipour A, Hashemi T, Babapour J, Tousi F. Relationship between coping strategies and happiness among university students. *Journal of Modern Psychological Researches* 2010;5:71-86.
  18. Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, *et al.* Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol Med* 2002;32:959-76.
  19. Yaghubi H. Psychometric properties of the 10 questions version of the kessler psychological distress scale (K-10). *Applied Psychological Research Quarterly* 2016;6:45-57.
  20. Daly M, Robinson E. Psychological distress and adaptation to the covid-19 crisis in the United States. *J Psychiatr Res* 2021;136:603-9.
  21. Cénat JM, Blais-Rochette C, Kokou-Kpolou CK, Noorishad PG, Mukunzi JN, McIntee SE, *et al.* Prevalence of symptoms of depression, anxiety, insomnia, posttraumatic stress disorder, and psychological distress among populations affected by the COVID-19 pandemic: A systematic review and meta-analysis. *Psychiatry Res* 2021;295:113599.
  22. Bonati M, Campi R, Zanetti M, Cartabia M, Scarpellini F, Clavenna A, *et al.* Psychological distress among Italians during the 2019 coronavirus disease (COVID-19) quarantine. *BMC Psychiatry* 2021;21:20.
  23. Iasevoli F, Fornaro M, D'Urso G, Galletta D, Casella C, Paternoster M, *et al.* Psychological distress in patients with serious mental illness during the covid-19 outbreak and one-month mass quarantine in Italy. *Psychol Med* 2021;51:1054-6.
  24. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, *et al.* The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res* 2020;287:112934.
  25. Lai AY, Sit SM, Lai TT, Wang MP, Kong CH, Cheuk JY, *et al.* Facemask wearing among Chinese international students from Hong Kong studying in United Kingdom universities during covid-19: A Mixed Method Study. *Front Psychiatry* 2021;12:673531.
  26. Eisazadeh F, Aliakbari Dehkordi M, Aghajanbigloo S. Psychological consequences of patients with coronavirus (COVID-19): A Qualitative Study. *Biquarterly Iranian Journal of Health Psychology* 2020;2:9-20.