Stress, Anxiety, and Depression Symptoms in a Population Sample in The Initial Stage of The Coronavirus (COVID-19) Pandemic Outbreak

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ABSTRACT

Context: Changes in everyday life have been rapid and drastic, with the virus surge outbreaks, the death rate escalating, and stringent steps to control the disease spread increasing across regions of the world. While significant attention has been paid to efforts to diagnose people with the coronavirus infection, recognizing the mental health needs of people affected by this pandemic has been ignored relatively. The psychological impact of the Coronavirus Disease 2019 (COVID-19) outbreak and lockdown measures on the Egyptian population are unknown.
Aim: This study assesses levels of stress, anxiety, and depression symptoms in a population sample in the initial stage of the coronavirus pandemic (COVID-19) outbreak and explores its related potential risk factors.
Methods: A cross-sectional design used to conduct the study on a convenience sample of 1010 subjects residing at Benha City, Qalyubiyah Governorate, Egypt. The tool utilized in this study consists of two parts: Self-administered questionnaire, which was designed to assess people's socio-demographic and family data, and Depression, Anxiety, and Stress Scale (DASS) that measure the symptoms of the emotional state of depression, anxiety, and stress.
Results: The result reveals a mean of total stress scale as 15.44±3.62, mean of total anxiety scale as 13.56±3.74, and mean of total depression scale as 12.41±3.86. There was a high statistically significant positive correlation between anxiety, stress, and depression at p-value <0.01.
Conclusion: This study concluded that more than two-thirds of the studied population suffered from a moderate level of stress, less than two-thirds of the studied population suffered from moderate anxiety, while around one-tenth of them were normal, and more than one-third of the studied population suffered from a moderate level of depression, while one-fifth of them were normal. The current result revealed that age (year), marital status, having children, educational level, income, and occupation were predictors of stress, anxiety, and depression. The study suggested the need for additional research on predictive factors affecting people's stress in the era of COVID-19 outbreak and carried out psychological intervention activities through various mediums to help people become more resilient during the COVID-19 epidemic.

Keywords: Anxiety, COVID-19, depression, outbreak, stress

1. Introduction

A new coronavirus pneumonia outbreak occurred in Wuhan, Hubei Province, China, in December 2019. In early 2020 the latest coronavirus disease (COVID-19) started spreading across China. This rapid rise in confirmed cases and deaths has caused stress, anxiety, and depression in both medical staff and the general population (*Bai et al., 2020*; *CDC COVID-19 Response Team, 2020)*. The time span following the onset of symptoms is classically around five days but may range from two days to two weeks. As the last second week of May 2020, more than 4.35 million cases have been reported across 185 countries and territories, more than 1.55 million people have recovered and more than 297,000 deaths(*World Health Organization, 2020*).

Changes in everyday life have been rapid and drastic, with the virus surge outbreaks, the death rate escalating, and stringent steps to control the disease spread increasing across regions of the world. While significant attention has been paid to efforts to diagnose people with the coronavirus infection, recognizing the mental health needs of people affected by this pandemic has been ignored relatively *(Campbell, 2020)*.

Coronaviruses are a family of viruses able to cause disease. Common signs and symptoms of coronavirus disease 2019 (COVID-19), include fever, dry cough, and tiredness. Less common symptoms include sore throat, aches and pains, headache, diarrhea, loss of taste or smell, conjunctivitis, a rash on the skin, or discoloration of fingers or toes, and severe symptoms including pain or pressure in the chest, shortness or difficulty of breathing, and loss of speech or movement. Other less common symptoms have been reported, such as rash, nausea, and vomiting *(WHO, 2020a)*.

While there is no vaccine to prevent COVID-19, WHO, and the Centers for Disease Control and Prevention, recommend specific measures to reduce the risk of infection *(WHO, 2020b; CDC, 2020)*. These measures include staying at home as quarantine to encourage people's social distance to stop COVID-19 from spreading. Social connection is a much more significant challenge than possible *(Frank et al., 2020)*. When isolating from others, people tend to focus more on their thoughts, stresses, and challenges for all ages, especially women as a fear on the

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all family, either pregnant women fear for the fetus or mother women fear for the children. Women with children in the academic levels now doing their schoolwork and researches at home, another pressure has been added for parents, the change is no easier on the students who are adjusting to learning in a new way, cabin fever, lack of fresh air and being confined to the house can increase tensions *(Zhou et al., 2020; Rajkumar, 2020)*.

The outbreak of coronavirus disease, 2019 (COVID-19), is a frightening time, the people amid a worldwide become pandemic of infectious disease, with cities and even entire countries shutting down. Widespread outbreaks are associated with psychological distress and symptoms of mental illness. It is the hardest thing to handle, fear for people about a disease can be overwhelming and cause intense emotional toll. They may feel overwhelmed by hopelessness, despair, stress, and anxiety *(Bao et al., 2020)*.

Persons who may not have experienced depression and anxiety before quarantine may feel overwhelmed by the lack of contact and physical touch. Physical touch plays a significant role in the development, physical, and mental wellbeing of all ages, but getting it during quarantine is not always possible. This lack of connection can cause anxiety and heighten feelings of depression and stress *(Nelson et al., 2020)*.

2. Significance of the study

As of the evening of May 13, 10,431 confirmed cases of Covid-19 and 556 deaths in Egypt. The 2020 coronavirus pandemic in Egypt is part of an ongoing worldwide coronavirus pandemic. The first case of COVID-19 in Egypt was confirmed on February 14, 2020 (Ministry of Health and Population Egypt *[MOHP], 2020)*. As the coronavirus pandemic rapidly sweeps across the world, it is inducing a considerable degree of fear, worry, depression, anxiety, and concern in the population at large and among certain groups in particular, such as older adults, care providers and people with underlying health conditions. In public mental health terms, the primary psychological impact is elevating the rates of stress or anxiety. The emerging pandemic coronavirus (COVID-19) is a specific and unusual phenomenon. It can have physical but also psychological effects on people. In this context, most people experience reactions to stress, anxiety, and depression *(Campbell, 2020)*.

High levels of stress, anxiety, and depression are expected in the aftermath of stay-at-home, as isolation can contribute to or intensify psychological problems. There are, however, no academic studies exploring the psychological effect of COVID-19 on the general population in Egypt. Therefore, the current study represents the first psychological health survey impact conducted in the general population at a city in Egypt within the first month of the COVID-19 outbreak. This study aims to assess the stress, anxiety, and depression symptoms in a population sample in the initial stage of the coronavirus pandemic (COVID-19) outbreak and explores its related

potential risk factors. The expected finding may help government agencies, the Ministry of Health, and healthcare professionals safeguard the psychological well-being of the community in the face of COVID-19 outbreak expansion in Egypt.

3. Aim of the study

This study aimed to assess the stress, anxiety, and depression symptoms in a population sample in the initial stage of the coronavirus pandemic (COVID-19) outbreak and explores its related potential risk factors.

3.1. Research questions

- What is the level of stress in a population sample at the initial stage of the COVID-19 outbreak?
- What is the level of anxiety in a population sample at the initial stage of the COVID-19 outbreak?
- What is the level of depression in a population sample at the initial stage of the COVID-19 outbreak?
- Is there a relationship between stress, anxiety, and depression with the socio-demographic data at the initial stage of the COVID-19 outbreak for a population sample?

4. Subjects and Methods

4.1. Research design

A cross-sectional research design was used to conduct the present study. Cross-sectional studies are used to describe the prevailing characteristics that are happening in a population at a certain point in time *(Levin, 2006)*.

4.2. Research Setting

The study was conducted at Benha city because it is the governorate's capital, including many rural and urban areas related to the Qalyubiyah Governorate, Egypt.

4.3. Subjects

A convenience sample used to achieve the aim of this study. It includes 1010 individual of the population in Benha city through Google form spreadsheet, who meet the following inclusion and exclusion the age more than 18 and less than 60 years old, free from physical, mental, chronic disease, free from cognitive disease, free from any type of drug abuse, have not a history of mental illness or drug abuse, and agree to participate in this study.

4.4. Tools of data collection

One tool used in this study; it consists of two parts:

4.4.1. Self-Administered Questionnaire

It developed by the researcher to assess people's socio-demographic and family data. It included two sections: The first section contains welcome by participants, takes the consent to participate in the study, followed by explaining the aim of the study, with inclusion and exclusion criteria, then encourages the participants to participate in the study, by reassuring them that the information is only used for research purpose. The second section includes age, gender,

marital status, having children, no of children, having children in school age, educational level, occupation, and income.

4.4.2. Depression, Anxiety, and Stress Scale (DASS)

The Depression, Anxiety, and Stress Scale adopted from *Lovibond and Lovibond (1995)*. It contains 21 Items. Depression, Anxiety, and Stress Scale (DASS-21) is a set of three self-report scales designed to measure the symptoms of the emotional state of depression, anxiety, and stress. Divided into three subscales, each of the three DASS-21 subscales contains seven items. The depression scale assesses hopelessness, dysphoria, devaluation of life, lack of interest/involvement, self-deprecation, anhedonia, and inertia.

The anxiety scale measures autonomic arousal, skeletal muscle symptoms, subjective experience of anxious affect, and situational anxiety. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses nervous arousal, difficulty relaxing and being easily upset/agitated, irritable/over-reactive, and impatient. The rating scale responses were ranged from (3) applied to me very much or most of the time; (2) applied to me to a considerable degree or a good part of the time; (1) applied to me some of the time or to some degree; and (0) did not apply to me at all.
Scoring system

The responses were categorized with the cutoffs adopted by *Antony et al. (1998)* to categorize stress, anxiety, and depression. Thus, the level of symptoms (extremely severe, severe, moderate, mild, and no symptoms) as follows.

Levels of DASS symptoms	Depression	Anxiety	Stress
Normal (no symptoms)	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

4.5. Procedures

Tools validity: The tools were reviewed for comprehensiveness, appropriateness, and legibility through translated into Arabic and retranslated to English to ascertain the right meaning of its items by three experts in the field of Psychiatric and Mental Health Nursing.

Tools reliability was done by Cronbach's Alpha coefficient test, which revealed 0.85 for the depression section, 0.81 for anxiety section, and 0.80 for the stress section. Item analysis was done to determine the different capabilities of the items. The reliability of DASS was 0.901

Official permission from the Dean of the Faculty of Nursing, Benha University, was received to collect the data after explaining its aim. A pilot study was carried out on 10% (101) based on one-week pilot testing of the studied population to assess the tools clarity, relevance, objectivity, and estimate the time needed for data collection from the questionnaire, besides the assessment of the feasibility of the research process. Those subjects in the pilot study were

excluded from the study sample, and certain modifications were done.

Ethical considerations: Each participant was informed about the purpose and benefits of the study in the first part before starting the questionnaire, where everyone cannot be starting the questionnaire without consent to participate in data collection in the current study. The population was assured that all data would be used for research purposes. Each one was informed of the right to refuse participation or withdraw at any time before completing the questionnaire with no consequences.

Fieldwork: The researcher used the online form to create the survey. It was distributed in three groups for Benha City as Benha fans, Banha Elasal, and Benha News. After that, the researcher shared the link to the participants to gather the data. All the participants' responses were gathered in an online spreadsheet to assess depression, anxiety, and stress symptoms. The first section of the survey welcomes participants, followed by explain the aim of the study as well as explain inclusion and exclusion criteria and an instruction that all participants need to answer every one of the inquiries. The length of time for answering this survey is between 5-7 minutes per participant based on the feedback from the participants. This study started in the middle of March to the middle of April 2020.

4.6. Data analysis

Using the Statistical Package for Social Sciences (SPSS) version 22, computerized data entry and statistical analysis were carried out. As well as number and percentage, mean and SD were used to summarize a dataset with a single number representing a "typical" data point from the dataset. The correlation coefficient is a statistical measure of the strength of the relationship between the two variables' relative movements. A linear regression model is a linear approach to modeling the relationship between a scalar response and one or more explanatory variables. Chi-Square statistic was used to test relationships between categorical variables.
- Highly significant if p value <0.01
- Significant if p value <0.05
- Insignificant if p value >0.05

5. Results

Table 1 demonstrates that the mean age of the studied population was 36.7±11.64, 59.4% were females, 71.3% were married, and 83.2% had children. Regarding educational level, 40.4% of the studied population had technical institute. Also, this table showed that 19.9% of the studied population worked in the health field, and 72.9% had insufficient income.

Figure 1 shows that 54% of the studied population were from urban areas, while 46% were from rural areas.

Table 2 demonstrates that the mean score of difficulty to relax was2.41±0.37, while the mean of getting agitated was 1.80±0.42. Also, the mean of the total stress scale was 15.44±3.62.

Table 3 demonstrates that mean of experienced trembling was 2.10±0.64, while the mean of close to panic was 1.42±0.74. Also, the mean score of the total anxiety scale was 13.56±3.74.

Table 4 demonstrates that the mean score of "felt that I had nothing to look forward to" was 1.93±0.47, while the mean of "felt that life was meaningless" was 1.44±0.37. Also, the mean score of the total depression scale was 12.41±3.86.

Figure 2 presents that 69.3% of the studied population suffered from a moderate level of stress, while only 11.9% were normal. Regarding anxiety level, detected that 62.7% of the studied population suffered from moderate anxiety, while 17.5% of them were normal. Related to depression level, 35.7% of the studied population suffered from a moderate level of depression, while 19.8% of them were normal.

Table 5 detects that there was a highly statistically positive correlation between anxiety, stress, and depression at p-value<0.01.

Table 6 reveals that the educational level and income significantly negatively predict stress level at p-value<0.05, while age and marital status were significant positive predictors effect on stress level at p-value <0.05. Meanwhile, having children, and occupation was a significant positive predictor effect on stress level at p-value<0.01.

Table 7 reveals that the educational level and income were a significant negative predictor effect on anxiety levels at p-value<0.01. While, age, marital status, have children and occupation was a significant positive predictor effect on anxiety level at p-value <0.05. Meanwhile, the occupation was a significant positive predictor effect on anxiety level at p-value<0.001.

Table 8 reveals that the educational level was a significant negative predictor effect on depression level at p-value<0.001, but income had was a significant negative predictor effect on depression level at p-value<0.01. While age and having children was a significant positive predictor effect on depression level at p-value<0.05. However, marital status and occupation was a significant positive predictor effect on depression level at p-value<0.01.

Table (1): Frequency and percentage distribution of the studied population characteristics (n=1010).

| Socio-Demographic Characteristics	N	%
Age(year)		
20-<35	560	55.4
35-<50	280	27.8
50-65	170	16.8
Mean±SD	36.7±11.64	
Gender		
Male	410	40.6
Female	600	59.4
Marital status		
Married	720	71.3
Not Married	290	28.7
Have children		
Yes	840	83.2
No	170	16.8
If yes, no of children (N=840)		
<3	465	55.4
3-5	310	36.9
>5	65	7.7
Have children in school-age (N=840)		
Yes	530	63.1
No	310	36.9
Educational level		
Postgraduate	78	7.7
Bachelor's degree	236	23.4
Technical Institute	408	40.4
Secondary school diploma	288	28.5
Occupation		
Not working	145	14.3
Work in the health field	201	19.9
Work out the health field	664	65.8
Income		
Not enough	736	72.9
Enough	154	15.2
Enough and save	120	11.9
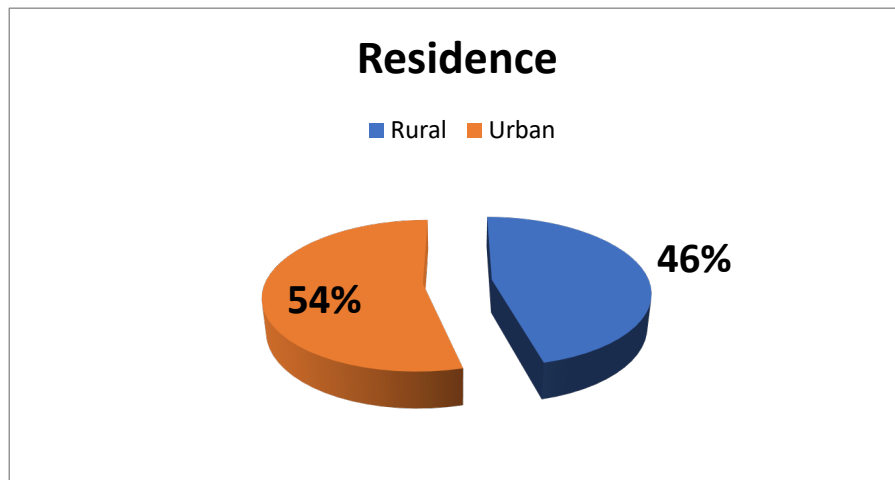
Figure (1): Percentage distribution of studied population residence (n=1010).

Table (2): Mean scores of stress among the studied population (n=1010).

Stress statements	Mean±SD
"I found it hard to wind down."	2.24±0.74
"It ended to over-react to situations."	2.18±0.36
"I felt that I was using a lot of nervous energy."	2.30±0.58
"I found myself getting agitated."	1.80±0.42
"I found it difficult to relax."	2.41±0.37
"I was intolerant of anything that kept me from getting on with what I was doing."	2.17±0.49
"I felt that I was rather touchy."	2.34±0.61
Total	15.44±3.62

Table (3): Mean scores of anxiety among the studied population (n=1010)

Anxiety statements	Mean±SD
"I was aware of the dryness of my mouth."	2.09±0.43
"I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).	1.87±0.81
"I experienced trembling" (e.g., in the hands)	2.10±0.64
"I was worried about situations in which I might panic and make a fool of myself."	2.08±0.55
"I felt I was close to panic."	1.42±0.74
"I was aware of the action of my heart in the absence of physical exertion" (e.g., sense of heart rate increase, heart missing a beat).	1.97±0.32
I felt scared without any good reason.	2.03±0.45
Total	13.56±3.74

Table (4): Mean scores of depression among the studied population (n=1010)

| Depression statements	Mean±SD
"I could not seem to experience any positive feeling at all."	1.86±0.58
"I found it difficult to work up the initiative to do things."	1.84±0.69
"I felt that I had nothing to look forward to."	1.93±0.47
"I felt down-hearted and blue."	1.87±0.51
"I was unable to become enthusiastic about anything."	1.90±0.73
"I felt I was not worth much as a person."	1.57±0.62
"I felt that life was meaningless."	1.44±0.37
Total	12.41±3.86

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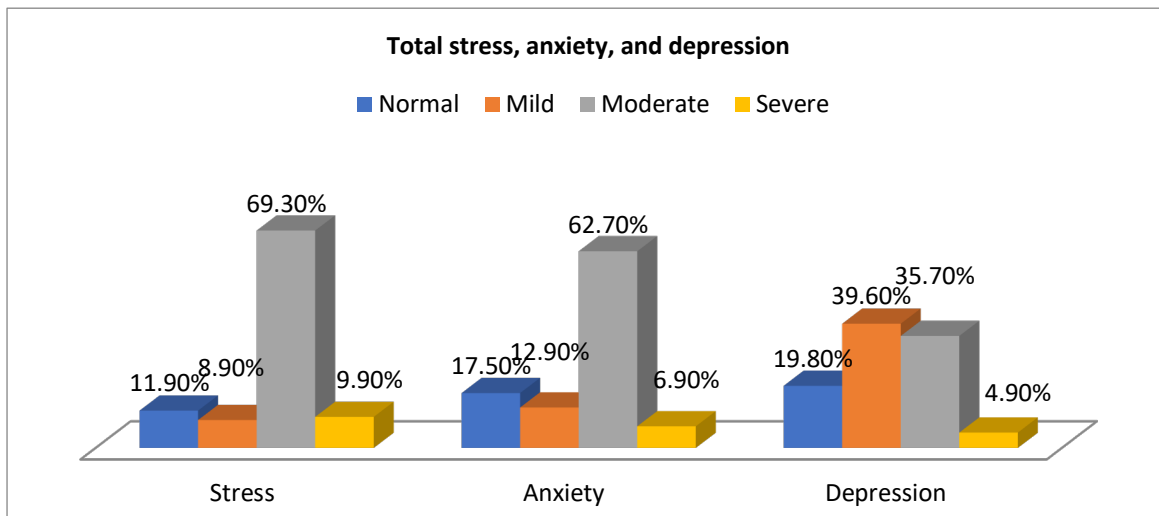
Figure (2): Percentage distribution of studied population regarding total stress, anxiety and depression level (n=1010)

Table (5): Correlation matrix between studied variables anxiety, stress, and depression among the studied population.

Studied Variables	r/p	Anxiety	Stress	Depression
Anxiety	r.		0.562	0.498
	P		0.006	0.008
Stress	r.	0.562		0.603
	P	0.006		0.004
Depression	r.	0.498	0.603	
	P	0.008	0.004	

Table (6): Multiple linear regression model between socio-demographic characteristics and stress among the studied population.

socio-demographic characteristics (Predictors)	Unstandardized Coefficients B	Standardized Coefficients B	T	P-Value
Age(year)	0.098	0.076	2.064	0.011
Marital status	0.165	0.132	2.103	0.020
Have children	0.317	0.284	4.169	0.008
Educational level	-0.203	0.179	3.834	0.010
Income	-0.177	0.165	2.613	0.013
Occupation	0.308	0.288	7.102	0.001
ANOVA				
Model	Df.	F		P. value
Regression	6	3.879		.011

*Dependent Variable: Stress, Predictors: (constant) Age (year), Marital status, have children, Educational level, Income, Occupation.

Table (7): Multiple linear regression model between socio-demographic characteristics and anxiety among the studied population.

socio-demographic characteristics (Predictors)	Unstandardized Coefficients B	Standardized Coefficients B	T	P-value
Age(year)	0.202	0.174	1.247	0.031
Marital status	0.104	0.089	1.801	0.041
Have children	0.217	0.183	2.169	0.023
Educational level	-0.165	0.136	3.525	0.001
Income	-0.256	0.211	7.520	0.000
Occupation	0.299	0.237	5.611	0.000
ANOVA				
Model	Df.	F		P. value
Regression	6	4.138		0.008

*Dependent Variable: Anxiety, Predictors: (constant)Age (year), Marital status, have children, Educational level, Income, Occupation.

Table (8): Multiple linear regression model between socio-demographic characteristics and depression among the studied population.

socio-demographic characteristics (Predictors)	Unstandardized Coefficients *B*	Standardized Coefficients B	T	P. value
Age(year)	0.128	0.174	2.038	0.021
Marital status	0.213	0.198	5.611	0.004
Have children	0.266	0.210	1.753	0.015
Educational level	-0.194	0.160	3.525	0.008
Income	-0.201	0.174	2.660	0.010
Occupation	0.314	0.245	6.056	0.002
ANOVA				
Model	**Df.**	**F**		**P. value**
Regression	6	6.201		0.002

*Dependent Variable: Depression, Predictors:(constant) Age (year), Marital status, have children, Educational level, Income, Occupation

6. Discussion

The COVID-19 is a global pandemic health emergency that could potentially have a serious impact on public health, including mental health *(World Health Organization, 2020a; Xiang et al., 2020).* Health emergencies such as pandemic can lead to detrimental and long-lasting psychosocial consequences, due to disease-related fear and anxiety, large-scale social isolation, and misinformation over social media and elsewhere *(Dong & Bouey, 2020).* This study aimed to assess the stress, anxiety, and depression symptoms in a population sample in the initial stage of the coronavirus pandemic (COVID-19) outbreak and explore its related potential risk factors.

Regarding characteristics of the studied population, the current results presented that the mean age of the studied population was 36.7±11.64, more than half of them were females, and around three-quarters of them were married and had children. Regarding educational level, more than one-third of the studied population had a technical institute. Also, more than two-thirds of them had insufficient income. The sample was convenient, as most people had free time to surf the net. These results consistent with the study performed by *Geldsetzer, (2020),* about the knowledge and perceptions of the general public in the United Kingdom and the United States about COVID-19: A cross-sectional online survey, who reported that age of more than two-thirds of them ranged between 18-37 years, one-third of them had a bachelor degree.

According to the stress level, the current results revealed that more than two-thirds of the studied population suffered from a moderate level of stress, while about one-tenth of them were normal. Also, the mean of the total stress scale was 15.44±3.62. These results may be because around three-fourths of the studied subjects were married, more than three quarters had children, and the population began to feel the adverse effects of the homestay system. These results supported with the study performed by *Ozamiz-Etxebarriaet al., (2020),* in a study on a population sample in north Spain to assess stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak. The study reported that the sample showed higher mean levels of stress symptoms. Also, consistent with the study by *Sharma et al. (2020),* about psychological and anxiety/depression level assessment among quarantine People during COVID 19 outbreak. The study showed somewhat negative emotions (anxiety/depression, stress) in people during the quarantine. However, inconsistent with the study conducted by *wang et al. (2020),* on the immediate psychological responses and related factors during the early stages of the 2019 coronavirus epidemic (COVID-19) among China's general population, who detected that 8.1% reported moderate to severe stress levels.

Regarding anxiety level, the present results detect that around two-thirds of the studied population suffered from moderate anxiety, while less than one-fifth of them were normal. These results may be due to anxiety about the spread of infection to their children and anxiety about the economic impact, lack of income, many rumors, and instructions about that pandemic. This finding is also evident in the current study, as more than two-thirds of them had not enough income.

These results cohort with the study prepared by *Röhr et al. (2020).* They study the psychosocial impact of quarantine measures during serious coronavirus outbreaks, which showed that quarantine measures have great negative consequences for mental health as anxiety, stress, and social isolation, on the other hand, inconsistent with the study conducted by *Zhao et al. (2020)* about mental health and its controlling factors among ordinary self-isolated people during the initial COVID-19 epidemic. The prevalence of anxiety was less than one fifth, and the prevalence of mild anxiety was 11.5%, moderate was 2.5%, and severe anxiety was 0.4%.

Regarding depression level, the present results demonstrate that more than one-third of the studied population suffered from a moderate level of depression, while less than one-fifth of them were normal. Also, the mean score of the total depression scale indicates mild depression symptoms. These results may be due to one-fifth of the studied population working in the health field, which at the frontline defense for the pandemic, increasing the morbidity and mortality rate related to COVID-19 and COVID-19 stigma at the community. Besides, it looks like an endless problem with no vaccine until now or soon. These results agree with the study performed by *Sønderskov et al. (2020),* who study the depressive state of the Danish population during the COVID-19 pandemic. The study stated that one-third of the studied subjects

suffered from mild depression, and two-thirds had no depression symptoms. Also, it consistent with the study by *Shevlin et al. (2020)* about anxiety, depression, traumatic stress, and COVID-19 related anxiety in the UK general population during the COVID-19 pandemic, who reported that less than one-quarter of the studied population suffered from depression.

According to the correlation between variables, there was a high positive correlation between anxiety, stress, and depression at p-value <0.01. Because anxiety, stress, and depression are psychological disorder which is interrelated and could affect each other. These results supported the study performed by *Huang and Zhao (2020)* concerning generalized anxiety disorder, sleep quality, depressive symptoms during the COVID-19 outbreak in China, who detected that anxiety disorder affected depressive symptoms. Also, consistent with the study done by *Zhu et al. (2020),* regarding the prevalence and influencing factors of anxiety and depression symptoms in the first-line medical staff fighting against COVID-19 in Gansu. They detected that there was a correlation between depression and anxiety among the studied subjects.

According to the linear regression model, the current result revealed that age (year), marital status, having children were positive predictors factors. At the same time, educational level, income, and occupation were negative predictors factors for stress, anxiety, and depression, these results supported with the study conducted by *Shevlin et al. (2020)*. They demonstrated that age, income and having children had an impact on anxiety/depression state of the studied population. Also, agreed with *Samadarshi et al., (2020)*, who conduct an online survey regarding factors associated with self-perceived stress during the initial stage of the COVID-19 outbreak in Nepal. The study reported that age and employment status were associated with a more significant psychological impact of the outbreak.

7. Conclusion

To conclude, the current study presented that more than two-thirds of the studied population suffered from a moderate level of stress. Regarding anxiety level, slightly less than two-thirds of the studied population suffered from moderate anxiety, while around one-tenth of them were normal. Related to depression level, more than one-third of the studied population suffered from a moderate level of depression, while less than one-fifth of them were normal. The current result revealed that age (year), marital status, and having children were positive predictors factors, while educational level, income, and occupation were negative predictor factors for stress, anxiety, and depression.

8. Recommendations

Based on the results of the current study, the following recommendation is suggested:
- The present findings highlight the need for additional research on predictive factors affecting people's stress, particularly during pandemics.

- Carrying out psychological intervention activities through various mediums to help people become more resilient during the COVID-19 epidemic.
- Ensure that self-help programs are in place, which can address the needs of large populations affected.
- Educate people if they are interested in obtaining it regarding the anticipated psychological effects and responses to trauma. Make sure people understand that there is a natural psychological reaction.
- Launch a specific website to address psychosocial issues.
- Ensure that people with acute issues can find the help that they need as a hotline to help people with adverse psychological impacts as a result of COVID 19.

9. Limitations and future directions

This study has some significant limitations due to the sampling technique. Relying on social networks, voluntary recruitment and re-sharing could have introduced a vital selection bias, firstly excluding people, not on social networks, and secondly introducing a self-selection bias, as suggested by the highly unbalanced gender ratio observed. For these reasons, rates of mental health outcomes should be interpreted with caution.

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