

Associations of COVID-19 pandemic Related Anxiety and Depression with Quality of Life among Quarantined Patients

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Abstract: COVID-19 is infectious, deadly, and unpredictable, thus resulting in mass negative feeling such as anxiety and depression. Quarantine is an unpleasant experience and co-existing mental disorders. Anxiety and depression among quarantined COVID patients may have a negative impact on patients' quality of life. Aim: of this study was to examine associations of covid-19 pandemic related anxiety and depression with quality of life among quarantined patients. Design: A descriptive correlational design was used for the conduction of this study. Setting: The study was conducted at Shebin Elkoum Fever Hospital, Menoufia governorate. The sample: A convenience sample of 200 quarantined COVID patients. Tools of data collection: I: Demographic data. II. The Hospital Anxiety and Depression Scale (HADS) and III: EQ-5D visual analogue scale (EQ-5DVAS). Results: the results revealed that more than four in five subjects reported anxiety (81.5%) while the minority of them reported depression (4.5%). On the other hand there were negative correlation between quality of life scores and HADS anxiety and depression scores Conclusion: There is a high prevalence of anxiety and low prevalence of depression among quarantined patients. Recommendations: Sessions on resilience training and adaptive coping strategies, online psychological counseling service, and hand washing and wearing masks as protective psychological effects of quarantine for decreasing anxiety.

Keywords: COVID-19 pandemic, Anxiety, Depression, Quality of Life, Quarantine.

1. INTRODUCTION

Psychologically, when the living environment changes, people feel unsafe, unease, and anxious (Ren, Gao, Chen, 2020). The COVID- 19 or corona virus pandemic is known as a general health crisis that caused and allocated mental resilience (Fardin, 2020). The clinical spectrum of adult COVID-19 ranges from paucity or asymptomatic forms to acute respiratory distress syndrome (Riccio et al., 2020).

Several mental disorders including, anxiety, affective, post-traumatic stress disorders, fear, and stigmatization are common in any biological disaster, and it is thus essential to implement appropriate mental health interventions (Ozamiz-Etxebarria, et al., 2020& Imran et al., 2020). COVID-19 pandemic caused unprecedented disruption to the way of people live, study, work, socialize, and access to health care (Newby et al., 2020). The rapid spread and high mortality of COVID-19 seriously threaten people's mental health and cause mental disorders such as anxiety, depression, post-traumatic stress disorder, and panic disorder (Peng et al., 2020). Anxiety and mood disorders are the most common mental health problem during COVID- 19 pandemic (Lei et al., 2020).

The dark shadow of COVID-19 is increasing the prevalence of depression and suicidality (Thomas, 2020). According to previous studies, depression and anxiety are the most common mental disorders triggered by emerging infectious disease, the prevalence of depressive symptoms is high during the COVID-19 pandemic (Ahmed et al., 2020, Chen et al., 2020& Gao et al., 2020).

COVID-19, a highly transmissible disease had been reported to cause respiratory problems (Lu et al., 2020).

The most common safe way to limit the spread of the virus is isolation and restricting the movement of people (Tang et al., 2020). Quarantine was considered as rigorous emergency measure. People who quarantined in affected areas may pose a huge burden on their psychological wellbeing there people called “hidden population” because of the quarantine and the related stigma.

Quarantine is considered as a separation or restriction of movement of people who are exposed or at risk of infectious disease. It is first used of leprosy, plague, Black Death and cholera (Sharma, Saji, kumar, & Raju. 2020). The COVID-19 has caused public panic especially quarantined people and mental health stress, causing a significant rushing to pharmacies overnight to buy the so-called “special effect drugs” and shortage of medical supplies as masks and alcohol. (Yan & Huany, 2020). And negative societal behaviors.

The potential benefits of mandatory mass quarantine need to be weighed carefully against the possible psychological costs. Successful use of quarantine as a public health measure requires us to reduce, as far as possible, the negative effects associated with it (Brooks et al., 2020). Quarantine and isolation may be discussed interchangeably (Hossain, Sultana & Purohit, 2020). Denial, the refusal to acknowledge imminent coronavirus infection has already accompanied the quarantine (Minihan et al., 2020). The impact of quarantine on mental health has been neglected during the acute emergency phase (Giallonardo et al., 2020).

However, Vindegaard and Benros (2020) revealed that quarantined or non- quarantined people have lower psychological well- being. Isolation has a considerable psychological impact on either subjects who infected or those who keep distance for preventing infection (Riccio et al., 2020). Quarantine it being a predictor of mental disorders (Cosic, Popovic, Sarlija, & Kesedzic, 2020). Hossain, Sultana & Purohit (2020) suggested psychiatric disorders that resulted from quarantine and isolation such as depression, anxiety, substance abusing, sleep disorder, low self- esteem and loneliness. The people who were in quarantine experience anxiety, discrimination, boredom, loneliness, stigma, and guilt (Lei et al., 2020).

Quarantine is a state of enforced isolation of and interchangeably of people with exposure to a contagious disease to prevent the spread of illness. Quarantine and isolation have been used as disease containment measures in leprosy, plague, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Ebola, and more recently in COVID-19. Stigma and social distancing related to quarantine increase psychological burden such as anxiety and depression among quarantined people because they feeling of being strangers and rejected (Imran et al., 2020).

Many researchers suggested many stressors during quarantine such as, duration of quarantine in which more than 10 days of isolation showed significantly higher anxiety and post-traumatic stress symptoms; fear of infection and reinfection; frustration, boredom, inadequate information and supplies; financial loss during quarantine and stigma in which quarantined people were treated differently: avoiding them, making critical comments, withdrawing from social invitations, and dealing with them with fear, suspicion and discrimination (Brooks et al., 2020, Unutzer, Kimmel, & Snowden, 2020).

Depressive symptoms were to be the most prevalent long-term psychological condition among quarantined people (Yan & Huang, 2020) and anxiety is to be expected even without quarantine during the COVID-19 pandemic (Rubin & Wessely, 2020). Serafini (2020) et al stated the psychological disturbances which related to quarantine as; depression, irritability, anxiety, anger, fear and the quality of life (QoL) is affected and disrupted in the present world today and health-related quality of life was poor among COVID-19 patients (Kharshiing et al., 2020).

So, this study aimed to examine associations of covid-19 pandemic related anxiety and depression with quality of life among quarantined patients.

Significance of the study

The outbreak of coronavirus (COVID-19) has received global attention and causes public worry and panic. The COVID-19 outbreak has brought psychological pressure to quarantined people, who may load to anxiety and depression. Recent studies had showed that during the COVID-19 outbreak, the depression rate in the general population ranges from 3.7% _ 48.3% (Ahmed et al., 2020, & Gao et al., 2020). In an Egyptian study done by Abdel-Fattah, Hussien, & Bahary (2020), they found that 33% of Egyptian sample had depression and 26% of them had anxiety.

The vast majority of available studies have been conducted in China and Italy, where the pandemic started. Egypt has been hit by the pandemic; therefore, there is a need for studies aiming to evaluate the impact of COVID-19 pandemic quarantine on mental health and QoL to improve quality of life of patients with COVID-19. Recently, a study conducted on the population related to Covid-19 virus demonstrated a higher rate of stress and degree of fear, depression and anxiety in women compared to men, respectively, due to their fear of contracting the disease (WHO, 2020). The integration of existing health care by psychiatric nurses through the teaching of important topics can play an important role in improving quality of care and quality of life during quarantine of COVID-19 pandemic.

Psychiatric nursing in the age of COVID-19 must develop ways to reach and help depressed and anxious quarantined persons because they are on the front line of care delivery during the pandemic. Therefore, the present study aims to assess the anxiety and depression of a sample in a quarantine hospital.

Aim of the study: was to examine associations of covid-19 pandemic related anxiety and depression with quality of life among quarantined patients

Research questions:

- 1- What are the associations of depression with quality of life among quarantined patients?
- 2- What are the associations of anxiety with Quality of Life among quarantined patients?
- 3- What are the associations of depression with anxiety among quarantined patients?

2. SUBJECTS AND METHOD

Research design: A descriptive correlational design was used for the conduction of this study.

Setting: The study was conducted at Shebin Elkoum Fever Hospital, which affiliated to the Ministry of Health at Menoufia Governorate, Egypt.

Subjects:

A sample of convenience, 200 quarantined patients who they were; (i) using Whats App chats or cell phone (electronic devices) to avoid transimination of infection. Whats App the most used chat application in Egypt; (ii) having mild COVID-19 symptoms; (iii) suspected cases or confirmed cases; (iv) able to participate actively in the study; (v) abling to read, and (vi) over 20 years.

The quarantine period was ranged from 3 days to 14 days, according to the patient's condition and physician opinion, and some patients completed their quarantining period in their homes with mobile follow up. Informed consent was obtained electronically prior to data collection.

Demographic data:

This tool was developed by the researcher after reviewing the related literature for the purpose of collecting socio-demographic characteristics which include age, gender, smoking status and occupation.

The Hospital Anxiety and Depression Scale (HADS):

This scale has been developed by **Zigmond and Snaith (1983)** to detect of anxiety and depression in people with physical health problems.. The HADS is divided into an anxiety subscale (HADS-A) and a depression subscale (HADS-D) both containing fourteen items, rated 0-3 and this means that a person can score between 0 and 21 for either anxiety or depression. The order is: yes definitely, yes sometimes, no, not much giving, and no, not at all. Possible maximum scores for anxiety and depression are 21. A score equal to or greater than 11 indicates probable anxiety or depression (caseness).The cut-off point is 11.

EQ-5D visual analogue scale (EQ-5DVAS):

This scale has been developed by **Euroqol Group (1990)** to assess health - related quality of life. It is designed for self-completion and asks respondents to rate their own quality of life on a thermometer- like 20cm visual analogue scale form 0 (worst imaginable health state) to 100 (best imaginable health state).

Validity and Reliability of the tools:

Original authors (**Zigmond and Snaith, 1983**) of the **HADS** scale and **Euroqol Group (1990)** of **EQ-5DVAS** reported content validity through a panel of multidisciplinary experts in the field. The scale was translated from English to Arabic then back translation was done to English to ensure translation accuracy by the researcher. The validity of the Arabic translated scale was done by three blinding experts in Psychiatric Nursing who revised the scale for content accuracy and internal validity. The tools were tested for reliability using test retest method and Pearson correlation coefficient Cronbach's alpha were 0.85 and 0.95 respectively, which indicates that the scales are reliable to detect the objectives of the study.

Administrative approval: Before starting the study, an administrative approval was obtained from director of Shebin Elkoum Fever Hospital, Menoufia governorate after explanation of the purpose of the study.

Data were collected from Shebin Elkoum Fever Hospital; Menoufia governorates, during the peak of COVID-19 outbreak in Egypt in April and May, 2020. During these two months; 422 confirmed and suspected COVID-19 cases were enrolled in the quarantining hospital (220 cases in April 2020 and 202 cases in May 2020). Of (422), cases the researcher recruited 200 cases only who apply Whats App. Chats. An information technology (IT) engineer helped the researcher in setting up the HADS scale for patients' mobiles to receive the scale. The scale items take approximately 10–15 minutes to be completed.

Pilot study:

A pilot study was carried out on 10% of patients representing the study sample to test the feasibility and clarity of the used tool; modifications were done based on the results. The sample of the pilot study was included in the final study because no modifications were done in the study tool.

Ethical considerations

Prior to the initial interview, the researcher introduced herself to every patient and explained the purpose and nature of the study, and then an informed oral consent was obtained from participants who accept to participate in the study. The researcher emphasized that participation in the study is entirely voluntary and withdrawal from the study can be done at any time without a rational; anonymity and confidentiality were assured through coding the data.

Statistical analysis

The collected data were coded and analyzed. Descriptive statistics for the variables were calculated using, frequency mean and standard deviation. Variables were compared using chi-square test for qualitative data and spearman correlation for quantitative data. The variables were significant at P value < 0.05. Data were entered and analyzed by using SPSS (Statistical Package for Social Science) statistical package version 20.

3. RESULTS

Table 1 showed that the mean age of subjects was 52.3 ± 9.5 years (with range from 27 to 53 years). About two thirds of them (63.5%) were male. Approximately one third of them retired and housewives (31%, 33% respectively). Half of them (50%) were smokers. The mean EQ-5DVAS of them was 51.4 ± 9.0 .

Table 2 showed that the median Hospital Anxiety and Depression scale (HADS) for depression scores was 7 (below 11) indicating no caseness of depression while the median HADS for anxiety scores was 13 (above 11) denoting caseness of anxiety.

Table 3 revealed that approximately four in five subjects (81.5%) reported anxiety. There was statistically significance differences of depression related to age with p value 0.000*

Table 4 showed that the minority of the subjects (4.5%) reported depression. There were statistically significance differences of depression related to age, and gender with p value 0.027 and 0.015 respectively.

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Table 1: Demographic characteristics of quarantined patients (N= 200)

Patient characteristics	Number (%) or median (inter-quartile range)
Age of patients: mean±SD	52.3±9.5 (with range from 27 to 53 years)
Gender Male Female	127 (63.5%) 73 (36.5%)
Occupation: Employee Retired House wife Others	62 (31%) 24 (12%) 66 (33%) 48 (24%)
Smoking: Smoker Exsmoker Nonsmoker	20 (10%) (all males) 80 (40%) (all males) 100 (50%) (73 females 36.5%) (27 males 13.5%)
EQ-5DVAS : Mean±SD Inter quartile range	51.4±9.0 50 (40-60)

Table 2: Anxiety and depression mean scores among quarantined patients (N= 200)

	Mean±SD	Inter quartile range
Anxiety score	12.7±2.6	13 (12-15)
Depression score	7.1±2.1	7 (5-8)

Table 3: Distribution of anxiety among quarantined patients (N= 200)

	Total completed	Not anxious	anxious	P value
Overall	200	37 (18.5%)	163 (81.5%)	
Age 49 or less	65	31 (47.7%)	34 (52.3%)	0.000*
Age 50 or more	135	6 (4.4%)	129 (95.6%)	
Male	127	21 (16.5%)	106 (83.5%)	0.224
Female	73	16 (21.9%)	57 (78.1%)	

Table 4: Distribution of depression among quarantined patients (N= 200)

	Total completed	Not depressed	depressed	P value
Overall	200	191 (95.5%)	9 (4.5%)	
Age 49 or less	65	65 (100%)	0	0.027*
Age 50 or more	135	126 (93.3%)	9 (6.7%)	
Male	127	118 (92.9%)	9 (7.1%)	0.015*
Female	73	73 (100)	0	

Table 5: Correlation between scores of EQ-5DVAS, depression score, and anxiety score among quarantined patients (N= 200)

	EQ-5DVAS	Depression score	Anxiety score
EQ-5DVAS Rho			
P value			
N			
Depression score Rho	- 0.607**		
P value	0.001		
N	200		
Anxiety score Rho	- 0.577**	0.696**	
P value	0.001	0.001	
N	200	200	

4. DISCUSSION

In the COVID-19 pandemic, “the threat” can be everywhere and can be carried by every person next to us. People experienced fear of falling sick or dying, increased levels of anxiety and depression. The experience of being quarantined in a hospital, the fear of dying alone, uncertainty about own physical condition, and the perceived danger can be considered as triggering for anxiety and depression.

The finding of the current study showed that the mean age among quarantined patients was 52.3 ± 13.2 with range 27- 53 years. This finding was consistent with study of Kong (2020) et al., who studied “Prevalence and Factors Associated with Depression and Anxiety of Hospitalized Patients with COVID-19” they found that 49.94 ± 13.73 was the mean age of their participants, with age ranged from 15 to 87 years.

Also, Hassannia (2020) et al., who studied “Anxiety and Depression in Health Workers and General Population during COVID-19 Epidemic in IRAN: A Web-Based Cross-Sectional Study”, they found that the mean age was 44.07 ± 11.63 years, ranging from 20 to 60 years old. On the other side, in the study of Lei (2020) et al., who studied “Comparison of prevalence and risk factors of psychological impacts among the quarantined population during the COVID-19 pandemic southwestern China”, they stated that the mean age was 32.3 ± 9.8 years, also, Peng (2020) et al., who studied “Prevalence, risk factors and clinical correlates of depression in quarantined population during the COVID-19 outbreak”, they reported that quarantined sample mean age was 34.96. On this same line, Yan & Huang (2020) who studied “Prevalence and Risk factors of psychological impacts among the quarantined population during the COVID-19 pandemic in China”, they reported that the mean age of quarantined participants was 36.2 ± 4.9 years. These differences can be attributed to environmental factor as weather temperature.

This present study revealed that the two thirds of quarantined patients were males and the third was female. This result was congruent with Lei (2020) et al., who studied “Comparison of prevalence and risk factors of psychological impacts among the quarantined population during the COVID-19 pandemic southwestern China”, in which the most of respondents were males. Also, the study of Kong (2020) et al., who studied “Prevalence and Factors Associated with Depression and Anxiety of Hospitalized Patients with COVID-19”, they found almost of sample was male.

Conversely, the study of Hossian (2020) et al., who studied “Mental health outcomes of quarantine and isolation for infection: a systematic umbrella review of the global evidence”, they found that two thirds were females and one third was male. Also, Brooks (2020) et al., who studied “The psychological impact of quarantine and how to reduce it: rapid review of the evidence”, they illustrated that demographic factors such as marital status, age, and education were not associated with quarantine psychological outcome. On the other side, having a history of psychiatric illness was associated with experiencing anxiety and anger.

Regarding the prevalence of anxiety among quarantined COVID-19 patients, it was found that the majority of the current sample was anxious or having anxiety symptom. This is high percentage of anxiety could be due to fear of new or unknown, quarantine and isolation are an unpleasant experience, reduce social contacts especially family members, loss of daily tasks, contact with friends, misinformation, fear of dying alone, poor resilience and using maladaptive coping methods. The quarantined patients are anxious because of he/ she being infected can be re infected, stigmatized patient, and the main important item of high anxiety is lack of psychological support, besides, half of them were smokers and they fear of effect of smoking on the chest.

The previous my result was supported by the study of Lei (2020) et al., who studied “Comparison of prevalence and risk factors of psychological impacts among the quarantined population during the COVID-19 pandemic southwestern China”, and they found that the quarantined participants had a lot more free time, and they continuously preoccupied by their no (sense of boredom) health focusing and when they leave the hospital and quarantined participants, who had low level of COVID-19 knowledge, reported high anxiety than who had medium level of knowledge of COVID-19.

On the same line, Peng (2020) et al., who studied “Prevalence, risk factors and clinical correlates of depression in quarantined population during the COVID-19 outbreak”, they reported that the anxiety rate of Chinese patients was 74.2% and 77.7% respectively during four months and misconceptions about COVID-19 caused by false propaganda, rumors and defamation can provoke anxiety.

In contradictory, (contradiction) a study of Jeong (2016) et al., who studied "Mental health status of people isolated due to Middle East respiratory syndrome" they found that 7% (126 of 1656) showed anxiety symptoms. Also, Riccio (2020) et al., who studied "Is quarantine for COVID-19 pandemic associated with psychological burden in primary ciliary dyskinesia? A prospective study" they reported that their sample study had more psychological difficulties related to general health and only 20% had high level of anxiety and COVID-19 anxiety is highly correlated with age and female gender. Shevlin (2020) et al., who studied "COVID-19 related anxiety predicts somatic symptoms in the UK population", they found that women had more anxiety than men. However, Giallonardo (2020) et al., who studied "The impact of quarantine and physical distancing following covid-19 on mental health: study protocol of a Metacentric Italian Population Trial", they anticipated that the quarantine increases the levels of anxiety. Also, people in quarantine were significantly more likely to report anxiety, depression, insomnia, irritability and exhaustion (Joo et al., 2019).

In the same context, Tang (2020) et al., who studied "COVID-19) related to depression and anxiety among quarantined respondents", they found that 70.78% of the quarantined respondents had symptoms of anxiety, and Sharma, Sajin, kumar & Raju (2020) who studied "Psychological and anxiety / depression level assessment among quarantine people during COVID-19 outbreak", they found that quarantined people felt anxiety most of the time.

Regarding the prevalence of depression in the current study, it was less than the prevalence of anxiety; it was 4.5% of quarantined patients suffered from depression. This is may be due to that Egyptians people have a rigorous religion regarding the catastrophes, lack the ability to face economic risks, in addition being quarantined means that they are depressed, in addition, lack of support from the working staff and discrimination. The previous result was supported by Ahmed (2020) et al., who studied "Epidemic of COVID-19 in China and associated psychological problems" and Gao (2020) et al., who studied "Mental health problems and social media exposure during COVID-19 outbreak." in which they found that the prevalence of depressive symptoms among quarantined population was 6.2% (139 of 2237).

On the same line, Lie (2020) et al., who studied "Comparison of prevalence and risk factors of psychological impacts among the quarantined population during the COVID-19 pandemic southwestern China" they found that 3.7% prevalence of depression among their study. But the present result was contrasted with many other studies. A study of Brooks (2020) et al., who studied "The psychological impact of quarantine and how to reduce it: rapid review of the evidence", they illustrated that the quarantined persons reported high depressive symptoms, irritability, insomnia, poor concentration, confusion, fear, anger, and grief, also Tang (2020) et al., who studied "COVID-19) related to depression and anxiety among quarantined respondents" stated that 26.47% of the quarantined respondents had symptoms of depression.

Within the same context, the study of Rubin & Wessely (2020) who studied "The psychological effects of quarantining a city", they found that depression rises following the first death, an escalating number of new cases and increased media reporting. Mass quarantine likely to rise up for many reasons. The authorities believe the situation to be severed and liable to be worsening; quarantine means a loss of control.

In the present study, anxiety and depression were more common in males than females. This may be due to thirds of current study subjects were male. This result was supported By Tang (2020) et al., who studied "COVID-19 related to depression and anxiety among quarantined respondents"; they found that males were more likely to suffer from depression than anxiety on compared to females.

The current study revealed that anxiety and depression were more common in old age. Yan and Hung (2020) who studied "Prevalence and Risk factors of psychological impacts among the quarantined population during the COVID-19 pandemic in China" reported that anxiety and depression were more pronounced among younger quarantined people and females.

The reason for these differences in results may be due to differences levels of knowledge about the disease and the government took quick and strong measures to reduce public panic such as establishing a psychological assistance system.

Using different instruments and cut-off points measures anxiety and depression, different cultural background financial loads of the disease, different points of time of date collection, the difference in screening tools, many other studies were carried out via the internet which it makes it difficult to calculate the actual response rate and low response rate may lead to overestimate to the anxiety and depression prevalence. The current study revealed negative correlation between HADS

anxiety and depression scores and quality of life. This result was in line with Greco, Altieri, Esperto, Mirone, and Scarpa (2020) who studied “Impact of COVID-19 Pandemic on Health-Related Quality of Life in Uro-oncologic Patients: What Should We Wait For? ” and they stated that poor mental health is of concern as it may exert a negative effect on an individual’s quality of life (QoL). On the same line, Patra, Kanungo, & Bawa (2020) who studied “Mental health, sleep quality and quality of life in individuals with and without multiple health conditions during home quarantine in India due to the COVID-19 pandemic: a cross-sectional study” and they stated that health-related QoL was lower in individuals at the time of home quarantine in India.

5. CONCLUSION

Findings of the current study concluded that there was a high prevalence of anxiety and low prevalence of depression among quarantined patients.

6. RECOMMENDATIONS

- Hand washing and wearing masks as protective psychological effects of quarantine to decrease anxiety.
- Telephone Hot- lines psychological assistance.
- Sessions on resilience training and adaptive coping strategies.
- Active listening but without pressure to talk pressure.
- Applying stress- management techniques, communication and problem- solving skills.
- Online psychological counseling service (Digital interventions).
- Health authorities are providing web- based psychological interventions such as cognitive behavior therapy and psychoeducation

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