Received: 22 September 2020 | Revised: 12 January 2021 | Accepted: 21 January 2021

DOI: 10.1111/ppc.12741

ORIGINAL ARTICLE

Perspectives in PSYCHIATRIC CARE WILEY

Psychological reactions of COVID-19 patients to the stress caused by the disease crisis: A descriptive phenomenological study

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Funding information
This study was supported by the Vice-Chancellor of Research and Technology of Urmia University of Medical Sciences.

Abstract

Purpose: This study was conducted to explain the psychological reactions of COVID-19 patients to the stress caused by the disease crisis from the perspective of the survivors.

Design and Methods: A phenomenological approach was adopted to the qualitative study of 14 COVID-19 survivors selected through purposive sampling.

Findings: Two themes extracted as the psychological reactions of the patients to the COVID-19-induced stress included "self-moderating effect of stress" and "psychological maladaptation."

Practice Implications: The present findings appear effective in laying the foundations for performing interventions to improve constructive psychological reactions such as using self-moderating mechanisms of the COVID-19-induced stress and reducing or eliminating maladaptive psychological reactions such as depression, anger, self-blaming, and regret.

KEYWORDS

COVID-19, patients, psychological reaction, qualitative study, stress

1 | INTRODUCTION

COVID-19 that emerged in a seafood market in Wuhan, China, has now turned into a global disaster.[1] On March 11th, 2020, the World Health Organization (WHO) declared that the coronavirus outbreak reached pandemic levels.[2] According to Worldometer official statistics, the recorded global mortality of this disease is 3%, and 0.5% of all the patients (108,648) are in critical conditions by January 8th, 2021.[3]

The interval between infection and recovery from COVID-19 is interpreted as a critical stage in the patients' life. The patients going through this crisis have to endure high levels of psychological pressure and severe psychological stresses in addition to physical suffering.[4,5] These stresses can be caused by the unknown consequences of this new and fatal disease, symptoms of infection such as fever, hypoxia, coughs, and the medication side-effects such as corticosteroid-induced insomnia. Moreover, attributing the term "fatal" to this disease intensifies its induced stress.[6]

The physical and biological dimensions of the disease have come into focus since its onset and outbreak, while the heavy psychological burden caused by the disease-induced stress has been rather neglected.[7,8] The disease-induced stress and pressure can trigger different psychological reactions in the patients. The emergence of coping psychological reactions is, therefore, inevitable in the face of the stress and psychological effects of this disease.[9] These psychological reactions help the patients reduce or tolerate the disease-induced stress and reach a balanced functional level.[10,11]

Many studies have addressed COVID-19 since it turned into a global pandemic.[12] The majority of these studies have focused on the physical and biological dimensions of the patients and the psychological status of healthy individuals,[13] whereas the psychological status of the patients, especially their psychological reactions to the stress caused by the disease crisis, has rarely been addressed in literature. The rapid spread, unknown nature, and incurability of COVID-19 can cause the patients to describe their infection as a stressful and terrifying experience. Acquiring a better understanding of the psychological reactions of the patients facing this stressful event can pave the way for performing appropriate behavioral–therapeutic interventions. A naturalistic perspective-based investigation of the lived experiences of the patients who lived with and

survived the disease can help understand and identify different dimensions of the study phenomenon. The present qualitative study adopted a phenomenological approach to explain the psychological reactions of COVID-19 patients to the stress caused by the disease crisis from the perspective of the survivors.

2 | METHODS

2.1 | Study design

The present descriptive, phenomenological, and qualitative study sought to investigate lived experiences of the subjects and understand the meaning and concept of phenomena from their perspectives.[14]

2.2 | Participants and setting

Purposive sampling was used to select 14 subjects who had recovered from COVID-19 in Urmia, a city in the northwest of Iran. Maximum variation was observed in sampling in terms of age and gender to obtain a wide range of experiences (Table 1).

The eligible candidates comprised COVID-19 survivors who had completed their hospitalization or quarantine at home or convalescent homes and who were willing to participate in the study.

2.3 | Data collection

The data were collected through in-depth semi-structured telephone interviews by the first and second authors. Given the long incubation period of COVID-19, the interviews were conducted through a phone to prevent its communication. The participants were asked to describe their experiences in relation to the main study question, that is, "What were your psychological reactions to the stress caused by the disease crisis between your infection and recovery? Please talk about your experiences." Based on the participants' responses, the interviewer then steered the interview toward a more profound investigation of their experiences with the study subject using exploratory questions such as "What do you mean by that?", "Can you elaborate on this point?", and "Can you make it clearer? Why? How?".

After receiving the electronic or verbal consent of the participants, the researcher recorded all the conversations during the interviews. All the interviews that lasted approximately 45 min continued until data saturation was reached.

TABLE 1 Demographic characteristics of the study participants

Participant no.	Age (years)	Gender
P1	30	Male
P2	46	Male
P3	38	Female
P4	35	Male
P5	33	Female
P6	36	Male
P7	29	Female
P8	34	Female
P9	48	Male
P10	39	Male
P11	41	Female
P12	34	Female
P13	37	Female
P14	43	Male

2.4 | Data analysis

The data were analyzed based on Colaizzi's seven-step method.[14,15] In the first step, after listening to the recorded statements of the participants several times at the end of each interview and field note-taking, the interviews were transcribed verbatim in Microsoft Word. The Word file was then entered into MAX.QDA-R25041-10 to extract the concepts and categorize the data. The interview texts were reviewed several times to acquire a better understanding of the feelings and experiences of the participants. In the second step, the data containing the meanings related to the psychological reactions of the patients in coping with the stress of the infection period were identified. The concepts extracted in the third step were carefully reviewed and categorized by their similarities in the fourth step. In the fifth step, the results describing the study phenomenon were merged into more general categories. In the sixth step, a comprehensive description of the study phenomenon was provided. In the final step, the structure of the study phenomenon was determined and validation was performed by approaching the individual subjects about the findings.

2.5 | Ethical considerations

After obtaining the approval of the Ethics Committee (Code: IR.UMSU.REC.1399.020) and briefing the participants on the study objectives, informed consent forms were sent using messaging applications to all the participants to accurately review, electronically sign, and return the signed forms. The participants were assured of the confidentiality of their data.

2.6 | Rigor

To ensure the rigor and trustworthiness of the data, the researcher presented again the obtained interpretations and impressions to the participants to conduct a review. Three of the randomly selected interviews were also analyzed by the colleagues. Moreover, maximum

variation was observed in selecting the participants to enhance the transferability of the findings to other situations or groups.

3 | FINDINGS

Among 14 participants, half were male and half were female. The mean age of the participants was 35.37 years. Three of them were hospitalized without being intubated in the intensive care unit (ICU) and the rest of them were hospitalized in the general wards. The length of stay in the hospital differed from 5 to 14 days.

They are analyzing the data extracted 26 subcategories, 7 categories and 2 themes as per Table 2. The psychological reactions of the patients to the stress caused by the disease crisis were described as the self-moderating effect of stress (spiritual meditation, self-hopefulness about recovering from the disease, avoiding the coronavirus infodemic and normalization) and psychological maladaptation (depression caused by contracting COVID-19, anger and self-blaming and regret). Figure 1 depicts the general outline of the psychological reactions of the patients to the stress caused by the disease crisis.

3.1 | Theme 1: Self-moderating effect of stress

Self-moderation was described as the main reaction of the participants to the stress caused by COVID-19 during their infection. This reaction was extracted from constructive concepts such as spiritual meditation, self-hopefulness about recovering from the disease, avoiding the coronavirus infodemic, distraction, and normalization.

3.1.1 | Subtheme: Spiritual meditation

The data analysis showed being grateful to and trusting in God constitute a constructive mechanism in moderating the stress caused by the disease crisis. The participants described their experiences as follows:

TABLE 2 Themes, subthemes, and codes obtained from data analysis

Themes	Subthemes	Codes
Self-moderating effect of stress	Spiritual meditation	Being grateful to God
		Trusting in God
	Self-hopefulness about recovering from the disease	Optimistically dealing with the disease
		Having faith in oneself to defeat the disease
		Being hopeful about good days to come in the future
		Trusting the treatment
	Avoiding the coronavirus infodemic	Distrusting conflicting news
		Avoiding social networks
		Not watching the news
		Following positive news
	Normalization	Getting through the disease period with jokes and laughter
		Making phone calls
		Regularly studying
		Watching videos
		Deeming the disease normal
		Indifference to the outcome of the disease
Psychological maladaptation	Depression	Weak and fragile morale
		Loss of enthusiasm for living
		Feeling concerned about the circumstances
	Anger	Anger at contracting the disease
		Anger at the country of origin of the disease
		Anger at people not obeying hygienic standards
		Anger at media
	Self-blaming and regret	Feeling a twinge of conscience
		Self-blaming for not obeying hygiene protocols
		Regrets about neglecting the virus

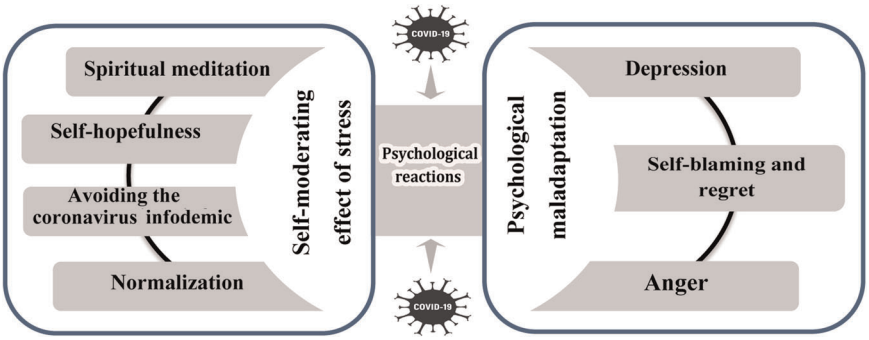

FIGURE 1 The psychological reactions of COVID-19 patients to the stress caused by the disease crisis [Color figure can be viewed at wileyonlinelibrary.com]

> Although I had too much stress during the disease, I always trusted in God. I trusted him (God). I said to myself that God has given life to me one day and, like it or not, will take it; so, be strong and trust in God *(Male patient, P2)*.

> In the worst condition, when I woke up every day, I thanked God for being still alive and breathing and having still hope to return home and see my family and friends *(Male patient, P4)*.

3.1.2 | Subtheme: Self-hopefulness about recovering from the disease

Self-hopefulness about recovering from COVID-19 was another reaction from the patients for moderating the disease-induced stress. The patients gave themselves hope by optimistically dealing with the disease, having faith in themselves to defeat the disease, being hopeful about good days of life, and trusting the treatment. The participants described their experiences as follows:

> I said to myself that so many infected people were recovered, even 90 year olds, 100 year olds; I gave myself hope saying that it was like catching a cold or influenza and it would pass and with hope and faith in myself I could easily defeat it *(Female patient, P5)*.

> Instead of thinking about my illness, I tried to focus on the good days I had planned for, and kept telling myself that bad days wouldn't last long and these days would pass and become a memory *(Female patient, P7)*.

> In those circumstances, I trusted first in God and then in doctors and nurses. After receiving medications and IV fluids in the hospital, I got a lot better, and I took my medications on time at home, since I was sure they would make me better *(Male patient, P1)*.

3.1.3 | Subtheme: Avoiding the coronavirus infodemic

The participants described information overload relating to the disease as a strong stressor in dealing with the disease-induced stress and an unpleasant and stressful experience. The patients therefore made efforts to moderate this stressful situation by distrusting conflicting news, avoiding social networks, not watching the news, and following positive news. The participants described their experiences as follows:

> The news and information about the disease were both overwhelming and contradictory, especially on social networks. Quoting different messages from the same doctor, someone said vitamin C should be taken, while others rejected it for being acidic and exacerbating coughs. Someone introduced a vaccine, while others said it was not the right vaccine. That is why I tried not to follow these things, and I had no desire, because they all increased my stress and concern *(Female patient, P3)*.

> I only followed positive news. I tried not to watch the disease-related news, and did not surf social networks to avoid the overload of pointless information, which caused my shocks and extreme worry, made me feel worse and increased my headache or fatigue *(Male patient, P9)*.

3.1.4 | Subtheme: Normalization

According to the experiences of the participants, normalization of the conditions was a reaction from the patients for moderating the disease-induced stress, which was performed by getting through the disease period with jokes and laughter, making phone calls, regularly studying, watching videos, deeming the disease normal, and being indifferent to the outcome of the disease. The participants described their experiences as follows:

> I passed the time by joking and laughing in a way that they did not believe I was sick. I was busy surfing

social networks and listening to music using a hands-free device. I passed the day as if it was a normal day *(Male patient, P6)*.

I felt terribly stressed and scared while suffocating in the first 3–4 days, but then it became normal, as if I was not sick at all or the illness was normal like other illnesses. I was hospitalized like other patients *(Female patient, P11)*.

I tried to pretend nothing had happened, because it soothed me and, believe it or not, even affected my symptoms. Assuming everything is calm and in its place gives you a sense of comfort that is really comforting *(Female patient, P13)*.

3.2 | Theme 2: Psychological maladaptation

Psychological maladaptation was described as a psychological reaction of the patients to the COVID-19-induced stress during their infection. Psychological maladaptation implied depression, anger, self-blaming, and regret.

3.2.1 | Subtheme: Depression

In the face of the disease-induced stress, some of the participants lost their morale and enthusiasm for living and felt concerned about the circumstances, all of which suggested the emergence of their depression. The participants described their experiences as follows:

I was discouraged and depressed with no enthusiasm for living; my morale was fragile. Perhaps, I did not care about what people said before, but then it broke my heart when people came around and joke. I was being irritable *(Female patient, P12)*.

I was under intense psychological pressure and extremely worried. I was constantly worried in the hospital lest I would be intubated within an hour. When I was discharged and went home, my heart rate would rise once I coughed. I got palpitations, like I was suffocating. These conditions had really made me restless; these events repeatedly occurred and this repetition had made me really isolated and exhausted *(Male patient, P14)*.

3.2.2 | Subtheme: Anger

The participants described anger as another maladaptive psychological reaction in the face of disease-induced stress. This reaction suggested anger in the participants at contracting the disease, at the country of origin of the disease, at people not obeying hygienic standards, and at media. The participants described their experiences as follows:

I was angry about why I was infected and at my bad luck. I thought a stone dropping from the sky would hit me on the head. It is really annoying that a few thousand people would be infected in a country of 80 million, and one of them would be you *(Female patient, P8)*.

I felt considerable resentment towards those who did not care and failed to break the chain of transmission and caused the disease to reach our country and city. Perhaps, I was one of them. I was furious about being afflicted by a disease coming from a faraway country *(Female patient, P13)*.

What have the media done other than disseminating conflicting information and increasing stress in people, especially the patients? Instead of preparing and training us for possible exposure, they gave us conflicting news every day, which was annoying. With this news, I detested the media *(Male patient, P10)*.

3.2.3 | Subtheme: Self-blaming and regret

Feeling regretful and a twinge of conscience in the face of the disease-induced stress, some of the participants blamed themselves for failing to observe hygiene protocols and taking the virus seriously. A participant described his experience as follows:

I wish I had coped with the disease as seriously as possible. Like others, I thought the virus would infect all people other than me and that bad things always happen to the neighbor. I wish I had obeyed hygiene protocols more seriously. Sometimes I regretted I might have to suffer the lifelong complications of CIVID-19 despite having had a healthy body. I realized that even if we did not care about coronavirus, it certainly cared about us quite cleverly. I kept blaming myself for not observing the quarantine *(Male patient, P9)*.

4 | DISCUSSION

Analyzing the data extracted themes to help achieve the main objective of this study, that is, searching for, discovering, and

interpreting psychological reactions of COVID-19 patients to the stress caused by the disease crisis.

The self-moderating effect of the COVID-19-induced stress was one of the principal reactions of the participants to the disease-induced stress. Spiritual meditation, self-hopefulness about recovering from the disease, avoiding the coronavirus infodemic, distraction, and normalization were identified as the main reactions of COVID-19 patients in moderating the COVID-19-induced stress. Humans can understand the meaning, goal, and values of their life through the contexts provided by their spiritual dimensions. Many studies have addressed the effects of spirituality and spiritual behaviors on increasing self-hopefulness and controlling and reducing stress in patients.[16,17] Spirituality helps patients better come to terms with their disease and suffer less damage in the face of the stresses caused by the disease and life events.[16]

Avoiding the coronavirus infodemic was a psychological reaction of COVID-19 patients in moderating the disease-induced stress. The coronavirus infodemic refers to the dissemination of a huge volume of information and incorrect beliefs about COVID-19.[18,19] Sylvie Briand, Director of the Pandemic and Epidemic Diseases Department at the WHO, said, "We know some kind of tsunami of information occurs with the outbreak of a disease and this information always include misinformation and rumors."[20] Dealing with this misleading information can cause psychological turmoil in the patients such as anxiety, stress, and panic reactions.[21,22] Avoiding the coronavirus infodemic can therefore help moderate stress in the patients.

The present study found COVID-19 patients to seek to shift their focus away from the status quo caused by the disease through distraction and normalization, which played a key role in their stress moderation. Research suggests distraction, positive thinking, and normalization significantly contribute to stress moderation in patients.[4,23] In the study by Hao et al., patients with COVID-19 sought ways to regulate their emotions to face stressful events. First, they relieve tension by the belief that the government and the medical staff are doing their best to help them. In addition to hopefulness, patients tried a regular routine of appropriate practices and fun activities to divert their attention away from their disease status and feel more empowered, and have more control over the negative and maladaptive emotions.[5]

As a theme associated with the psychological reactions of COVID-19 patients to the stress caused by the disease crisis, psychological maladaptation extracted from analyzing the interviews suggested the development of depression, anger, and self-blaming, and regret in the patients. Currently inadequate knowledge about the disease and its unclear nature can cause very high levels of fear and stress in the patients. Feeling stressed can also cause despair, depression, and nervousness. In the study by Hao et al.,[5] patients felt frustrated and seemed disappointed during the hospital stay because they believed that their chances of recovery disappeared. One of the rarely conducted studies on the incidence of depression in COVID-19 inpatients by Kong et al.[24] reported the disease-induced depression in 28.47% of the patients and found social support to be a major factor affecting the incidence of depression in the patients. Social and family isolation for preventing the infection of others with the virus and the negative burden and social stigma of the disease can be associated with the emergence of deteriorating psychological reactions such as depression in COVID-19 patients.[24,25] The disease and quarantine can cause the loss of the psychological support provided by the family and friends and in turn exacerbate psychological damage and pressure in the patients. In these circumstances, treatment staff, psychotherapists, and media play a key role in reducing this reaction in the infected patients through employing effective psychological interventions.

The present study described anger, self-blaming, and regret as other types of psychological maladaptation in the participants. The patients were angry mainly at the country of origin of the disease, at people not obeying hygienic standards, and at the media's failure to properly inform the public of the disease and its complications and control methods. Some of the patients suffered a twinge of conscience, blamed themselves, and regretted about their failure to observe hygiene protocols and seriously cope with the virus. Sahoo et al.[25] described the experiences of the survivors of COVID-19 as their psychological reactions, including their anger at themselves, feeling ashamed of infecting others, and self-blaming along with cursing their fate by saying "Why has God punished me and my family?" These descriptions suggest an urgent need for addressing and comprehending psychological problems in COVID-19 patients during their admission/hospitalization and quarantine.[25,26] Failing to pay attention to these problems in a timely manner and prevent them can cause long-term psychological complications in the patients and affect their attitudes toward life even after the end of this pandemic. In this regard, the provision of Internet/smartphone-based cognitive behavioral therapy can be valuable in the prevention and early treatment of psychological symptoms as well as the promotion of mental health during the COVID-19 pandemic.[27,28] In terms of format, Internet-based cognitive behavioral therapy can be described as an Internet-based book therapy with online therapist support through a secure asynchronous electronic messaging system.[28,29] One of the most important advantages of this method is increasing patients' access to psychological therapies. This is because in this method, a therapist can monitor and treat up to 80 patients. On the other hand, this is an economically quite cost-effective method.[29] Therefore, in the situation caused by the COVID-19 pandemic, this method can be very effective due to preventing the accumulation of patients in medical centers, reducing treatment costs, and easier and faster patients' access to counseling and treatment services.

5 | CONCLUSION

The present study results showed different psychological reactions to the stress caused by COVID-19 in the patients. The constructive reactions of some of the patients for improving their psychological status were associated with the self-moderating effect of stress, while deteriorating and destructive reactions that emerged as psychological maladaptation in the others caused their psychological degradation.

6 | IMPLICATIONS FOR NURSING PRACTICE

Analyzing the effects of the stress caused by COVID-19 on psychological reactions in the patients is crucial in the current COVID-19 pandemic crisis. The present findings appear effective in laying the foundations for performing interventions to improve constructive psychological reactions such as using self-moderating mechanisms of the COVID-19-induced stress and reducing or eliminating maladaptive psychological reactions such as depression, anger, self-blaming, and regret.

6.1 | Study limitations

Given that the present study was short-term in type, long-term engagement with the study subject can provide valuable information about the psychological reactions of COVID-19 patients to the stress caused by the disease crisis. Moreover, the very limited number of studies conducted on psychological responses to COVID-19 and the stress it causes in the patients and the survivors restricted the possibility of interpreting the findings based on the existing articles and evidence. This limitation, however, confirms that the present study pioneered the investigation of psychological reactions in these patients.

ACKNOWLEDGMENTS

The researchers would like to thank all participants in this study. This study was supported by the Vice-Chancellor of Research and Technology of Urmia University of Medical Sciences.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

Study conception and design: Yaser Moradi, Rahim Baghaei, Farzin Mollazadeh, and Parivash Karimi. *Data collection*: Yaser Moradi, Farzin Mollazadeh, Parivash Karimi, and Keyvan Hosseingholipour. *Data analysis and interpretation*: Yaser Moradi, Farzin Mollazadeh, Rahim Baghaei, and Parivash Karimi. *Drafting of the article*: Yaser Moradi, Farzin Mollazadeh, and Rahim Baghaei. *Critical revision of the article*: Yaser Moradi, Farzin Mollazadeh, and Rahim Baghaei.

DATA AVAILABILITY STATEMENT

The data sets used and/or analyzed the current study are available from the corresponding author on reasonable request.

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How to cite this article: Moradi Y, Mollazadeh F, Karimi P, Hosseingholipour K, Baghaei R. Psychological reactions of COVID-19 patients to the stress caused by the disease crisis: a descriptive phenomenological study. *Perspect Psychiatr Care*. 2021;1–8.
https://doi.org/10.1111/ppc.12741