

Psychosocial Reactions and Coping Patterns among Frontline Nurses Caring for Patients with COVID-19 Pandemic: Qualitative Study

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Abstract

Background: Front-line nurses who provide care for COVID-19 patients have several psychosocial reactions, especially at the beginning of the COVID-19 pandemic. These reactions threaten their health, well-being, and ability to work as well as put them at an increased risk of developing negative coping patterns. **The study aimed at** exploring front-line nurses' psychosocial reactions and their coping patterns during the COVID-19 pandemic. **Study design:** Qualitative research was conducted in a sample of 18 nurses who worked at the isolated wards of Al Obour Specialized Hospital, affiliated to Ain Shams University Hospitals. **The results** of this study revealed that the psychosocial reactions among studied nurses were described into 10 themes as follows: Fear of being infected, feeling uncertainty about the virus, anxiety related to lack of preparation, the feeling of inequality, the feeling of hopelessness and helplessness, concerns about the family, societal stigma, and rejection, feeling of loss and grief, loneliness and social isolation, and physical exhaustion. The study also revealed that although the studied nurses had psychosocial suffering, they have 5 ways of positive coping as follows: in-service education and training, communicating with family and friends, practicing recreation activities, writing diaries, and practicing spirituality and religious activities. **Conclusion:** Although frontline nurses suffered from several psychosocial problems during the COVID-19 pandemic, they have positive abilities to cope with their negative emotional stress. **Recommendation:** Providing support and psychological counseling programs for frontline nurses, especially in times of crisis, should be a part of hospital policy.

Keywords: frontline nurses, psychosocial, reactions, coping, COVID-19

Introduction

COVID-19 is considered an international public health emergency, that is a viral respiratory disease with extensive and rapid infectiousness characteristics (**World Health Organization, 2020**). In Egypt, patients were increased to 138062 and 7631 deaths by the end of 2020 (Egyptian Ministry of Health, 2020). As the number of patients infected with COVID-19 has grown, and a frightening number of cases have been admitted to hospitals, healthcare systems have been faced with a crisis (**Khetrapal & Bhatia, 2020**).

Front-line nurses working in isolated hospitals have been faced with tragic and imaginable scenarios that never had been faced before. Many of them have been surmised regarding their experiences in dealing with a new emerging disease (**Robinson & Stinson, 2021**). They spend sustained periods of time caring directly for patients and families and working tirelessly to equip themselves with the knowledge about transmission, symptoms,

diagnosis, and treatment of this novel virus (**Lapum et al., 2021**). They not only work long hours in isolation wards due to their shortage but also wear protective gear and N95 masks for 8- to 12-hour shifts, which causes dehydration and discomfort (**Gao et al., 2020**).

Caring for patients with COVID-19 has challenges among frontline nurses because they put their lives and health at risk while performing their daily professional duties. Nurses may experience many psychological reactions such as loss of control, uncertainty, fear, a sense of helplessness, and inadequacy, reluctance towards professional duties that were performed previously, or inner conflicts about willingness to continue to perform professional duties (**Joanna & Studzińska, 2020**).

Working in such an extraordinary situation, beyond the nurses' aptitudes and with a risk of getting the infection, put nurses at an increased risk of having mental health problems. They may experience anxiety, depression, burnout,

and stress-related disorders. Nurses are also faced with a conflict between family and work in terms of increasing the possibility of spreading infection within their family. Lack of misinformation, limited supply of personal protective equipment, job-related stress, as well as feeling stigmatized by society. These factors are the main contributing factors to mental health problems among them (Gupta & Sahoo, 2020; Huang, et al., 2020).

According to Aguilera's crisis theory, the new event might be received as a particular situation based on the individual perception and his/her response to the threat (Gillil & James, 2013). In this respect, frontline nurses receive the pandemic unexpectedly, they have negative and chaotic feelings toward that event, and they lose their normal and routine lives. So, frontline nurses realize that their coping resources are not effective compared to before the time of the COVID-19 pandemic. (Biegańska-Banaś & Makara-Studzińska, 2020). Furthermore, they try to handle that challenging situation by using constructive and nonconstructive coping styles. The most common coping patterns used among nurses during the COVID-19 pandemic are the use of protective measures, avoidance strategies, social support, faith-based practices, psychological support, and management support (Joanna & Studzińska, 2020).

Significance of the study

COVID-19 has been considered a catastrophic crisis. During this, the front-line nurses were affected physically, psychologically, and socially due to their direct contact with and care for infected patients (Cai, et al., 2020). Many healthcare workers including nurses have become infected, ill, or died because of COVID-19. The total number of infected cases was 152 888 among healthcare workers and many of them were nurses (71.6%, n=14 058, while the total number of deaths was 1413 deaths all over the world (Bandyopadhyay et al., 2020). These deaths are a catastrophic loss. Levels of anxiety, distress, fatigue, occupational burnout, stigmatization, and physical, and psychological violence have all increased significantly among nurses. Negative psychological status might prevent nurses from providing optimum care

for patients with COVID-19. Therefore, this study aimed to explore the psychosocial reactions as perceived by nurses who care for patients with COVID-19 and their coping efforts to overcome the pandemic crisis.

Aim of the study:

To explore front-line nurses' psychosocial reactions and their coping patterns during the COVID-19 pandemic.

Research Questions:

- What are the psychosocial reactions of frontline nurses caring for patients with COVID-19?
- What are the coping patterns among frontline nurses to deal with the pandemic crisis?

Operational definition:

Frontline nurses are nurses who have direct contact with and care for patients with Covid-19.

Subject and methods

Study design:

A qualitative, explorative study design. Since qualitative research provides an in-depth understanding of personal behaviors.

Setting:

This study was conducted at Al Obour Specialized Hospital, Qulyubia, Egypt which is affiliated to Ain Shams University hospitals. This is the hospital isolation and is equipped to receive patients with COVID-19. It includes intermittent, intensive care, and emergency units.

Sample:

A purposive sample of 18 nurses was selected based on certain inclusion criteria; nurses who had more than 1 year of working experience, were assigned to work in the isolation hospital for at least two waves of COVID-19 in Egypt and had previous experience in caring for patients with COVID-19 in isolated wards; intermittent care, and intensive care unit. The sample size was determined based on the data saturation method.

Data saturation method:

It is also called “thematic saturation”. It is a type of sampling technique in the qualitative method. Saturation is the most common guiding principle for assessing the size of purposive samples in qualitative research. Saturation refers to the point in data collection when no additional issues are identified and data from subjects begin to repeat without further new information added. So further data collection is redundant, indicating that an adequate sample size is reached. Saturation in the current study can be achieved in a narrow range of (13–18) interviews (Morse, 2015).

Study tool: A semi-structured questionnaire was developed by researchers based on the related literatures. It included demographic data and a predetermined thematic framework that were translated into open-ended questions. It includes the following: the nurse’s perception regarding the first recorded case of the COVID-19 pandemic in Egypt, assigned as a frontal line nurse in an isolation hospital, vague and unstable treatment protocol, availability, and quality of supplies. It also includes feelings regarding the possibility of getting or spreading the infection to others, nurses’ perceptions regarding social interactions with their significant others, and nurses’ coping patterns that help them deal with such a unique experience.

Data collection phase

The data was collected from January 2021 until May 2021 during the third wave of COVID-19 in Egypt. Because of the safety precautions and quarantine that applied during the outbreak, the researchers were unable to go to the isolation hospital, therefore, they obtained the nurses’ phone numbers who meet the criteria from the human resources in Al Obour Specialized Hospital. After that, the researchers phoned each nurse to obtain the agreement to be a participant in the current research, explain its purpose and method, and arrange times for the online interviews. Every participant was interviewed individually. The subjects’ interviews were held in a calm, convenient home environment during their routine vacation for a properly executed conversation. The participants worked for 15 days and performed PCR tests before taking

their vacation for another 15 days. During each interview, the interviewer and participant were alone. The interview lasted between around 45 and 90 minutes. Some participants were interviewed face-to-face via Zoom Cloud Meetings, and others were interviewed by phone according to their preferences. Written notes and a voice recorder were used to record both verbal and nonverbal cues. Each of the audio and video recordings of the interviews were converted into written statements by the researchers. The participants were assured that all recordings would be confidentially used only for research purposes.

Ethical considerations: Ethical approval was obtained first from the ethical committee at the Faculty of Nursing, Modern University for Information and Technology, Egypt with a formal approval number: (FAN10/2020). Then An agreement letter was obtained from the director of Al Obour Specialized Hospital to collect data. The participants were informed of the study’s purpose and method. Also, they were assured to have a full right to continue or withdraw at any time without penalty so written consent was obtained. The participants were assured about the confidentiality and anonymity of their data; all voice recordings, transcripts, and interview notes were kept in a computer in a specific folder with a password, and all obtained data would be ruined 5 years after the completion of the research and publication procedures.

Data analysis

The data analysis was based on Colaizzi’s phenomenological method which analyzes the psychosocial reactions of nurses caring for patients with COVID-19 and their coping patterns. It was divided into seven steps: First step; each transcript was read several times to obtain a general sense of every part of the content. Second step; For each transcript, significant statements that related to the phenomenon under study were extracted. These statements were recorded on a distinct sheet and noted their pages and line numbers. Third step; meanings from each significant statement were formulated. Fourth step; the formulated meanings were arranged into categories, clusters of themes, and major concepts (Kackin et al., 2021). Fifth step; The study findings

were integrated into an exhaustive description of the phenomenon under study. Sixth step; The fundamental structure of the phenomenon was defined. The last step: was the validation of the findings by returning to the fundamental structure statements to all participants to compare the researcher's descriptive results with their responses. Based on the participants' feedback, minor modifications were made, and the data analysis became more accurate and understandable as well as relevant to the participant's responses. Findings were discussed with three experts in Psychiatric/Mental health Nursing to ensure adequate analysis and interpretation of the data.

Colaizzi's phenomenological method (1978): It is a strategy of descriptive phenomenological data analysis in nursing research that emphasizes the psychological responses and feelings of nurses and discoveries of shared patterns rather than individual characteristics in the study subjects (Sun et al., 2020). Descriptive phenomenology is concerned with revealing the "essence" or "essential structure" of any phenomenon under investigation; it focuses on answering the "what is its question" (Morrow, et al., 2015).

Results and Discussion

The data of this study presented a sample of 18 frontline nurses working with patients with COVID-19 and fulfilled the inclusion criteria. The research findings and discussion were presented in three sections:

Section one revealed the demographic characteristics of the studied frontline nurses.

Section two demonstrated the ten themes related to psychosocial reactions as declared by studied nurses working with patients with COVID-19 during the pandemic.

Section three described the 5 themes related to the frontline nurses' coping patterns in dealing with the pandemic.

Section one revealed the demographic characteristics of the studied frontline nurses: the current study showed that the mean age of studied nurses was 27.88 ± 2.44 . 6 of them were married and male sex with the same number. Regarding residence, 11 of the studied nurses came from urban, and the others were

from rural places. All of them have a bachelor's level of education. Concerning the working area, 9 nurses worked in intensive care, 6 of them worked in the intermediate area, and 3 of them worked in the emergency department. 9 of the studied nurses attended the three waves and the remaining attended the two waves. Based on the analysis of the current results, the studied nurses declared 10 themes regarding their psychosocial experiences and 5 themes of their coping patterns at the time of covid-19 pandemic as follows:

Section two: The psychosocial reactions as reported by studied nurses:

1. *Fear of being infected and transmitting the infection to family members:* The studied nurses reported anxiety and fears of being infected by the patients because of close contact. They were afraid of being sick and dying. All of them showed alertness in the form of observing symptoms of infection as well as having obsessional thoughts of being infected. Especially after they were exposed to the patients. Furthermore, most of them informed that these obsessional thoughts and behaviors increased after the sickness and death of their colleagues in other hospitals and medical settings. In addition, the studied nurses were worried about carrying the infection to their families, and some of them (6 nurses) had guilty feelings and blamed themselves because they infected their parents.

There are some statements that illustrate the nurse's fears. "at this moment, I wash my hands hundred times, especially between the patient care", "I give the medication at 10.00 am and 12.00 pm one time to decrease the contact, I am guilty", "I was trying to decrease the unnecessary contact with the patient", "I am terrified to infect my family", "I blame myself, I caught the virus and I infect my mother", "we are frustrated from the news about the female nurse died from the virus and left her children and elderly parents". These findings and analysis were supported by Kackin et al., (2021) who mentioned that frontline nurses are worried about their safety and the spread of infection to their family, neighbors, and friends. Another qualitative

study by Abdollahimohammad& Firouzkouhi, (2020) supported the current study finding and asserted that nurses were stressed in working with patients in the isolated hospital as a result of the unusual quick spread of coronaviral infection.

2. *Feeling uncertainty about the virus and patient management:* All the studied nurses reported no clear understanding of the covid-19 and its treatment protocol. They also mentioned that patient management was confusing, and the treatment plan always quickly changed without any structured guidelines. The studied nurses described that they must care for the patients and carry out complex and unusual medical instructions, they also mentioned the lack of information about the virus and inconsistency of management makes them confused, anxious, and not satisfied with the patients' outcomes. This feeling of uncertainty among studied nurses can be noticed in the following statements; "No one has exact information about the disease", " there is a big flounder between us, no one knows the exact treatment, no one knows whether the patient is recovering or deteriorating", " I feel confused most of the time, no accurate treatment and no cure" this result was consistent with Vindrola-Padros et al., (2020) and Tremblay et al., (2021) who mentioned that there is no accurate knowledge and definite treatment plan about the virus prevention and treatment.
3. *Anxiety related to lack of preparation and essential skills for patient management during the pandemic:* There were modifications of nursing positions and turnover as reported by studied nurses especially nurses who are unprepared for working in intensive care, the studied nurses mentioned that "We are assigned to work and meet the emergency needs without preparation". The studied nurses also mentioned the routine schedules changed during the pandemic; nurses scheduled 15 days working in the hospital and the remaining 15 days were off. The hospital managers excluded pregnant nurses and nurses with chronic diseases from working in the isolated hospital. On the

other hand, the number of patients increases significantly with the presence of a small number of nurses and beds which leads the hospital not to accommodate large numbers of patients. It was observed from the studied nurses' reports that there was a lack of hospital supplies, beds, and ventilators to cover the admitted patients. Furthermore, the studied nurses reported that wearing personal protective equipment (PPE) can interfere with the mutual nurse-patient relationship and hinder the nurses' identity. Moreover, the studied nurses complained that PPE was heavy and caused difficulty breathing, headaches, and feeling hot and sweating which affects in providing the quality of care to the patients and increases both nurse and patient anxiety. The studied nurses also mentioned that "because of the heaviness of the PPE, it took a long time to reach the patient's bed, especially in an emergency situation". Correspondingly, Ranieri et al., (2021) highlighted that there is a lack of the number of health team workers, equipment, and supplies to fulfill the patient's needs during the pandemic. Another study by Have et al., (2021) found that nurses working in hospital isolation need the necessary knowledge and training related to the patients' management of respiratory distress.

4. *Feeling of inequality of being chosen as a frontline nurse:* half of the studied nurses (9 nurses) stated that "Old nurses, pregnant and nurses with chronic disease were not selected, we were obliged to work in the hospital isolation", four nurses mentioned that they were happy when they assigned to be frontline nurses", the remaining mentioned that the emotions were contradicted, sometimes feels happy as being care for the patients at the time of pandemic and many times have fears because of the spread of infection". All of the studied nurses proclaimed that "Doctors spent shorter times than us, we have to observe the patients all time, set up infusion therapy, change patient's position, and feeding, take blood gases and so on". some nurses assumed that some of the doctors' responsibilities, such as checking on patients' condition and bedside blood gas

analysis, and chest auscultation instead of doctors making nurses feel of unfairness “Sometimes we inform the doctor about the patient’s status by phone”. This finding was agreed upon by Xu et al., (2021) who found that frontline nurses feel inequality as they are the most health team members exposed to infection and are dissatisfied because of role ambiguity between them and physicians.

5. *The feeling of hopelessness and helplessness related to the pt’s bad prognosis and death:* the studied nurses reported that they feel powerlessness and inadequacy in providing care. There was a high death rate among patients and difficult recovery. One of the studied nurses stated that “sometimes we found hope that patient was improved, and sudden and unexpectedly the patient deteriorates, we were frustrated, there is no cure” Other nurses expressed several situations such as, “Patients were in pain, but I didn’t know how to comfort them”, “the most stressful situation that I had been seeing the patient talk and walk normally, and suddenly deteriorate in a short time, and put him/her body in the bag”. Besides their emotional stress and frustrations, the studied nurses meet various obstacles because of patients’ negative psychological conditions, such as depression, anxiety, agitation, and noncompliance with treatment, they mentioned, “patients feel loneliness, there is no family visit” and they also stated that “Patients always have negative attitudes toward their recovery”, “I was sad because patients died with absent the support of their families”. Furthermore, the studied nurses had posttraumatic symptoms in the form of nightmares and flashbacks about the patients’ sickness and death, they stated, “We saw dead body every moment, especially in the first two waves” Some of them (4 nurses) reported that they have depersonalization, and they see the hospital as a strange place and sometimes they found that they were detached from the environment. This finding was consistent with Mazza et al., (2020) who asserted that nurses had negative emotions such as feelings of powerlessness as a result of perceived failure in providing patient care.
6. *Concerns about the family because of a long stay in hospital isolation:* According to the hospital regulations, the frontline nurse spent two weeks working in the hospital and was not allowed to go out of their work duty. The studied nurses were worried about their families, especially old parents, and children, because of their long stay in the hospital. The following statements were reported by them; “At this moment, I was worried about my infant, she was crying and needs me”, and “I am the main caregiver of my mother, she is bedridden and is relying on me”. This finding was supported by Cho& Kim, (2021) and Coskun& Günay, (2021) who asserted that most of the frontline nurses in the study were worried about their families during their stay in the isolated hospitals.
7. *Societal stigma and rejection:* Uncertainty about the disease and treatment process and the quick spread of infection induces societal fears of contagion among the health team members, especially nurses because of their close contact with the patients. Furthermore, the misconceptions and false information from social media about the virus can exaggerate the situation. These factors can lead to societal stigma and a lack of perceived social support especially at the beginning of the pandemic. There are some of the following statements arising from the two-thirds of the studied nurses (12 nurses) in the current study:”. “At the beginning of the outbreak, I was worried about what my neighbors would do if I caught the coronaviral infection”, I did not tell my friend and neighbors that working with infected patients” I am upset because my children were hurt from my neighbors as they were the source of infection.” On the other side, one-third of nurses reported that they received appreciation and encouragement from their neighbors and other people from the village as they stated” We are happy, our neighbors appreciate our roles, and they are supporting our families at the time of our stay in the hospital. All the studied nurses also mentioned the societal stigma that happened during the

first wave of the pandemic, after that, all health team members were appreciated by the state and society as their roles were identified and appreciated, and the state honored them with “the White Army”. The current finding agreed with Abdelhafiz & Alorabi, (2020) who found that there were dangerous features of social stigma among healthcare workers in Egypt such as people being afraid to communicate with them.

8. *The feeling of loss and grief.* Because of the illness and dying of their family members and colleagues: the studied nurses in the present study experienced illness and several losses from their family members. the following statements can convey the studied nurses’ psychological sadness: ‘We have many family members who caught the infection and some of them have various complications from the virus’, ‘ I spread the infection to my parents’, ‘ We spent a difficult time because one of our family members died from the virus’, ‘ We heard our colleagues died from the virus and one of them wrote an effected diary in social media regarding her fears of death and who is taking care of her children and old parents, this makes us emotionally depressed’. The current finding was congruent with Sun et al., (2020) who mentioned frontline nurses suffered from psychological depression because of receiving several losses from their family, friends, and patients.
9. *Loneliness and Social Isolation:* Because of social restrictions resulting from the outbreak, all the studied nurses in the current study complained of loneliness and social isolation. Social distanced during their stay in the hospital from their colleagues as they were deprived of routine work interaction and the social work environment (eating together at the time of the break and communicating with each other.). They also isolated themselves at home from their family members during their time off duty. In addition, the studied nurses reported that they separated themselves from social environments because of the risks of being socially stigmatized by neighbors and of transmitting the disease to others. There are

some statements conveyed by studied nurses: “It’s better to isolate myself from my family, I am not sure if I am infected or not”, “I am lonely, I miss my friends and colleagues at work, communication is so important”, “I was upset from my neighbor, she avoids me and did not let her kids talk to my child”. This result was supported by Kalateh et al., (2020). Social restrictions and hospital precautions negatively affected emotional well-being among frontline nurses during the outbreak.

10. *Physical exhaustion and fatigue due to heavy workloads:* The nurses in the current study reported high-intensity workloads because of their shortage in number compared to the high number of admissions. Moreover, there were physical breakdowns as they said because of working under pressure such as fatigue, headache, joint pain, and dizziness. Also, there were symptoms of sleep disturbances, overexcitement, and palpitations. Some of the studied nurses also reported aggressive behavior, one nurse stated, “I made quarrelsome with the nursing supervisor because she transferred me from the intermediate unit to the intensive care, I cannot tolerate the stress of working load”. The study finding agreed with Arnetz et al., (2020) who found that more than half of frontline nurses suffered from physical exhaustion related to the work environment and burnout at the time of COVID-19.

Section three: The coping patterns used by studied nurses:

Although the presence of psychosocial problems among the studied nurses, they tried to change their negative feelings by maintaining positivity as a part of their professional responsibility as well as supporting their families. They stated that “I have to adapt and overcome difficulties for my family and children”. About half of them (8 nurses) had negative coping, especially in the initial phase of the outbreak such as social avoidance, aggressive behaviors, and tension. but they were trying to have positive attitudes and behaviors to relieve stress and combat the COVID-19 crisis outcomes. There were several factors reported by the studied nurses that

improved their positive adjustment and stress resistance: Improved nurses' professional performance and experiences, and their understanding to face the pandemic crisis. Another important factor mentioned by the studied nurses was enhancing their societal image as well and the government offered a policy to support health team workers financially and gave them the honorary title of a White Army. Furthermore, the staff members supported each other and worked as a team, and they also obtained social support from their families. There are 5 themes of coping patterns reported by the studied nurses:

1. *Mandatory education and Inservice training* that was provided by staff trainers to improve their professional performance and knowledge. As stated by the studied nurses "education and training improve our skills and become less stressful" Another nurse reported that "there was growth after pressure".
2. *Communicating with family and friends* via video calls when they are in the hospital at break time. All the studied nurses reported that they feel comfortable when they talk with their families.
3. Watching videos on YouTube, playing mobile games, and listening to music as a type of recreation. The studied nurses mentioned, "We are trying to avoid overthinking and distracting ourselves by watching funny videos and video chatting".
4. Writing about their emotional distress and negative situations in book notes or diaries on social media to obtain support, encouragement, and positive messages from people.
5. Practicing spirituality and religious activities. All the studied nurses during the pandemic crisis stated that "We need to be more connected with God for support and ask God for the blessing to overcome this hardship and protect us".

These findings were supported by Jia et al., (2021) who found that the frontlines nurses during the pandemic have active coping styles through improving their social identity and career development. Another study by Rezapour et al., (2021) supported the current

study finding and recommended frontline nurses need psychological and financial support as well as appraisals from society and the management personnel.

Conclusion

This study contributed in-depth information and understanding of the psychosocial reactions among frontline nurses and their coping patterns during the coronavirus pandemic. Based on the studied nurses' perspectives, there were 10 themes related to psychosocial problems as follows: Fear of being infected and transmitting the infection to family members, feeling uncertainty about the virus and patient management, anxiety related to lack of preparation and essential skills, the feeling of inequality, the feeling of hopelessness and helplessness related to the pt's bad prognosis and death, concerns about the family, societal stigma and rejection, feeling of loss and grief, loneliness and social isolation, and physical exhaustion and fatigue. The study also revealed that although the studied nurses had psychosocial suffering, they have 5 ways of positive coping as follows: inservice education and training, communicating with family and friends, practicing recreation activities, writing diaries, and practicing spirituality and religious activities.

Recommendations

- Providing support and psychological counseling programs for frontline nurses, especially in times of crisis, should be a part of hospital policy.
- Nursing leaders in the hospitals should be focused on supporting the frontline nurses psychologically and helping them in using positive adaptations rather than encountering pandemic challenges.
- Public education and awareness about the role of frontline nurses to appreciate their roles and prevent social stigma.
- Further qualitative and longitudinal research should be conducted to assess the impact of different stages of the COVID-19 pandemic on nurses' psychological reactions and adaptations.

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