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Documenting the Physical and Psychological Consequences of COVID-19

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A B S T R A C T

The coronavirus (COVID-19) represents a public health crisis that has imposed numerous restrictions on daily activities. The crisis conditions created by COVID-19 can lead to negative physical and psychological effects on society. In this context, the present study aims to document the physical and psychological consequences of COVID-19 using a qualitative grounded theory approach. This study is applied in its aim and qualitative in nature. The strategy employed in this research is the grounded theory method. The statistical population and sample of this study consisted of 11 individuals infected with COVID-19, who were selected through accessible and purposive sampling due to the nature of the research. This study was conducted using semi-structured interviews with COVID-19 patients until the point of data saturation was reached, and the data obtained from the interviews were subsequently analyzed. Based on the findings, the physical consequences of experiencing COVID-19 included fatigue and lethargy, severe and indescribable pain, an enhanced immune system, and restricted activities. On the other hand, the psychological consequences included experiencing anxiety, family cohesion, existential anxiety (fear of death), strengthened connection with God and spirituality, and deepened relationships. The findings of this study support the notion that every crisis has another side, which includes opportunities that arise during and after the confrontation with the crisis, providing conditions for further growth and development. Therefore, alongside necessary actions and measures such as stress and anxiety management training to prevent the compounded effects of the disease and its associated anxiety, it is also essential to leverage the positive opportunities and outcomes presented by this crisis (COVID-19).

Keywords: *Physical Consequences, Psychological Consequences, COVID-19, Grounded Theory Method.*

1. Introduction

The coronavirus (COVID-19) is a serious public health threat that has imposed numerous restrictions on daily human activities. COVID-19 is a novel and highly contagious virus that spread from China to the rest of the world in late December 2019 (1). Following the increase in cases and global spread of this virus, the World Health Organization (WHO) declared the outbreak of the novel coronavirus as the sixth public health emergency of international concern on January 30, 2020, indicating it as a threat not only to China but to all countries (2).

The coronavirus family is genotypically and serologically divided into four genera: Alpha, Beta, Gamma, and Delta. Approximately 30 types of coronaviruses have been identified in humans, mammals, and birds. The novel coronavirus, or "SARS-CoV-2," belongs to the species severe acute respiratory syndrome-related coronavirus, under the subgenus Sarbecovirus, genus Betacoronavirus, within the family Orthocoronavirinae (3). COVID-19 is the third known zoonotic coronavirus disease, following SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome), both of which also belong to the Betacoronavirus genus (4). Currently, anxiety about COVID-19 is prevalent, seemingly due to the unknowns and cognitive ambiguity surrounding the virus. The extent to which an individual's health is perceived to be threatened plays a significant role in their response to news and events and in their anxiety levels. Fear of the unknown reduces the perceived sense of safety in individuals and is anxiety-inducing, while limited scientific information exacerbates this anxiety (5). Therefore, most research on the coronavirus has focused on patient anxiety. However, in reality, during a pandemic like the coronavirus, fear of the disease and fear of death, along with disruption of daily activities, causes even healthy individuals to experience disease-related anxiety (6, 7). This anxiety has now triggered a multitude of defensive mechanisms, known as "death anxiety," which is part of a larger concept called "existential anxiety." Each of us has a profound need for immortality, stability, coexistence, and purpose in life, yet we all eventually face the inevitability of death, the transience of existence, loneliness, and meaninglessness, leading to existential anxiety (4). With the widespread outbreak of this virus, humanity is now more than ever confronted with its existential anxiety. The increase in fear and anxiety during the COVID-19 crisis has led researchers to develop the Coronavirus Anxiety Scale as a mental health screener, referred to as coronaphobia (6, 8).

Physically, the experience of anxiety and depression in these patients often accompanies an increased risk of respiratory symptoms, cough, lethargy, hospitalization, and mortality (7). The most common clinical symptoms of COVID-19 infection are fever (87.9%), cough (67.7%), fatigue (38.1%), diarrhea (3.7%), vomiting (0.5%), and other rare symptoms, similar to other animal-origin coronaviruses. Acute respiratory distress syndrome (ARDS) typically occurs approximately 9 days after the onset of infection. This virus affects not only the lungs but also other tissues, including the heart, kidneys, liver, eyes, and nervous system (9). Cardiovascular diseases, diabetes, and hypertension are already significant challenges for the global health system, causing many deaths annually. The emergence of COVID-19 and the anxiety it induces have created a level of emotional responsiveness among different individuals, potentially leading to adverse health effects (10). Therefore, as anxiety levels rise, multiple physical and psychological harms lie ahead. One of these harms is the inaccurate assessment of the level of control over the environment and risk perception. People's perception of their control over the environment is often overestimated, which can lead to less engagement in self-care behaviors. Individuals who do not perceive ambiguous and adverse situations as dangerous are less likely to take measures to avoid them, resulting in fewer self-care behaviors (11). Consequently, protective measures such as social distancing, behavioral restrictions, and quarantine may lose some of their effectiveness. Chronic illnesses impact patients' interactions with their physical and social environments, influencing their daily lives (5, 7).

Therefore, given the research background, the COVID-19 crisis can lead to numerous physical and psychological negative effects on humans. According to WHO predictions, the spread of this disease is still increasing and is expected to become the third leading cause of death worldwide by 2030. This disease has specific complexities and multiple dimensions that can significantly contribute to health, social, and economic costs for individuals, communities, and healthcare services. Currently, this disease has also spread widely in Iran, causing confusion, disruption, and changes in

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living conditions. Therefore, the present study aims to document and understand the physical and psychological consequences of COVID-19, as no comprehensive qualitative research has yet explored the experiences of recovered COVID-19 patients.

2. Methods and Materials

2.1. Study Design and Participants

This study is applied in its aim and qualitative in nature. The strategy used in this research is the "grounded theory" method. Grounded theory aims to extract concepts and patterns from background data using documentation, interviews, and observations. The statistical population and sample of this study consisted of 11 individuals infected with COVID-19, selected through accessible and purposive sampling due to the nature of the research.

2.2. Measures

2.2.1. Semi-Structured Interview

This study was conducted using semi-structured interviews with COVID-19 patients until data saturation was reached. Data saturation determined the sample size in this research, such that during data analysis, the categorization of concepts was completed, relationships between categories were well-defined, and no new codes were extracted from the data analysis. To adhere to ethical research principles, several actions were taken: explaining the research's aim and procedure, providing researcher introduction letters, obtaining informed verbal and written consent from participants to participate in the study, respecting their privacy, ensuring the confidentiality of participant information by assigning codes instead of names, and obtaining permission to record the interviews. The main interview question, based on the research objective, was "What were the physical and psychological consequences of COVID-19 for you, and what was your experience of having COVID-19?" Follow-up questions were asked to clarify participants' goals and intentions. During the interview, important points and keywords were noted.

2.3. Data Analysis

After recording the interviews, they were transcribed for data extraction. The interview content was reread multiple times to extract the latent content. Subsequently, a systematic grounded theory approach, including three stages of coding: open coding, axial coding, and selective coding, along with identifying causal, intervening, and contextual conditions, interaction and interaction data, and their outcomes, was employed in data analysis.

3. Findings and Results

In this section, we present the experiences of recovered COVID-19 patients through the research questions, using the three stages of coding: open coding, axial coding, and selective coding. The research questions were derived from the grounded theory model, and the answers were summarized based on the perspectives of the interviewees to clarify the concepts and categories.

Research Question 1: How do recovered patients define COVID-19 (what symptoms did they have)?

For instance, Participant No. 2 says, "I can say that on February 25, I had dizziness and weakness. Every day I thought I would get better with rest. I would sleep at night and wake up still unable to go to work. I went to the doctor twice, and each time they said it was a cold. I had symptoms like a runny nose, intermittent fever at certain hours, drowsiness, a lot of lethargy, hot flashes, severe physical weakness, and a lot of dry coughs. The first time the doctor prescribed medication, there wasn't much change. The second time I had an IV and felt better, but after two days it got worse again. The third time, they ordered a test. I went to a pulmonary specialist, had a CT scan, and was told I needed to be hospitalized. It took two or three days to find a bed, and finally, I was hospitalized on March 4." Another participant says, "I don't remember the exact date, but it was late February. My brother got sick for two or three days with severe headaches and body aches. We took him to the doctor, and they said it was bronchitis. Then my other brother got sick with the same symptoms, followed by my nephew and most of my colleagues, and finally me. I had a test, and they said it was COVID-19. The symptoms started with lethargy and dizziness, so severe that I couldn't stand for more than

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an hour, and my blood pressure shot up, but I was still lethargic."

Table 1

Definition of COVID-19 According to Recovered Patients

Open Codes	Axial Codes	Selective Codes
Dizziness, daily weakness, inability to go to work, runny nose, fever, drowsiness, extreme lethargy, gastrointestinal problems, shoulder pain, hot flashes, severe physical weakness, a lot of dry coughs, high blood pressure, severe lethargy, severe body pain, exhaustion, headache, prolonged coughs, chest pain, and shortness of breath.	Dizziness, weakness, body lethargy, drowsiness, prolonged dry coughs, fever	Fever, cough, lethargy, body pain

Research Question 2: What do recovered individuals believe caused their COVID-19 infection?

For example, Participant No. 5 says, "We were in the village for three or four days for Eid al-Fitr. Afterward, my home and a couple of my aunts' homes were in the village. My aunt's husband had a cough, and when we asked him about it, he said it was a stomach issue, and the doctor said it was a stomach problem. We didn't pay attention until my grandfather started coughing a day before I started having symptoms, and I was very uncomfortable that night. The next day, I started having symptoms and coughing, and my grandfather, who was in a bad condition, came home with us. He stayed with us overnight, and the next day we took him to the doctor. My grandfather and I were both coughing on the way back, and my father, mother, and sister were sitting in the back while I was driving, and my grandfather was next to me. We both had persistent dry coughs."

Table 2

Causal Conditions for Contracting COVID-19 According to Recovered Patients

Open Codes	Axial Codes	Selective Codes
Traveling to other cities to visit relatives, ignoring health and social distancing measures, disregarding initial symptoms, attending gatherings, contact with an infected person's cough or exhalation, traveling	Visiting relatives and acquaintances, not adhering to and ignoring health protocols, frequenting high-risk places like hospitals, frequenting public places, traveling	Visiting relatives, not observing personal hygiene, contact with infected individuals, traveling

Research Question 3: Where (places and related events) did the recovered individuals believe they contracted COVID-19?

One of the participants says, "We had a mask sewing workshop and a council, so we went around the city disinfecting places like gas stations, neighborhoods, hospitals, homes, ATMs, and other places. One of my tasks was to take the masks to the hospital for autoclaving and bring them back disinfected for distribution. I probably got it at the hospital because I was in contact with many places. I likely got it from an infected person or touched something contaminated. I don't know exactly because I had a lot of interactions, especially from March 5 to April 4, a month when everyone was quarantined at home, and it was a holiday, and we were working hard outside. Awareness was lower, and I got infected on April 4."

Table 3

Contextual Conditions for Contracting COVID-19 According to Recovered Patients

Open Codes	Axial Codes	Selective Codes
There's a chance I got it from my father, probably got it from my brother, frequenting crowded places, going to work, gas stations, visiting relatives	Visiting and interacting with relatives, going to public places, workplace	Interacting with others, being in public places

Research Question 4: What are the intervening conditions involved in contracting COVID-19?

One participant says, "Unfortunately, none of us wore masks because our city was in the white zone, and we had

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no cases. Suddenly a wave started, and everyone was surprised. If we had even a slight suspicion of the virus or a sick person among us, we wouldn't have gathered without masks." Another participant says, "These things I'm saying are not 100% scientific or accurate, but I've heard from doctors that those with higher weights suffer more. They say those with higher weights had more severe symptoms. My grandfather, who passed away, weighed 140 kilograms. I weighed about 95 kilograms. My uncle weighed around 110 kilograms. My father weighed about 10 kilograms less than me and therefore suffered less. Another participant said, 'This disease is such that the more you fear it, the more your body shows its symptoms, especially chest pain and shortness of breath. I had severe shortness of breath, although I think it was mostly psychological.'"

Table 4

Intervening Conditions in Contracting COVID-19 According to Recovered Patients

Open Codes	Axial Codes	Selective Codes
The city was in the white zone, we had no cases, suddenly a wave started, we were caught off guard, we didn't take illness seriously, everyone was surprised, we didn't suspect the virus or a sick person among us, it was psychological, the doctor misdiagnosed.	Ignoring symptoms and Ministry of Health warnings, having high weight, psychologically inducing illness, misdiagnosis	Self-related factors, surrounding factors, misdiagnosis

Research Question 5: What strategies did COVID-19 patients use to cope with the problems of the disease?

One participant said, "I consulted with a friend who is a nurse, and she said to avoid cocoa, coffee, strong tea, and certain other foods and spices, spicy foods, and fats, which are bad for digestion. This really improved my stomach condition. I used a few drops of lemon juice because of its antioxidants, and when I woke up for breakfast, on an empty stomach, half an hour before breakfast, I would dissolve a tablespoon of honey in a glass of water and add a few drops of lemon juice, which was very good. It relieved my stomach pain. Even now that I am recovered, I continue this practice, and it has been very beneficial for my stomach. I was familiar with traditional medicine, but I also received guidance on this specific issue."

Table 5

Strategies Used by COVID-19 Patients to Cope with the Disease

Open Codes	Axial Codes	Selective Codes
Injecting Ceftriaxone via IV, Imam Jawad's amulet, turbat, carrot juice, having blood tests, taking antiviral Acyclovir, avoiding cocoa, coffee, strong tea, and certain other foods and spices, spicy and fatty foods.	Testing for COVID-19, having CT scans, using vitamin D, Acyclovir and Favipiravir, and rheumatoid pills, avoiding fatty foods.	Home quarantine, using herbal medicines, using various pills, undergoing medical tests.

Research Question 6: What are the consequences of COVID-19 for recovered individuals?

A respondent says, "I was very sad, and it was a bad situation. The home atmosphere was really sad and depressing, but at some point, I saw that my family was very upset, so I tried to cheer them up even though I was sad and not feeling well. I pretended to be fine and said I was okay, that I'm young and have no problems. I said my body is healthy, I don't have a chronic illness that could bother me, and saying these things to cheer them up also boosted my own spirits." Another respondent says, "We had no contact with anyone in terms of visits. I was almost unaware of most people, but my uncle, aunt, and some of my cousins would call and cheer me up, and my uncle called once, and that was it. We had a few calls where they checked on me. But COVID-19 made us care more about each other. I felt more aware of life and its end. It was strange; COVID-19 created a different atmosphere."

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Table 6

Physical and Psychological Consequences for COVID-19 Patients

Open Codes	Axial Codes	Selective Codes
Extreme fear and anxiety, thinking about death, being extremely shocked, being scared, feeling strange, a special condition, a strange experience, approaching death, sadness and pain, bad situation, sad home atmosphere, helping and unity in household tasks, reducing interactions, experiencing death, intensifying and deepening relationships, connecting with God, praying, seeking intercession from Imam Reza, seeking intercession from Lady Fatima (peace be upon her), feeling lost and lethargic, exercising to strengthen oneself and the immune system.	Experiencing severe anxiety, approaching death, strange experience, confusion and bewilderment, family unity, severe and strange pain, qualitatively deepening relationships, quantitatively reducing relationships, seeking intercession from Ahl al-Bayt, connecting with God, strengthening the immune system.	Anxiety, existential anxiety, family cohesion, severe and strange pain, deepening relationships, connecting with God and spirituality, lethargy and confusion, limiting activities and interactions, strengthening the immune system.

4. Discussion and Conclusion

The findings of this study reveal that COVID-19 has profound physical and psychological impacts on individuals. The variety of symptoms described by recovered patients, such as dizziness, daily weakness, and persistent dry coughs, align with the clinical symptoms reported in the literature (7). These symptoms not only disrupted their daily lives but also contributed to significant psychological distress.

Anxiety, especially existential anxiety, emerged as a major psychological consequence. The fear of death and the unknown exacerbated anxiety levels among the patients, consistent with previous research highlighting the psychological impact of COVID-19 (12, 13). The patients' descriptions of their fear and shock, and their experiences of profound sadness and a somber home environment, underscore the deep emotional toll of the pandemic (6).

The study also highlighted several intervening conditions that contributed to the spread of COVID-19, such as lack of adherence to health protocols and initial misdiagnoses (11). These factors underscore the importance of accurate and timely information dissemination and adherence to public health guidelines to mitigate the spread of the virus.

In terms of coping strategies, the patients employed a variety of methods, including dietary adjustments and traditional medicine, which they found effective in managing their symptoms. This aligns with the broader understanding of self-care practices during health crises (8).

Family cohesion and strengthened spiritual connections were notable positive psychological outcomes. Despite the fear and anxiety, many patients reported deeper familial bonds and a stronger connection with God, which provided emotional support and resilience during their illness (10).

This study provides valuable insights into the physical and psychological consequences of COVID-19, highlighting the multifaceted impact of the virus on individuals. The findings emphasize the importance of comprehensive care approaches that address both physical symptoms and psychological well-being. Public health strategies should focus on clear communication and adherence to guidelines to prevent the spread of the virus and reduce anxiety stemming from misinformation.

Moreover, the emotional and spiritual resilience observed among patients suggests that fostering family support and spiritual well-being can be crucial in coping with the pandemic's challenges. Future research should explore these aspects further to develop holistic intervention strategies that can support individuals during and after their recovery from COVID-19.

The ongoing nature of the pandemic necessitates continuous monitoring and support for affected individuals, with an emphasis on mental health resources to address the long-term psychological impacts of COVID-19. As the WHO predicts the continued rise of this disease, it is imperative to integrate these findings into public health policies and community support systems to enhance overall health outcomes.

This study has several limitations that should be acknowledged. Firstly, the sample size was small, with only 11 participants, which may limit the generalizability of the findings to the broader population. Additionally, the use of purposive and accessible sampling methods may introduce selection bias, as the participants might not represent the full spectrum of COVID-19 experiences. The reliance on self-reported data through interviews may also be subject to recall bias and social desirability bias, potentially affecting the accuracy of the reported symptoms and experiences.

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Furthermore, the study focused on qualitative data, which, while rich in detail, may lack the quantifiable measures needed for broader epidemiological analysis. Finally, the rapidly evolving nature of the COVID-19 pandemic means that findings may become outdated as new information and treatments emerge.

Authors' Contributions

M.S., the corresponding author, conceptualized the study, designed the research methodology, and supervised the overall implementation of the study. He also conducted the semi-structured interviews and was primarily responsible for data collection and analysis using the grounded theory approach. P.S. contributed to the development of the interview guide, assisted in the recruitment of participants, and helped in coding and categorizing the data. G.S. supported the data interpretation, contributed to the literature review, and participated in drafting and revising the manuscript. All authors collaboratively discussed the findings, critically reviewed the manuscript for important intellectual content, and approved the final version for publication.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

References

1. Pastor C. Sentiment Analysis of Filipinos and Effects of Extreme Community Quarantine Due to Coronavirus (COVID-19) Pandemic. SSRN Electronic Journal. 2020. [DOI]
2. Li Z, Ge J, Yang M, Feng J, Qiao M, Jiang R, et al. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. Brain, Behavior, and Immunity. 2020;88:916-9. [PMID: 32169498] [PMCID: PMC7102670] [DOI]
3. Gorbalenya AE, Baker SC, Baric RS, de Groot RJ, Drosten C, Gulyaeva AA, et al. The species Severe acute respiratory syndrome-related coronavirus: classifying 2019-nCoV and naming it SARS-CoV-2. Nature Microbiology. 2020;5(4):536-44. [PMID: 32123347] [PMCID: PMC7095448] [DOI]
4. Farnoosh G, Alishiri G, Hosseini Zijoud SR, Dorostkar R, Jalali Farahani A. Understanding the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and Coronavirus Disease (COVID-19) Based on Available Evidence - A Narrative Review. Journal of Military Medicine. 2022;22(1):1-11. [DOI]
5. Alipour A, Ghadami A, Alipour Z, Abdollahzadeh H. Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample. Health Psychology. 2020;8(32):163-75. [DOI]
6. Masoudi Sani R, Bahmani B, Asgari A, Khanjani MS, Pakniya N. Construction, validity and reliability of existential anxiety questionnaire (QFEA). Clinical Psychology and Personality. 2020;13(2):151-62.
7. Rahmatinejad P, Yazdi M, Khosravi Z, Shahisadrabadi F. Lived Experience of Patients with Coronavirus (Covid-19): A Phenomenological Study. rph. 2020;14(1):71-86.
8. Lee S. Replication analysis of the Coronavirus Anxiety Scale. Dusunen Adam: The Journal of Psychiatry and Neurological Sciences. 2020;33. [DOI]
9. Yang Y, Lu Q-B, Liu M-J, Wang Y-X, Zhang A-R, Jalali N, et al. Epidemiological and clinical features of the 2019 novel coronavirus outbreak in China. medRxiv. 2020:2020.02.10.20021675. [DOI]
10. Pfefferbaum B, North Carol S. Mental Health and the Covid-19 Pandemic. New England Journal of Medicine. 2020;383(6):510-2. [PMID: 32283003] [DOI]
11. Zare H, Eisazadeh F. Relationship between Disease Control Perception and Risk Perception with Self- care Behaviors in Patients Discharged from Hospital Due to COVID-19: Path Analysis Study. rph. 2020;14(1):102-14.
12. Corey G. Theory and Practice of Counseling and Psychotherapy: Cengage Learning; 2017.
13. Cui S, Chen S, Li X, Liu S, Wang F. Prevalence of venous thromboembolism in patients with severe novel coronavirus pneumonia. Journal of Thrombosis and Haemostasis. 2020;18(6):1421-4. [PMID: 32271988] [PMCID: PMC7262324] [DOI]

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