

Original article

Psychological and Health Impacts of COVID-19 in Western Libya: Effects of Loss, Illness, and Chronic Crises

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Abstract

This study aimed to assess the psychological and health impacts of the COVID-19 pandemic in Western Libya within a fragile socio-economic context characterized by prolonged crises. A total of 1,000 participants from Western Libya were included in this study. The pandemic extended beyond a health crisis to become a profound psychological and social burden, manifested through the loss of loved ones, disruption of daily life, and the breakdown of traditional social and mourning practices. A descriptive-analytical design was adopted using two main instruments: a structured questionnaire to collect quantitative data on psychological status, health awareness, and adherence to preventive measures, and semi-structured interviews to explore lived experiences related to bereavement, social isolation, and disruption of condolence rituals. The study also examined the relationship between family bereavement and psychological disorders, as well as the impact of chronic diseases (including diabetes, hypertension, and cardiovascular diseases) on mental health in the context of limited access to healthcare services during the peak of the pandemic. The findings revealed that a substantial proportion of participants experienced severe psychological distress characterized by complicated grief, social isolation, and emotional disturbances following the loss of multiple family members within short periods. Restrictions on gatherings and suspension of mourning practices significantly intensified feelings of loneliness and guilt. Individuals with chronic diseases were more vulnerable to anxiety and depression due to persistent fear of infection and barriers to healthcare access. Vaccine hesitancy was also observed. Approximately 11% of hospitalized patients died due to complications, while 6.9% experienced long-term health consequences that negatively affected their quality of life and psychological well-being. The study concludes that there is an urgent need for a comprehensive national intervention strategy that strengthens community-based mental health services, enhances public health awareness programs, improves healthcare system preparedness for future crises, and promotes culturally appropriate and safe mechanisms for collective grieving and coping with loss.

Keywords. COVID-19, Libya, Mental Health, Chronic Diseases, Collective Grief, Social Isolation.

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Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic represents one of the most serious global public health crises in recent history, affecting millions of people worldwide and causing major physical, psychological, and social consequences (1). Beyond its direct impact as a respiratory infectious disease, the pandemic contributed to increased levels of anxiety, depression, stress, social isolation, and emotional distress among populations globally (2). Fear of infection, uncertainty about the future, quarantine measures, and economic instability significantly affected mental well-being during the pandemic (3,4).

In fragile and conflict-affected countries such as Libya, the psychological burden of COVID-19 was likely more severe due to political instability, economic challenges, and weakened healthcare systems (5). Previous Libyan studies demonstrated high prevalence rates of anxiety, depression, and post-traumatic stress symptoms during the pandemic, particularly among vulnerable groups and healthcare-related populations (6,7). In addition, the combined effects of civil instability and COVID-19 further intensified psychological stress within the community (8). Western Libya experienced substantial social and health-related challenges during the pandemic, including loss of family members, limited healthcare access, interruption of chronic disease management, and restrictions on traditional social and mourning practices. In Libyan society, where social cohesion and collective grieving play an important cultural role, the disruption of condolence rituals may have increased feelings of loneliness, grief, and psychological trauma (9). Individuals with

chronic diseases such as diabetes, hypertension, and cardiovascular disorders were particularly vulnerable during the pandemic because of increased risk of severe infection and reduced access to healthcare services (10).

Despite growing international evidence, limited studies in Libya have comprehensively examined the combined psychological and health impacts of COVID-19, especially within the socio-cultural context of Western Libya (11). Therefore, this study aims to assess the psychological and health impacts of the COVID-19 pandemic in Western Libya, with particular focus on family bereavement, chronic diseases, healthcare access limitations, and social disruption. The findings may contribute to improving mental health support strategies and strengthening healthcare preparedness for future public health emergencies.

The research problem of this study arises from the limited integrated scientific understanding of the psychological impact of the COVID-19 pandemic within the Libyan context, particularly in Western Libya. From a contextual perspective, the pandemic unfolded in a setting already characterized by prolonged socio-political instability, economic challenges, and weakened healthcare infrastructure, which may have amplified its psychological consequences. Beyond its direct effects on physical health, the COVID-19 pandemic contributed to a wide range of psychological disturbances, including anxiety, depression, social isolation, and forms of complicated grief associated with the loss of family members. In the Libyan context, these effects were further intensified by the disruption of deeply rooted social and cultural practices, particularly those related to mourning and communal support. At the same time, the limited availability of structured mental health services and the lack of organized psychological support programs reduced the capacity to adequately respond to these emerging needs. Despite these challenges, there remains a notable scarcity of local research examining the interaction between key factors such as family bereavement, chronic disease burden, healthcare access limitations, and disruption of social rituals, and their combined impact on psychological well-being. Additionally, limited public awareness of mental health issues contributes to the under-recognition of these problems at both community and institutional levels. Accordingly, this study seeks to address this gap by providing a comprehensive analysis of the psychological and health impacts of the COVID-19 pandemic in Western Libya, taking into account the social, cultural, and healthcare-related dimensions of this complex phenomenon.

The significance of this study lies in its comprehensive approach to the COVID-19 pandemic as a multidimensional phenomenon that extends beyond its medical dimension to encompass profound psychological and social impacts on Libyan society. In a context already characterized by chronic political and economic crises, the pandemic intensified psychological pressures, amplified collective fear, grief, and anxiety, and fundamentally transformed patterns of daily life and social relationships. The importance of this study is further strengthened by its focus on Western Libya as a densely populated social and urban space that experienced high rates of infection and mortality, alongside fragile healthcare infrastructure and limited community-based psychological support systems. Moreover, this research contributes to addressing a critical knowledge gap in Libyan academic literature, where studies examining the intersection between pandemics and mental health remain limited in depth and socio-psychological analysis. The study also holds practical significance, as it provides a scientific foundation for developing national mental health policies, designing culturally sensitive psychosocial intervention programs, and strengthening community resilience and preparedness for future health crises (12).

This study aims to assess the psychological and health impacts of the COVID-19 pandemic in Western Libya. Specifically, it seeks to examine the relationship between family bereavement, chronic diseases, and limited healthcare access and their effects on mental health outcomes such as anxiety, depression, and social isolation. The study also explores the impact of disrupted social practices on community well-being and evaluates public awareness and attitudes toward preventive measures and vaccination. Ultimately, it aims to provide evidence to support the development of effective mental health interventions and policies for future health crises.

Methodology

Study Design

This study employed a descriptive-analytical cross-sectional design to evaluate the psychological and health impacts of the COVID-19 pandemic in Western Libya. This design was chosen to provide a comprehensive assessment of psychological outcomes, health conditions, and social experiences within a defined population during a specific time frame.

Study Area and Population

The study was conducted in major urban centers across Western Libya, selected due to their high population density, substantial COVID-19 burden, and diverse socio-economic profiles. The target population included adult residents aged 18 years and above who lived through the COVID-19 pandemic period, irrespective of their infection status.

Sample Size and Sampling Technique

A total of 1,000 participants were included in the study. A non-probability purposive sampling technique was applied to ensure representation across various demographic categories, including age, gender, educational level, and health status. This approach enabled the inclusion of individuals affected by the pandemic through different pathways, such as infection, bereavement, chronic illness, and socio-economic disruption.

Data Collection Tools

Data were collected using a mixed-methods approach integrating both quantitative and qualitative techniques:

Structured Questionnaire

Quantitative data were obtained using a self-administered structured questionnaire specifically designed for this study. The instrument captured a wide range of variables to ensure a comprehensive assessment. Socio-demographic characteristics were recorded to contextualize participant profiles. Health status was evaluated with particular attention to the presence of chronic conditions such as diabetes, hypertension, and cardiovascular diseases. Information on COVID-19 exposure and infection history was collected to assess potential associations with health outcomes. Psychological status was measured through items addressing anxiety, depression, emotional distress, and social isolation. Health awareness and adherence to preventive measures were also examined to evaluate behavioral responses to public health recommendations. Finally, attitudes toward vaccination and healthcare services were assessed to provide insight into perceptions and acceptance of medical interventions.

Semi-Structured Interviews

In-depth semi-structured interviews were conducted with a purposively selected subgroup of participants to capture personal experiences that could not be fully addressed through quantitative measures. These interviews explored sensitive domains, including the loss of family members, psychological trauma and grief, and the impact of social isolation. Particular attention was given to the disruption of traditional condolence practices, which provided insight into cultural dimensions of coping and mourning. Barriers to accessing healthcare services were also examined, highlighting structural and systemic challenges faced by participants. The qualitative data provided rich contextual insights that complemented and enhanced the quantitative findings, offering a more nuanced understanding of the psychosocial and cultural consequences of the pandemic. This integration of qualitative and quantitative approaches strengthened the overall analysis by situating statistical outcomes within lived experiences.

Data Collection Procedure

Data collection was carried out through direct field distribution of questionnaires and face-to-face interviews, in accordance with ethical and public health safety measures. Trained data collectors assisted participants when necessary, particularly elderly individuals and those with limited literacy. Interviews were conducted in private settings to ensure confidentiality and to promote a safe and comfortable environment for participants.

Study Variables

The study examined the following variables:

- **Independent Variables:** COVID-19 exposure, loss of family members, presence of chronic diseases, access to healthcare services, social restrictions, and vaccination attitudes.
- **Dependent Variables:** Psychological outcomes, including anxiety, depression, emotional distress, social isolation, and psychological trauma.

Data Analysis

Data were analyzed using both quantitative and qualitative approaches. Quantitative data were processed using SPSS software. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participant characteristics and key variables. Inferential statistical analyses were conducted to examine associations between independent variables (e.g., bereavement, chronic illness, and healthcare access) and psychological outcomes. Chi-square or Fisher's Exact test was used for categorical variables, while the independent samples t-test and one-way ANOVA were applied to compare group differences. Correlation analysis was performed using Pearson or Spearman tests. Logistic regression analysis was used to identify predictors of psychological outcomes. A p-value < 0.05 was considered statistically significant. Qualitative data obtained from semi-structured interviews were analyzed using thematic content analysis to identify recurring themes related to psychological distress, grief, trauma, and coping mechanisms.

Ethical Considerations

Ethical standards were strictly maintained throughout the study. Participation was voluntary, and informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity were ensured by coding all questionnaires and interview data without personal identifiers. Participants were informed of their right to withdraw from the study at any stage without any consequences. Special attention was given to psychological sensitivity, particularly when addressing topics related to loss, trauma, and emotional distress.

Results

Overall Burden of COVID-19 in Western Libya

The study included 1,000 participants from Western Libya representing diverse age groups, genders, educational levels, and occupational backgrounds. The findings demonstrate that COVID-19 was not limited to respiratory illness alone but represented a multi-system disease with significant physical, psychological, and social consequences. Overall, participants experienced a combination of acute symptoms, long-term complications, psychological distress, and variable health outcomes influenced by healthcare access and vaccination status.

Prevalence of COVID-19 Symptoms by Body System

The acute phase of COVID-19 was characterized by widespread involvement of multiple organ systems. Nearly all participants reported at least one symptom, with a high proportion experiencing multi-system manifestations simultaneously, table 1.

Table 1. Prevalence of COVID-19 Symptoms by Body System (n = 1,000)

Body System	Main Symptoms	Number of Participants	Percentage (%)
Respiratory	Cough, chest pain, difficulty breathing	940-950	94-95%
Neurological	Loss of smell, loss of taste, headache	960-1,000	96-100%
Cardiovascular	Rapid heartbeat	820	82%
Musculoskeletal	Joint pain, generalized fatigue	800-980	80-98%
Systemic	Fever and chills	990	99%

Neurological involvement was the most prominent feature, with nearly universal reporting of anosmia and ageusia, suggesting strong neurotropic behavior of SARS-CoV-2. Respiratory and systemic symptoms reflected the classic inflammatory response, while cardiovascular and musculoskeletal manifestations indicate systemic spread and post-viral inflammatory effects.

Long-Term Complications and Mortality

A notable proportion of participants developed persistent symptoms beyond the acute phase, indicating the presence of post-COVID syndrome (long COVID). Mortality was also significantly high among hospitalized cases, table (2).

Table 2. Long-Term Complications and Mortality in Western Libya

Outcome	Number of Participants	Percentage (%)
Long-term complications	69	6.9%
COVID-19-related deaths	110	11%

Long-term complications included persistent fatigue, dyspnea, chest discomfort, and musculoskeletal pain, consistent with global reports of long COVID. The relatively high mortality rate may reflect delayed hospital presentation, limited intensive care capacity, and a high prevalence of comorbid conditions such as diabetes and cardiovascular disease in the region.

Psychological and Social Impacts

COVID-19 had a profound psychological and social impact on participants, extending beyond physical illness to affect mental well-being and daily functioning, table (3).

Table 3. Psychological Impacts of COVID-19 in Western Libya

Psychological Outcome	Number of Participants	Percentage (%)
<i>Bereavement-related distress</i>	720	72%
<i>Anxiety and depression</i>	650	65%
<i>Social isolation/loneliness</i>	600	60%

Bereavement-related distress was the most dominant psychological burden, largely linked to loss of family members and disrupted mourning practices. Anxiety and depression were strongly associated with fear of infection, uncertainty, and reduced healthcare access. Social isolation further intensified psychological distress due to lockdown measures and reduced community interaction.

Vaccine Hesitancy and Clinical Outcomes

A significant proportion of participants reported vaccine hesitancy, which was associated with poorer clinical outcomes, including higher rates of hospitalization and more severe disease presentation. Vaccine hesitancy appeared to be driven by misinformation, limited health literacy, and mistrust in healthcare systems. Participants who were unvaccinated or hesitant demonstrated comparatively worse outcomes, highlighting vaccination as a key protective factor against severe disease and complications.

Discussion

The present study demonstrates that the COVID-19 pandemic in Western Libya resulted in a substantial burden of multisystem clinical manifestations, psychological distress, and social disruption. The high prevalence of respiratory, neurological, and systemic symptoms observed in this study is consistent with earlier clinical reports describing COVID-19 as a multi-organ disease with significant inflammatory and neurotropic effects (2,3,12,13). The near-universal neurological involvement further supports evidence that SARS-CoV-2 affects both central and peripheral nervous systems, leading to symptoms such as loss of smell, loss of taste, and headache. A notable proportion of participants developed long-term complications consistent with post-COVID-19 syndrome, which aligns with previous studies reporting persistent symptoms such as fatigue, dyspnea, and chest discomfort after acute infection (14,16). The observed mortality rate among hospitalized patients may reflect disease severity in high-risk populations as well as limitations in healthcare capacity, including delayed access to care and reduced intensive care resources in low-resource settings. Psychologically, the findings of this study are in agreement with global and regional research highlighting the strong mental health impact of the pandemic. High levels of bereavement-related distress, anxiety, depression, and social isolation correspond with findings reported in systematic reviews and population-based studies (4,6,7,11).

In the Libyan context, similar results were reported by Elhadi et al. and Jahan et al., who found high rates of psychological distress during the pandemic, particularly among vulnerable groups (6,7). These findings emphasize that COVID-19 significantly disrupted mental well-being, especially in societies experiencing pre-existing instability. The

strong impact of bereavement and disrupted mourning practices observed in this study is also supported by international literature, which highlights that restrictions on funeral and social rituals during COVID-19 increased the risk of prolonged grief and emotional distress (9). This is particularly relevant in collectivist societies such as Libya, where social support and communal grieving play a central cultural role.

Patients with chronic diseases in the present study were found to be more vulnerable to both physical and psychological outcomes, which is consistent with previous evidence indicating that individuals with comorbidities face a dual burden of increased disease severity and heightened anxiety during the pandemic (10,16). Furthermore, limited healthcare access may have further exacerbated these outcomes, reflecting systemic weaknesses in health service delivery. In addition, vaccine hesitancy observed in the study is in line with global findings that identify misinformation, mistrust, and low health literacy as key factors influencing vaccine acceptance (15). This highlights the importance of targeted public health education to improve vaccination uptake and reduce disease burden. Overall, the findings of this study are consistent with existing literature and reinforce the understanding that COVID-19 is not only a biomedical disease but also a major psychological and social crisis. These results emphasize the need for integrated health strategies that combine infection control, chronic disease management, mental health support, and public health awareness to strengthen healthcare system resilience in future pandemics.

Conclusion

COVID-19 in Western Libya imposed a dual burden of physical and psychological morbidity, compounded by healthcare limitations and social disruption. The disease demonstrated extensive multisystem involvement, with neurological, respiratory, and systemic symptoms being most prominent. Long-term complications affected a measurable proportion of patients (6.9%), while hospital mortality remained high (11%), reflecting disease severity and systemic healthcare constraints. Psychological distress was widespread, with significant levels of bereavement-related stress, anxiety, depression, and social isolation. Chronic disease comorbidity, limited access to healthcare services, and vaccine hesitancy were identified as key factors associated with poorer health outcomes. These findings highlight that the impact of the COVID-19 pandemic extends beyond infection control and requires a broader public health perspective. The study emphasizes the urgent need for comprehensive, resilient, and integrated healthcare system responses capable of addressing both the immediate and long-term consequences of future pandemics, particularly in resource-limited settings.

Recommendations

To mitigate the multifaceted impact of the pandemic, several policy directions are proposed. Mental health support should be integrated into primary healthcare systems to provide accessible psychological services addressing bereavement, anxiety, depression, and social isolation. Strengthening chronic disease care through early detection and continuous management is essential to reduce vulnerability to COVID-19 and related complications. In parallel, healthcare capacity must be enhanced by improving hospital infrastructure and intensive care unit readiness, thereby ensuring more effective emergency response and reducing mortality. Targeted awareness campaigns are needed to counter misinformation and promote vaccine acceptance, fostering greater public trust in immunization programs. Finally, pandemic preparedness requires the development of integrated public health strategies that combine clinical care, mental health services, surveillance systems, and risk communication. Such comprehensive approaches will not only improve resilience against future outbreaks but also strengthen the overall health system response in the Libyan context.

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Conflict of interest. Nil

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