

Mental Health Consequences of the COVID-19 Pandemic: A Narrative Review

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Summary

The COVID-19 pandemic has generated a profound psychological impact across diverse populations, exposing long-standing gaps in mental health services and intensifying social inequalities. This narrative review explores the most prevalent mental health conditions associated with the pandemic—including depression, anxiety, stress, and post-traumatic stress disorder (PTSD)—with emphasis on population-specific vulnerabilities such as gender, age, social status, and chronic illness. Special attention is given to the bidirectional relationship between mental and physical health, the role of social support, and behavioral mediators of psychological distress. The review underscores the need for systemic, multi-level public health responses that integrate mental health into pandemic preparedness, healthcare delivery, and social policy. Lessons learned from the COVID-19 crisis offer a unique opportunity to redefine mental well-being as a global public health priority.

Key words: COVID-19 pandemic, mental health, depression, anxiety, PTSD, risk factors for mental health

Introduction

The COVID-19 pandemic has left a profound and multilayered impact not only on global physical health but also on mental and emotional well-being. From the early emergence of the SARS-CoV-2 virus, societies worldwide were confronted with a sudden disruption of daily life characterized by physical isolation, lockdowns, economic instability, loss of loved ones, and continuous exposure to media coverage that amplified perceived threat and uncertainty. In such a climate, stress became chronic, anxiety increasingly prevalent, and depressive symptoms widespread across various population groups [3].

It soon became evident that the psychological consequences of the pandemic extended far beyond short-term fear responses. They encompassed a broad range of mental health conditions, including mood and anxiety disorders, post-traumatic stress disorder (PTSD), and various forms of psychological distress which, although subclinical, significantly impaired everyday functioning and quality of life [4].

Moreover, the pandemic exacerbated existing disparities in access to healthcare and mental health services, particularly among socially vulnerable populations such as the elderly, women, individuals with chronic illnesses, the unemployed, and those with low income or limited social support [5]. At the same time, healthcare workers were exposed to persistent psychological strain and occupational burnout, highlighting the urgent need for systemic mental health support [17].

Given the historically limited prioritization of mental health in many healthcare systems, institutional responses were often delayed and insufficient. Consequently, COVID-19 served as a wake-up call for a fundamental reassessment of how mental health is integrated into public health, education, employment, and social policy [1].

The aim of this narrative literature review is to explore the major mental health disorders associated with the COVID-19 pandemic, identify key risk and protective factors, and analyze population-specific vulnerabilities. Particular attention is devoted to the comorbidity between chronic physical conditions and mental health, the role of perceived social support, and the potential for public health interventions to mitigate both the immediate and long-term psychological consequences of the pandemic.

Concept and Definitions of Mental Health

Mental health is more than the absence of mental illness, it represents an individual's capacity to maintain internal equilibrium, engage meaningfully in society, and adapt to life's challenges. It encompasses emotional, cognitive, and social well-being, enabling individuals to realize their abilities, cope with normal stresses, work productively, and contribute to their communities [1].

The World Health Organization (WHO) defines mental health as: "A state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to his or her community". While this definition marked a significant shift from viewing mental health merely as the absence of mental disorder, it has also raised some critical questions. Emphasizing positive feelings and high functioning as universal criteria can overlook cultural, contextual, and personal differences in how mental well-being is experienced and expressed [2].

In response to the need for a more inclusive, culturally sensitive understanding, Galderisi and colleagues proposed a broader conceptual framework. Their definition emphasizes mental health as a dynamic internal state of balance, shaped by interactions among biological, psychological, and social factors [2].

According to their proposal: "Mental health is a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society. Basic cognitive and social skills; the ability to recognize, express, and modulate one's own emotions; empathy with others; flexibility and ability to cope with adverse life events and function in social roles; and a harmonious relationship between body and mind are key components of mental health". This integrative definition reflects the multifaceted nature of mental health. It includes essential elements such as emotional regulation, cognitive capacity, social functioning, resilience, and the interconnection between mind and body all of which contribute to an individual's psychological stability and overall quality of life [2].

In summary, mental health is not a static or binary condition. Rather, it is a continuum, ranging from optimal well-being to severe psychological distress, shaped by a complex interplay of genetic, environmental, social, and personal variables. This conceptual understanding serves as a foundation for analyzing the pandemic's impact on mental health in the broader context of population vulnerability and resilience.

Depression, Anxiety, and Stress in the Context of the Pandemic

The COVID-19 pandemic acted as a catalyst for a global surge in mental health disorders. The psychological toll of uncertainty, social isolation, economic hardship, and fear of illness manifested in a significant rise in depressive symptoms, generalized anxiety, acute stress, and even trauma-related disorders [3].

Depression

Depression is one of the most prevalent and disabling mental health conditions observed during the pandemic. Characterized by persistent sadness, loss of interest or pleasure, sleep disturbances,

appetite changes, fatigue, low self-worth, and difficulty concentrating, depression became increasingly common across all age groups [5].

According to global estimates, the prevalence of major depressive disorder increased by more than 25% in 2020 compared to previous years, largely as a consequence of pandemic-related stressors (such as job loss, isolation, bereavement, and disruption of daily routines) [3]. In more severe cases, depressive episodes led to suicidal ideation and self-harm, particularly in vulnerable individuals [6].

Importantly, depressive symptoms did not always meet diagnostic criteria for major depressive disorder but still significantly impaired daily functioning. This phenomenon referred to as subthreshold or subclinical depression was especially noted in young people, caregivers, and individuals with a history of psychological vulnerability [7].

Anxiety

Anxiety disorders were among the most frequently reported psychological responses to the pandemic. Generalized anxiety disorder (GAD), health anxiety, and various forms of phobia (particularly fear of contagion and fear of social contact) were prominent [4].

Typical symptoms included excessive worrying, restlessness, muscle tension, and difficulties concentrating or sleeping. Health-related anxiety was fueled by uncertainty surrounding the virus, misinformation, and constant exposure to alarming media content [8].

Studies consistently show that women, young adults, and healthcare professionals were at a particularly elevated risk for anxiety. Women were more likely to experience anxiety related to

caregiving roles and health concerns, while healthcare workers reported high levels of anticipatory stress and emotional exhaustion [17].

Stress and Post-Traumatic Stress Disorder (PTSD)

Acute and chronic stress were hallmark responses to the prolonged and unpredictable nature of the pandemic. Individuals reported elevated psychological tension, irritability, and somatic complaints (e.g., headaches, fatigue, chest discomfort), often without a clear medical explanation [9].

In more severe cases, especially among those who had been hospitalized due to COVID-19 or had witnessed traumatic events (e.g., mass deaths in intensive care units), symptoms met criteria for post-traumatic stress disorder (PTSD). Intrusive memories, nightmares, emotional numbing, and hyperarousal were frequently documented [19].

In healthcare professionals, prolonged exposure to suffering, ethical dilemmas, and a lack of institutional support significantly contributed to PTSD-like symptoms. These experiences often co-occurred with depressive and anxiety disorders, creating a complex clinical picture of psychological distress [20].

Population Characteristics: Gender, Age, and Social Status

The psychological impact of the COVID-19 pandemic has not been uniformly distributed across all segments of the population. Instead, it has followed recognizable patterns related to gender, age, education level, employment status, and social context. These population-level differences reflect broader socio-biological and cultural determinants of mental health [10].

Gender Differences

Research consistently shows that women were disproportionately affected by the mental health consequences of the pandemic. Rates of anxiety, depression, and stress-related disorders were significantly higher among women compared to men during lockdowns and subsequent phases of the pandemic. This disparity has been attributed to a combination of biological, psychological, and social factors [11].

From a biological perspective, hormonal fluctuations and a higher reactivity of the hypothalamic-pituitary-adrenal (HPA) axis in women may partly explain their increased vulnerability to stress-related conditions. Psychosocially, women were more likely to bear caregiving burdens, face gender-based violence, and experience economic insecurity, particularly in informal or precarious employment sectors [12].

Additionally, gender roles and expectations often placed women in emotionally demanding situations (e.g., managing home schooling, family caregiving, and domestic tasks) during periods of lockdown and school closure, further exacerbating psychological strain [13].

Age-Related Vulnerabilities

Mental disorders occur throughout the lifespan, but the pandemic highlighted specific age-related vulnerabilities:

- Children and adolescents experienced abrupt educational disruption, social isolation, and increased exposure to family stress or conflict. These factors heightened the risk of developing emotional dysregulation, anxiety, and depressive symptoms. Adverse childhood experiences

during this period may have long-lasting effects on cognitive, emotional, and social development [12].

- Working-age adults faced unemployment, economic instability, and an increase in domestic responsibilities. The loss of income and job security emerged as significant stressors. For some, remote work blurred boundaries between professional and personal life, leading to burnout and psychological exhaustion [14].

- Older adults were at risk not only of severe COVID-19 complications but also of mental health decline due to social isolation, loss of autonomy, bereavement, and fear of dying alone. Preexisting health conditions, cognitive impairment, or limited digital literacy often prevented them from accessing support or maintaining social contact during lockdowns [15].

Notably, aging populations already have higher rates of depression, anxiety, and neurocognitive disorders, such as dementia. The pandemic further intensified the psychological burden in this group, sometimes resulting in clinical decompensation [16].

Social and Educational Status

Socioeconomic status (SES) emerged as a powerful determinant of mental health during the pandemic. Individuals with lower income, unstable housing, and lower levels of education were more likely to experience psychological distress, due in part to reduced access to healthcare, digital resources, and social safety nets [18].

Educational attainment is positively associated with health literacy, economic opportunity, and stress management capacity. More educated individuals were better able to interpret public

health information, adjust to remote working environments, and engage in adaptive coping strategies [18].

Conversely, unemployment, low-skilled labor, and precarious living conditions were associated with a higher risk of psychological distress and clinical disorders. Social inequalities exacerbated the mental health gap, disproportionately affecting marginalized populations and perpetuating cycles of vulnerability [21].

Social Support and Psychological Resilience

Social support is one of the most robust protective factors against the development of mental disorders. During the COVID-19 pandemic, the availability, perception, and quality of interpersonal relationships significantly influenced individuals' ability to cope with stress, fear, and loss. Alongside formal systems of care, informal social networks acted as essential buffers against psychological distress [22].

Role of Perceived Social Support

Perceived social support refers to an individual's belief that they are loved, cared for, and valued by others. It includes emotional, instrumental, informational, and companionship-based support. During the pandemic, individuals who reported high levels of perceived support from family, friends, and the broader community demonstrated lower rates of depression, anxiety, and loneliness [23].

In particular, interpersonal closeness was associated with enhanced emotion regulation, increased motivation, and a reduced sense of helplessness. Virtual contact (e.g., video calls, messaging, and social media) served as an important substitute for face-to-face interaction,

especially among younger populations and those in urban centers. However, for older adults and digitally excluded groups, the inability to access or use communication technologies further exacerbated isolation and psychological vulnerability [24].

Studies show that individuals with strong social support networks had up to 40% lower likelihood of developing moderate to severe forms of mental distress during the pandemic. This finding underscores the importance of both subjective and objective measures of social connection in mental health promotion strategies [25].

Community and Cultural Resources

Beyond the individual level, collective and cultural systems also contributed to mental resilience. Religious and spiritual communities, neighborhood networks, and mutual aid groups provided not only material assistance but also a sense of meaning, belonging, and shared identity. These elements helped people reinterpret adversity and maintain a hopeful outlook [26].

Cultural narratives that emphasize solidarity, altruism, and shared responsibility have been shown to enhance communal coping mechanisms. In contrast, societies with high levels of individualism or social fragmentation may have faced additional challenges in mobilizing collective mental health resources during periods of crisis [27].

Psychological Resilience and Adaptive Capacity

Psychological resilience refers to the ability to recover from adversity, adapt to changing circumstances, and maintain mental stability despite external stressors. It is influenced by both intrinsic traits (e.g., self-efficacy, optimism, cognitive flexibility) and extrinsic factors (e.g., support systems, stable environment) [29].

Resilient individuals tend to use adaptive coping strategies such as problem-solving, reframing, mindfulness, and social engagement, as opposed to maladaptive strategies like avoidance or substance use. During the pandemic, resilience was positively correlated with physical health, occupational functioning, and relationship satisfaction [30].

Public health efforts that promoted mental resilience through psychoeducation, community engagement, and access to telepsychology showed promising results in mitigating the psychological impact of the pandemic. Resilience is not merely a personal trait but a capacity that can be cultivated and supported through structured intervention and policy design [31].

Mental Health and Chronic Physical Illness

The interplay between chronic physical illness and mental health has long been recognized as bidirectional and complex. The COVID-19 pandemic further illuminated this relationship, as individuals with pre-existing somatic conditions not only faced a higher risk of severe infection but also experienced elevated psychological distress due to health-related fears, disrupted care, and social isolation [32].

Vulnerability of Individuals with Chronic Conditions

Patients living with chronic diseases such as cardiovascular disorders, diabetes mellitus, chronic obstructive pulmonary disease (COPD), and cancer reported significantly higher rates of anxiety, depression, and stress-related symptoms during the pandemic. These individuals often had reduced immune resilience, heightened perceptions of threat, and frequent exposure to medical environments, all of which contributed to increased psychological vulnerability [33].

In many cases, routine medical services were postponed or suspended, exacerbating uncertainty and leading to feelings of abandonment or hopelessness. The lack of access to continuous care further destabilized patients' sense of security and contributed to emotional dysregulation [34].

Furthermore, comorbid mental disorders have been associated with worse outcomes in chronic disease management, including lower medication adherence, poorer self-care behaviors, and more frequent hospitalizations. Mental distress can impair decision-making, exacerbate physical symptoms, and diminish motivation for recovery [35].

Shared Pathophysiological Mechanisms

There is growing recognition of shared biological mechanisms between chronic physical illnesses and mental disorders. In particular, low-grade systemic inflammation has been implicated as a common pathway underlying both depression and chronic diseases [36].

Pro-inflammatory cytokines such as IL-6, TNF-alpha, and CRP have been found in elevated levels in patients with depression and anxiety, suggesting that neuroinflammation may play a critical role in the pathogenesis of mood disorders. Similarly, dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, often observed in stress and depression, can negatively impact glucose metabolism, blood pressure regulation, and immune responses [37].

This overlap emphasizes the need for integrated biopsychosocial models of care that consider the mind-body connection, particularly in pandemic conditions where both mental and physical health systems are under strain [38].

Cancer and Psychological Burden During the Pandemic

Cancer patients represent a particularly high-risk group, both in terms of COVID-19 morbidity and psychological distress. Delayed treatments, fear of infection during hospital visits, and reduced access to palliative care significantly impacted their emotional well-being. High levels of health-related anxiety and existential fear were reported, especially among those undergoing chemotherapy or facing terminal diagnoses [39].

Psycho-oncological support, already a critical aspect of cancer care, became even more essential during the pandemic. Remote counseling, peer support networks, and tailored communication strategies were implemented in some settings, though access remained uneven [40].

Conclusion

The COVID-19 pandemic has revealed mental health to be both a determinant and a consequence of public health crises. Its psychological impact extends beyond viral infection to encompass economic, social, and emotional dimensions of human life. The widespread rise in depression, anxiety, stress, and trauma underscores the need for systemic transformation in how mental health is understood, addressed, and integrated into disaster preparedness and recovery planning.

By identifying at-risk populations, promoting protective behaviors, and ensuring equitable access to mental health care, societies can foster resilience and collective healing. The pandemic has not only challenged the global health community—it has also offered a unique opportunity to redefine mental well-being as a universal priority.

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Posljedice pandemije COVID-19 na mentalno zdravlje: narativni pregled

Pandemija COVID-19 imala je dubok i višeslojan uticaj na mentalno zdravlje različitih populacija, ukazujući na dugotrajne manjkavosti u sistemima psihološke podrške i dodatno produbljujući socijalne nejednakosti. Ovaj narativni pregled analizira najčešće psihičke poremećaje tokom pandemije uključujući depresiju, anksioznost, stres i posttraumatski stresni poremećaj (PTSP) uz poseban fokus na rizične grupe u odnosu na pol, starosnu dob, socijalni status i hronične bolesti. Posebno se razmatra međuzavisnost fizičkog i mentalnog zdravlja, uloga socijalne podrške i ponašajni faktori koji posreduju psihološkom distresu. Zaključuje se da je neophodan sistemski i višeslojni pristup javnog zdravstva koji integrira mentalno zdravlje u odgovore na krize, zdravstvenu zaštitu i socijalnu politiku. Pandemija COVID-19 predstavlja jedinstvenu priliku za redefinisane mentalnog zdravlja kao globalnog prioriteta javnog zdravlja.

Ključne riječi: pandemija COVID-19, mentalno zdravlje, depresija, anksioznost, PTSD, faktori rizika za javno zdravlje