










Review

Challenges and Implications of the COVID-19 Pandemic on Mental Health: A Systematic Review

Abdullahi Rabi Abubakar ¹, Maryam Abba Tor ², Joyce Ogidigo ³, Ibrahim Haruna Sani ⁴, Adekunle Babajide Rowaiye ³, Mansur Aliyu Ramalan ¹, Sani Yahaya Najib ⁵, Ahmed Danbala ⁶, Fatima Adamu ⁷, Adnan Abdullah ⁸, Mohammed Irfan ⁹, Santosh Kumar ¹⁰, Ayukafangha Etando ¹¹, Sayeeda Rahman ¹², Susmita Sinha ¹³, and Mainul Haque ^{14,*}

- ¹ Department of Pharmacology and Therapeutics, Faculty of Pharmaceutical Sciences, Bayero University, Kano-700233, Kano PMB 3452, Nigeria; unisza7@gmail.com (A.R.A.); mmramalan@gmail.com (M.A.R.)
- ² Department of Health and Biosciences, University of East London, University Way, London E16 2RD, UK; maryamabbator@yahoo.com
- ³ National Biotechnology Development Agency, Abuja 09004, Nigeria; jogidigo@yahoo.com (J.O.); adekunlerowaiye@gmail.com (A.B.R.)
- ⁴ Department of Clinical Pharmacology and Therapeutics, College of Health Sciences, Yusuf Maitama Sule University, Kofar Kansakali-700282, Kano PMB 3220, Nigeria; harunaibrahim81@yahoo.com
- ⁵ Department of Pharmaceutical and Medicinal Chemistry, Bayero University, Kano 700233, Nigeria; najibsani62@gmail.com
- ⁶ Department of Pharmacology and Toxicology, Faculty of Pharmaceutical Sciences, Kaduna State University, Kaduna 800283, Nigeria; ahmed.danbala@kasu.edu.ng
- ⁷ Department of Community Medicine, Aminu Kano Teaching Hospital, Kano 700233, Nigeria; fatimahrufaidda@gmail.com
- ⁸ Unit of Occupational Medicine, Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia (National Defence University of Malaysia), Kuala Lumpur 57000, Malaysia; dradnanabdu-lah@upnm.edu.my
- ⁹ Instituto Odontológico das Américas (IOA-Pelotas), 1399—Centro, Pelotas 96020-360, RS, Brazil; irfan_dentart@yahoo.com
- ¹⁰ Department of Periodontology and Implantology, Karnavati School of Dentistry, Karnavati University, 907/A, Uvarsad, Gandhinagar 382422, Gujarat, India; santosh@ksd.ac.in
- ¹¹ Department of Medical Laboratory Sciences, Faculty of Health Sciences, Eswatini Medical Christian University, P.O. Box A624, Swazi Plaza Mbabane, Mbabane H101, Hhohho, Eswatini; etta5013@gmail.com
- ¹² Department of Pharmacology and Public Health, School of Medicine, American University of Integrative Sciences (AUIS), Bridgetown BB 11114, Barbados; srahman@auis.edu
- ¹³ Department of Physiology, Khulna City Medical College and Hospital, 33 KDA Avenue, Hotel Royal Mor, Khulna Sadar, Khulna 9100, Bangladesh; sinhasusmita24@gmail.com
- ¹⁴ Unit of Pharmacology, Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia (National Defence University of Malaysia), Kuala Lumpur 57000, Malaysia
- * Correspondence: runurono@gmail.com or mainul@upnm.edu.my; Tel.: +60-109265543



Citation: Rabi Abubakar, A.; Tor, M.A.; Ogidigo, J.; Sani, I.H.; Rowaiye, A.B.; Ramalan, M.A.; Najib, S.Y.; Danbala, A.; Adamu, F.; Abdullah, A.; et al. Challenges and Implications of the COVID-19 Pandemic on Mental Health: A Systematic Review. *Psych* **2022**, *4*, 435–464. <https://doi.org/10.3390/psych4030035>

Academic Editor: Mosad Zineldin

Received: 19 June 2022

Accepted: 28 July 2022

Published: 1 August 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract: The measures put in place to contain the rapid spread of COVID-19 infection, such as quarantine, self-isolation, and lockdown, were supportive but have significantly affected the mental wellbeing of individuals. The primary goal of this study was to review the impact of COVID-19 on mental health. An intensive literature search was conducted using PsycINFO, PsyciatryOnline, PubMed, and the China National Knowledge Infrastructure (CNKI) databases. Articles published between January 2020 and June 2022 were retrieved and appraised. Reviews and retrospective studies were excluded. One hundred and twenty-two (122) relevant articles that fulfilled the inclusion criteria were finally selected. A high prevalence of anxiety, depression, insomnia, and post-traumatic stress disorders was reported. Alcohol and substance abuse, domestic violence, stigmatization, and suicidal tendencies have all been identified as direct consequences of lockdown. The eminent risk factors for mental health disorders identified during COVID-19 include fear of infection, history of mental illness, poor financial status, female gender, and alcohol drinking. The protective factors for mental health include higher income levels, public awareness, psychological counseling, social and government support. Overall, the COVID-19 pandemic has caused a number of mental disorders in

addition to economic hardship. This strongly suggests the need to monitor the long-term impact of the COVID-19 pandemic on mental health.

Keywords: pandemic; mental health; COVID-19; lockdown; anxiety; depression; stress

1. Introduction

The severe acute respiratory syndrome caused by coronavirus 2 (SARS-CoV-2) was first discovered in late 2019 in Hubei Province, Wuhan, China. The infection spread rapidly across the globe, and on March 11, 2020 was named the COVID-19 pandemic by the World Health Organization (WHO) [1–3]. The SARS-CoV-2 and the earlier SARS-CoV-1 are both zoonotic viruses, and evidence suggests that about half of zoonotic viruses are neurotropic because they invade the central nervous system. The neurotropic viruses infect brainstem nuclei, disrupting the regular rhythms and homeostatic control of respiration. During SARS-CoV-1 in 2003 and Middle East Respiratory Syndrome in 2012, many patients exhibited neurotoxic symptoms, leading to neurological and mental disorders [4–8]. However, scientists have yet to establish whether SARS-CoV-2 infection in the brain, in addition to lockdown, causes neurodegenerative or mental disorders. Therefore, there is a need to monitor the long-term impact of SARS-CoV-2 infection in the brain [4–9]. In general, the neurological symptoms of viral infection in the central nervous system (CNS) include delirium, dizziness, loss of smell and taste, headache, loss of consciousness, generalized body weakness, muscle pain, and cerebrovascular complications, Figure 1 [4,5].

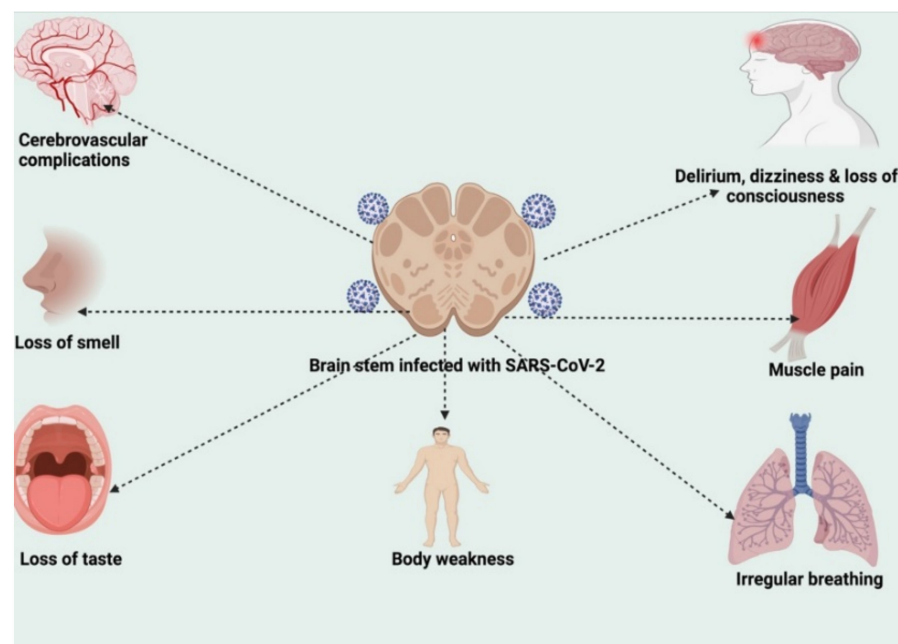


Figure 1. Some neurological signs of COVID-19 infection.

The SARS-CoV-2 infection has undoubtedly caused unprecedented morbidity and mortality worldwide. As a result, WHO and countries strategized suitable countermeasures to curb the fast spread of the SARS-CoV-2 infection. These include travel restrictions and the closure of public places such as markets, schools, train stations, airports, seaports, etc. Others are physical distancing, self-isolation, use of facemasks, and hygienic practices like frequent hand washing and hand sanitizer [1,3,9]. Indisputably, these have led to the social and economic shutdown which is very detrimental to the individual's mental health. Several factors were responsible for the association between the COVID-19 pandemic and mental illness. These include anger, hopelessness, sleepless nights, loneliness, and a

significant increase in house chores in the presence of everyone being at home [1,3,9,10]. Mental disorders are highly prevalent and are one of the most neglected diseases worldwide. Common examples of mental illnesses include stress, insomnia, anxiety, depression, and post-traumatic stress disorders (PTSD); see Figure 2. These mental disorders are frequently associated with substance use, and in some cases suicidal tendencies [1,3,6,9–13]. Notably, a number of recent reviews and meta-analyses have reported a high prevalence of mental disorders [14–21].

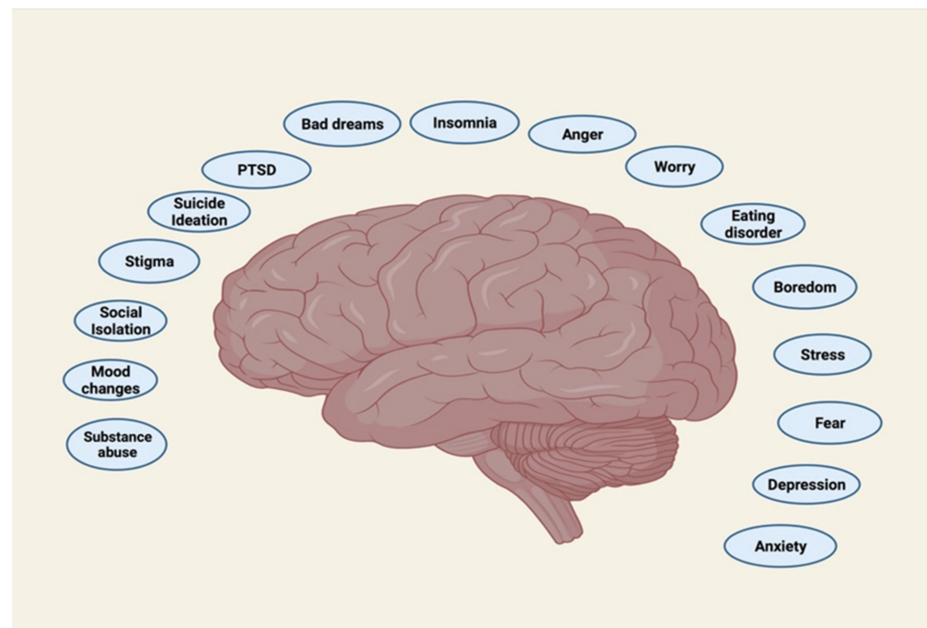


Figure 2. Mental disorders and impacts of lockdown associated with COVID-19.

Studies involving the CNS have reported neurological symptoms of COVID-19 infection with different levels of severity. Butowt et al. reported anosmia and ageusia, indicating that the infection has invaded the neurons [22]. Delirium and post-infectious Guillain-Barre syndrome (GBS) were identified as late symptoms [23,24]. Sabel et al. revealed that post-coverage cognitive deficits were also common in some cases [25]. Cao et al. observed that the pro-inflammatory cytokines directly affect the brain, and later thrombogenesis may cause stroke [26]. The overall effect of COVID-19 pandemic on the brain suggests that the virus may produce mental disorders in the long run. The SARS-CoV-2 virus directly attaches to the angiotensin-converting enzyme (ACE) receptor from where it enters a cell and replicates. The host cells then release a suppressed T-cell implying a decreased personal immunity and consequently leading to the CNS invasion [27]. Remarkably, SARS-CoV-2 viruses directly affect sympathetic activity, which decreases serotonin and dopamine concentrations and causes stress [28]. Accordingly, stress directly stimulates the pituitary gland and causes the release of corticotrophin-releasing hormone (CRH) and adrenocorticotrophic hormone (ACTH), leading to increased cortisol and vulnerability to further infection [10]. The combined effect of these physiological changes will ultimately cause mental disorders. This study was carried out to investigate the prevalence of mental disorders caused by lockdown, movement restriction, alcohol and substance use.

2. Objectives of Study

The first objective of this study is to review published articles on mental disorders due to the COVID-19 pandemic. The second objective is to establish the most commonly reported mental disorders. The third is to establish risk factors for developing mental disorders. The last objective is to establish protective factors for mental disorders.

3. Materials and Methods

3.1. Search Strategy

Online searches were conducted according to the PRISMA guidelines (Prisma-p, 2015) (Moher et al., 2015) [29]. The first two authors [ARA & MAT] conducted the initial electronic searches using four scientific literature databases, including PsycINFO, PsyciatryOnline, PubMed, and China National Knowledge Infrastructure (CNKI) to obtain the relevant articles. The search terms used include ‘COVID-19 pandemic’, ‘SARS-CoV-2’, ‘mental health’, ‘mental disorders’, ‘psychological disturbance’, ‘substance use’, ‘incidence of suicide’, ‘lockdown’, ‘quarantine’, ‘self-isolation’, ‘stress’, ‘anxiety’, ‘depression’, ‘PTSD’, ‘insomnia’, ‘worry’, ‘fear’, ‘obsessive-compulsive disorder’, and ‘eating disorder’.

3.2. Study Selection

The authors screened the titles and abstracts of the relevant articles retrieved. In the case of uncertainty, full texts were reviewed. Finally, all authors read the full texts of the eligible studies individually and selected the number of articles for the final review. A manual search of the reference sections of the suitable papers was conducted to identify studies not found through the database searches. This review included preprinted articles where necessary because research on the COVID-19 pandemic is a novel area of study. The quality of the articles retrieved were examined using the Newcastle Ottawa Scale except for the preprinted articles [30,31]. The quality of the pre-printed manuscripts was assessed based on their study design, the instrument used, the sample size, and the track record of the authors. In the course of this review, certain terms were used interchangeably, such as ‘sleep disturbance’ and ‘insomnia’; ‘stress’ and ‘distress’; ‘psychological distress’ and ‘psychological disturbances’; ‘post-traumatic stress disorders’ and ‘post-traumatic and related disorders’. The article retrieval, screening, and inclusion flow chart is shown in Figure 3 [32–38].

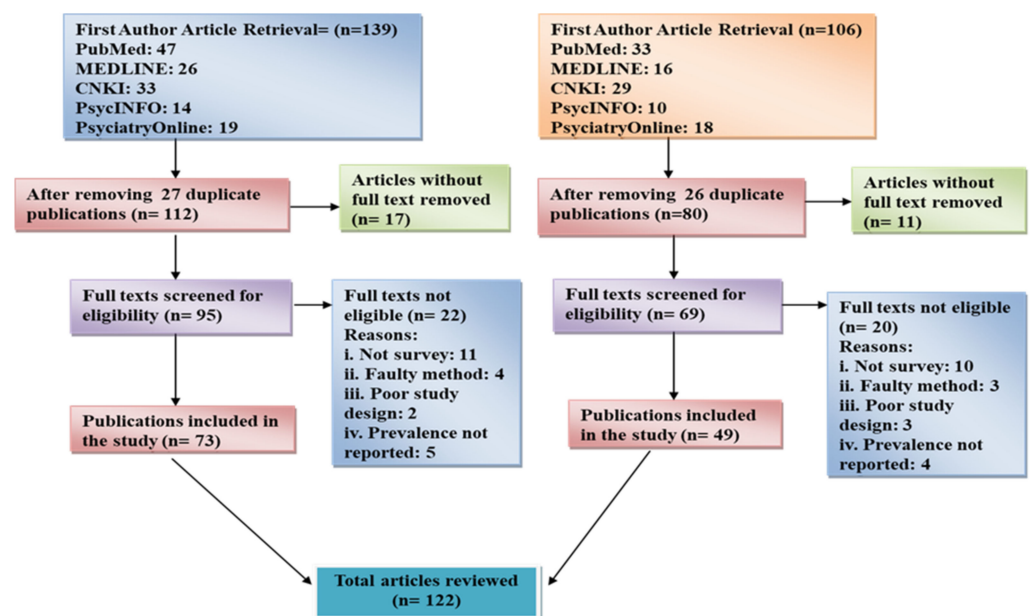


Figure 3. Articles retrieval and screening flowchart.

3.3. Inclusion and Exclusion Criteria

Inclusion Criteria: i. Original studies. ii. Studies published between January 2020 and June 2022. iii. Quantitative studies. iv. Studies published in the English language. Exclusion Criteria: i. Retrospective studies. ii. Studies that didn’t focus on the prevalence of mental health. iii. Review articles.

3.4. Data Synthesis

Initially, 206 articles were independently retrieved from the selected databases by the first two authors (Figure 3). In addition, 39 more articles were obtained through the manual search by reading the reference sections of the first sets of articles, making a total of 245 articles. After cross-checking the retrieved articles, a total of 53 duplicate articles were screened and removed. An additional 28 articles were excluded because they don't have full text. Subsequently, 42 articles were excluded because they were not surveys, had a faulty method, or had poor study design. Some of the excluded studies were conducted either through verbal interviews or focused group discussion; others did not report the prevalence of mental disorders, and only abstracts were available among the rest. Finally, 122 published studies that met the inclusion criteria were reviewed (Table 1). Studies were grouped under the most relevant subheadings; however, there was an overlap in some studies (Table 2).

Table 1. Surveys Outcomes Showing the Prevalence, Risks, and Protective Factors to Mental Health Disorders.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
1.	Dawel et al., 2020 [39]	Australia	1296	i. Generalized Anxiety Disorder (16%) ii. Major Depressive Disorder (20%)	i. Financial distress ii. Loss of job	Government support
2.	Li et al., 2021 [34]	Australia	760	i. Anxiety (40%) ii. Psychological distress (48%) iii. Sleep disturbance (41%)	History of mental health	i. Mental health support ii. Government support
3.	Wilson et al., 2022 [40]	Australia	555	i. Anxiety/Depression (mild, 85%) ii. Alcohol Use (Moderate, 80%)	i. Unemployment ii. Financial difficulties iii. Reduced accessibility to hobbies	i. Avoid distress, ii. Do things differently
4.	Simon et al., 2021 [41]	Austria	560	i. Anxiety (16%) ii. Depression (11%)	i. History of mental health ii. Wellbeing reduction	i. Mental health support ii. Social support
5.	Jassim et al., 2021 [42]	Bahrain	502	i. Depression (40%) ii. PTSD (20%) iii. Perceived stigma (53%)	i. Female gender ii. History of mental health issues iii. Young adult	Psychological interventions
6.	Islam et al., 2021 [43]	Bangladesh	975	i. Anxiety (5%) ii. Poor sleep (44–55%) iii. Fear (59%)	i. Female gender ii. Fear of infection iii. Poor income iv. Poor physical illness	i. Online counseling ii. Government support
7.	Das et al., 2021 [44]	Bangladesh	672	i. Anxiety (64%) ii. Depression (38%) iii. Insomnia (73%)	i. Female sex ii. Unemployment iii. Being a student iv. Obesity v. Living without a family	Supportive programs
8.	Islam et al., 2020 [45]	Bangladesh	475	i. Anxiety (18%) ii. Depression (15%)	i. Living with families ii. Being a student	i. Online classes ii. Government support
9.	Mehareen et al., 2021 [46]	Bangladesh	333	i. Anxiety (Public University 54%, Private University 33%) ii. Depression (Public university 59%, Private University 31%)	i. Female gender ii. Level of study iii. Nuclear families	i. Psychological interventions ii. Government support

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
10.	Lopes et al., 2021 [47]	Brazil	1224	i. Anxiety (53%) ii. Depression (61%) iii. Stress (58%)	i. Female gender ii. Younger age iii. Having a chronic diseases	i. Educational actions ii. Increasing psychological wellbeing
11.	Gadermann et al., 2021 [3]	Canada	3000	i. Deteriorated mental health (44.3%) ii. Anxiety and worry (52%) iii. Suicidal thoughts (8%)	i. Having children <18 years ii. Alcohol consumption	i. Free digital technologies ii Government supports
12.	Maximova et al., 2021 [48]	Canada	1095	i. Boredom (Girls 48%, Boys 36%) ii. Trouble paying attention (Girls 36%, Boys 39%)		Playing video games
13.	Song et al., 2020 [49]	China	14,825	i. Depression (25%) ii. PTSD (9%)	i. Male gender ii. Old age iii. Working in Hubei province iv. Low social support	i. Psychological interventions ii. Mental health promotion
14.	Cao et al., 2020 [50]	China	7143	i. Severe Anxiety (1%) ii. Moderate Anxiety (3%) iii. Mild Anxiety (21%)	i. Having infected acquaintances ii. Worry about economy iii. Worry about school	i. Living in a city ii. Higher level of income iii. Living with parents iv. Government support
15.	Li et al., 2021b [51]	China	7090	i. Anxiety (19%) ii. Depression (21%) iii. Poor self-rated health (10%)	Fear of infection Work intensity	Improve the working condition
16.	Huang et al., 2020 [52]	China	6261	i. Anxiety (Moderate 14%, Severe 5%) ii. Depression (Moderate 17%, Severe 8%)	i. Being single ii. People from Hubei province ii. Infected people	Psychological intervention
17.	Zhu et al., 2020 [53]	China	5062	i. Anxiety (24%) ii. Depression (14%) iii. Stress (30%)	i. Female gender ii. Chronic diseases iii. Fear of infection iv. History of mental disorders	i. Psychological support ii. Government support
18.	Liu et al. 2020a [54]	China	4679	i. Anxiety (16%) ii. Depression (35%) iii. Psychological distress (16%)	i. Divorce/widow ii. Younger age iii. Nurse iv. Not living with family	psychiatric interventions

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
19.	Ren et al., 2020 [55]	China	3600	i. Anxiety (Mild 19%, Moderate 5%, Severe 1%). ii. Depression (Mild 17%, Moderate 4%, Severe 1%)	i. Surgical nurses ii. Divorce/widowed iii. Care for COVID-19 patients	Mental health support
20.	Duan et al., 2020 [56]	China	3254	i. Anxiety (31%) ii. Depression (22%)	i. Resident in Hubei province ii. Infected family member ii. Internet addiction iii. Old age	I. Psychological interventions ii. Conducting research
21.	Huang et al., 2021 [57]	China	3113	i. Anxiety (13%) ii. Depression (15%) iii. Stress (7%)	i. Smoking ii. Alcohol drinking	i. Family support ii. Psycho intervention
22.	Hou et al., 2020 [58]	China	3063	i. Anxiety (13%) ii. Depression (14%) iii. Stress (7%)	i. Female gender ii. Old age iii. Unemployment iv. Exposure to COVID-19 news	i. Limit exposure to social media ii. Mental health prevention
23.	Cai et al., 2020 [59]	China	2346	i. Anxiety (Frontline workers 16%, Non-Frontline workers 7%) ii. Depression (Frontline workers 14%, Non-Frontline workers 10%) iii. Insomnia (Frontline workers 47%, Non-Frontline workers 29%) iv. Suicidal ideation (Frontline workers 12%, Non-Frontline workers 9%)	i. Frontline worker ii. Working in Wuhan	i. Mental health support
24.	Lu et al., 2020a [60]	China	2299	i. Anxiety (Moderate 26%, Severe 3%) ii. Depression (Mild 12%, Moderate 0.3%)	i. Healthcare workers ii. Working in ICU	Improving the mental health
25.	Que et al., 2020 [61]	China	2285	i. Anxiety 46%, ii. Depression 45%, iii. Insomnia 29%	Front-line healthcare	i. Timely interventions ii. Proper information feedback.

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
26.	Zhang et al., 2020a [62]	China	2182	Medical vs. Nonmedical Workers i. Anxiety (13% vs. 9%) ii. Depression (12% vs. 10%) iii. Insomnia (38% vs. 31%) iv. OCD (5% vs. 2%)	I. Health worker ii. Organic disease iii. Living in rural area	Recovery programs
27.	Liu et al., 2020b [63]	China	2031	i. Anxiety (18%) ii. Depression (15%) iii. Stress (10%)	i. Health worker ii. Older age iii. Working in frontline	Psychological crisis interventions
28.	Wang et al., 2020a [64]	China	1738	i. Anxiety (29%) ii. Depression (17%) iii. Stress (8%)	i. Physical symptoms ii. Low knowledge about the infection	Government Financial support
29.	Wang et al., 2020b [65]	China	1599	i. Feel nervous (57%) ii. Bad dreams (38%) iii. Emotional disturbances (48%)	i. Unmarried ii. Younger age iii. History of the visit to Wuhan	Psychological interventions
30.	Lai et al., 2020 [32]	China	1257	i. Anxiety (45%) ii. Depression (50%) iii. Distress (72%) iv. Insomnia (34%)	i. Female gender ii. Nurses iii. Frontline health care workers iv. Working in Wuhan	i. Mental health intervention ii. Special attention to women and nurses
31.	Guo et al., 2021 [33]	China	1091	i. Anxiety (53%) ii. Depression (56%) iii. PTSD (11%) iv. Insomnia (79%) Mild psychological disturbance (34%)	iii. Having higher degrees iv. Working in Wuhan	Early mental health intervention
32.	Kang et al., 2020 [66]	China	994	ii. Moderate psychological disturbance (22%) iii. Severe psychological disturbance and (6%)	i. Low access to mental healthcare ii. Dealing with confirmed cases	Mental health interventions
33.	Du et al., 2020 [67]	China	687	i. Anxiety (30%) ii. Depression (18%) iii. Stress (14%)	i. Female gender ii. Healthcare worker ii. Medical students	i. Preventive measures ii. Active coping strategies

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
34.	Ning et al., 2020 [68]	China	612	i. Anxiety (Neurological nurses (20%, Doctors 13%) ii. Depression (Neurological nurses 30%, 20%)	i. Female gender ii. Nurses iii. Younger age iv. Junior Health worker	i. Provision of PPE ii. Psychological assistance.
35.	Liang et al., 2020 [69]	China	584	i. Psychological problems (40%) ii. PTSD (14%)	i. Low level of education ii. Employment status iii. Marital status	i. Government support ii. Psychological counseling
36.	Liu et al., 2020c [70]	China	512	i. Mild Anxiety (10%), ii. Moderate Anxiety (1.4%) ii. Severe Anxiety (0.8%).	i. Working in Hubei province ii. Direct contact treating infected patients	i. Psychological support ii. Government support
37.	Juan et al., 2020 [71]	China	456	i. Anxiety (32%) ii. Depression (30%) iii. Stress (43%) iv. Psychological distress	i. Female gender ii. Low income iii. Younger adults iv. Fear of infecting others	i. Social support ii. Psychological intervention
38.	Zhang et al., 2020b [72]	China	263	Apprehension (52%)	Old age	i. Family Support ii. Attention to mental health
39.	Liu et al., 2020d [73]	China	217	i. Anxiety (Male 20%, Female 24%), ii. Depression (Male 30%, Female 39%)	i. Female gender ii. Living in Hubei Province ii. Level in school	Effective screening procedures
40.	Rodriguez-Hidalgo et al., 2020 [74]	Ecuador	640	i. Anxiety (60%) ii. Depression (80%)	i. Female gender ii. Fear of infection	i. Psychological training ii. Counseling program
41.	Deek et al., 2021 [75]	Egypt, Lebanon, Libya, Saudi Arabia, Sudan	2783	i. Anxiety (3–8%) ii. Depression (2–7%) iii. Insomnia (2–9%)	i. Poverty ii. Change of Government	Government support
42.	Herbert et al., 2021 [76]	Egypt, Germany	220	i. Anxiety (50%) ii. Depression (52%) Depressive symptoms (65.5%)	i. Worries about health ii. Difficulties in identifying feelings iii. Difficulties in learning behavior	Psychological interventions
43.	Fancourt et al., 2020 [77]	England	36,520	i. Anxiety (Moderate 12%, Severe 10%) ii. Depression (Moderate 13%, Severe 8%)	i. Female gender ii. Lower education iii. Younger adults iv. Existing mental illness	Mental health support
44.	Zaninotto et al., 2021 [78]	England	5146	i. Anxiety (9–11%) ii. Depression (23–29%)	i. Women ii. Being Single iii. Pre-existing health issues iv. Poor economic status	i. Mental health screening ii. Psychological support

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
45.	Assefa et al., 2021 [79]	Ethiopia	710	i. Anxiety (35%) ii. Depression (30%) iii. Stress (38%)	i. Married ii. Old age iii. Low level of education iv. History of mental disorders	i. Psychological counseling ii. Coping strategies
46.	Girma et al., 2021 [80]	Ethiopia	610	i. Moderate stress (68%) ii. Severe stress (14%)	i. Large family size ii. Chronic diseases iii. Old age	i. Prevention of psychological impacts of COVID-19 ii. Mental health counseling
47.	Geweniger et al., 2022 [81]	Germany	1619	i. Children mental health problems (57%) ii. Parent depression (31%)	i. Low socioeconomic status ii. Complex chronic disease iii. Parents with depression	Political measures to help children
48.	Schäfer et al., 2020 [82]	Germany	1591	i. Psychopathological symptoms (10%) ii. PTSD (15%)	i. Younger age ii. Female gender	Social support
49.	Rek et al., 2021 [37]	Germany	511	i. Anxiety (11%) ii. Depression (24%) iii. PTSD (5%) iv. Substance use (1%) v. Eating disorder (4%)	i. Political restriction ii. Existing psychiatric illness iii. Conspiracy beliefs	Self-assessment
50.	Knolle et al., 2021 [83]	Germany, UK	782	i. Psychological symptoms, Germany, UK (25%) ii. Depression, Germany, UK (20–50%)	i. High consumption of Marijuana ii. Use of social media	i. Being older, ii. Having a better education
51.	Magklara et al., 2020 [84]	Greece	1232	i. Sleep problems (8%) ii. Stress (6%)	i. Mental health history ii. Unemployment iii. Family conflict	Public health policies
52.	Reddy et al., 2020 [85]	India	891	i. Anxiety (15%) ii. Depression (22%) iii. Anxiety and Depression (28%)	i. Being single ii. Worries regarding school opening iii. Online teaching	Timely Psychological intervention.
53.	Saraswathi et al., 2020 [86]	India	217	i. Anxiety (33%) ii. Depression (36%) iii. Stress (25%)	Direct contact with COVID-19 patients	Mental health intervention

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
54.	Zukhra et al., 2021 [87]	Indonesia	247	i. Mild Anxiety (30%) ii. Moderate Anxiety (5%) iii. Severe Anxiety (0.4%)	i. Female gender ii. Younger age iii. Living in COVID-19 red zone	i. Psychological support ii. Mental health counseling
55.	Sharif Nia et al., 2021 [88]	Iran	70,180	i. Anxiety (Moderate 21%, Severe 59%) ii. Depression (Mild 18%, Moderate 18%) iii. Stress (Moderate 59%, Severe 7%)	i. Female gender ii. Married iii. Level of education	Psychological interventions
56.	Shahriarirad et al., 2021 [12]	Iran	8591	i. Anxiety (20%) ii. Depression (15%)	i. Female gender ii. Healthcare worker	i. Older age ii. Being Married iii. Getting information from medical journals
57.	Azizi et al., 2021 [36]	Iran	7626	i. Anxiety (43%) ii. Depression (45%) iii. Stress (35%)	i. Female gender ii. Younger age iii. Physical illness iv. History of mental disorders	i. Psychological screening ii. Government support
58.	Hassannia et al., 2020 [89]	Iran	2045	i. Anxiety (66%) ii. Depression (42%) iii. Stress (35%)	i. Female gender ii. Younger age iii. Doctors and nurses iv. Infected individuals	i. Psychological intervention ii. Helping vulnerable people
59.	Salehian et al., 2021 [90]	Iran	1910	i. Anxiety (40%) ii. Depression (22%) iii. PTSD (62%)	i. Women, ii. Younger age iii. Divorced/widowed iv. History of psychiatric disorders	Continuous monitoring of the psychological consequences of corvid-19
60.	Mani et al., 2020 [91]	Iran	922	i. Anxiety (19%) ii. Depression (6%)	i. Old age ii. Female gender iii. Lack of trust in Government	Government support
61.	Kausar et al., 2021 [92]	Iran	500	i. Anxiety (Mild 11%, Moderate 13%) ii. Depression (Mild 18%, Moderate 18%) iii. Stress (Mild 11%, Moderate 4%)		Counseling services

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
62.	Chen et al., 2021 [93]	Iran	474	i. Anxiety (43%) ii. Depression (45%) iii. Stress (35%)	i. Old age ii. Female gender iii. Chronic diseases	Social support
63.	Mohammadi et al., 2020 [94]	Iran	462	i. Anxiety (General population 96%, COVID-19 patients 98%) ii. Depression (General population 52%, COVID-19 patients 54%) iii. Stress (General population 49%, COVID-19 patients 47%)	i. Female gender ii. Younger age iii. Comorbidity diseases	Psychological interventions
64.	Orgilés et al., 2020 [95]	Italy, Spain	1114	i. Anxiety (28%) ii. Worry (30%) iii. Stress (Children 11%, Parents 35%)	Fear of infection	Use of mobile phones and computers
65.	Rossi et al., 2020 [96]	Italy	18,147	i. Anxiety (21%), ii. Depression (17%) iii. Stress (22%) iv. PTSD (37%) v. Insomnia (7%)	i. Female Gender ii. Younger age iii. Quarantine	Monitoring of the mental health status
66.	Davico et al., 2021 [97]	Italy	2419	i. Psychological impact (33%) ii. PTSD (31%)	i. Fear of infection ii. Home confinement	Physiological intervention
67.	Villani et al., 2021 [98]	Italy	501	i. Anxiety (35%) ii. Depression (73%)	i. Female gender ii. Students iii. Inability to see partner	Physical activity
68.	Giusti et al., 2020 [99]	Italy	330	i. Anxiety (31%) ii. Depression (27%) iii. Stress (34%) iv. PTSD (37%)	i. Female gender, ii. Being a nurse, iii. Contact with COVID-19 patients	Monitoring and timely treatment
69.	Levkovich and Shinan-Altman, 2021 [100]	Israel	1407	i. Anxiety and Worry (40%) ii. High level of fear (20%)	i. Fears of infection ii. Adjustment to the new reality	Government intervention
70.	Basheti et al., 2021 [101]	Jordan	450	i. Anxiety (34%) ii. Depression (26%)	i. Smoking ii. Low income	Government intervention
71.	Shah et al., 2021 [11]	Kenya	433	i. Anxiety (44%) ii. Depression (54%) iii. Insomnia (41%)	i. Hospital workers ii. Female gender	i. Government support ii. Doctors' welfare

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
72.	Wong et al., 2021 [35]	Malaysia	1163	i. Anxiety (55%) ii. Depression (59%) iii. Stress (31%)	i. Young people ii. Females iii. Poor financial conditions	i. Psychological counselling ii. Government support
73.	Bahar Moni et al., 2021 [102]	Malaysia	720	i. Moderate psychological distress (62%) ii. High levels of fear (27%)	i. Alcohol drinking ii. Fear of infection iii. Care of COVID-19 patient iii. Poor financial situation	Behavioral interventions
74.	Sundarasan et al., 2020 [103]	Malaysia	983	i. Mild to moderate anxiety (20%) ii. Severe anxiety (7%) iii. Extreme anxiety (3%)	i. Financial constraints ii. Remote online teaching	i. Mental health support ii. Government support
75.	Baloch et al., 2021 [104]	Malaysia	494	i. Mild to moderate anxiety (25%) ii. Severe anxiety (9%) iii. Extreme anxiety (7%)	i. Online teaching ii. Uncertainty about their academic performance	Mental health interventions
76.	Norhayati et al., 2021 [105]	Malaysia	306	Depressive symptoms (Frontline healthcare 28%, Non-frontline healthcare 38%)		Psychological support
77.	Chinna et al., 2021 [106]	Malaysia, Saudi Arabia, Pakistan, Bangladesh, China, India, and Indonesia	3679	i. Mild to moderate anxiety (22%) ii. Severe anxiety (14%)	i. Female gender ii. Substance use	i. Social Support ii. Government support
78.	Cortés-Álvarez et al., 2021 [107]	Mexico	1105	i. Moderate-severe depression (16%) ii. Moderate-severe anxiety (23%) iii. Moderate-severe stress (20%)	i. Female gender ii. Older age iii. Contact with a confirmed case	i. Hand hygiene ii. Wearing masks
79.	Khanal et al., 2021 [108]	Nepal	475	i. Anxiety (33%) ii. Insomnia (7%)	i. Nurses ii. family members with chronic diseases ii. stigma	i. Monitor the psychological illness ii. Psychological intervention
80.	Khanal et al., 2020 [13]	Nepal	475	i. Anxiety (42) ii. Depression (38%) iii. Insomnia (34%)	i. History of mental health problems ii. Stigma	i. Government support system ii. Availability of PPE

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
81.	Van der Goot et al., 2021 [109]	Netherland	259	i. Mild Psychological distress (28–50%) ii. Moderate Psychological distress (7–20%) iii. Severe Psychological distress (13–30%)		Psychological support
82.	Tobin et al., 2021 [110]	Nigeria	543	i. Anxiety (24%) ii. Depression (17%)	i. Female gender ii. Alcohol use iii. Currently on medication	Psychological support
83.	Olaseni et al., 2020 [111]	Nigeria	502	i. Anxiety (49–51%), ii. Depression (Males 7–12%, Females 5–14%) iii. Moderate PTSD (Males 18–22%, Females 19–29%)	i. Female gender ii. Increase in number reported cases	Government support
84.	Durowade et al., 2021 [112]	Nigeria	335	Psychological effects (84%)	i. Diabetes, asthma, cancers ii. Contact with a confirmed case	i. Public awareness, ii. Subsidizing PPEs iii. Financial stimulus
85.	Adewale et al., 2021 [113]	Nigeria	322	i. Severe anxiety (6%) ii. Severe depression (3%) iii. Severe psychological impact (20%)	i. Increase in time spent on social media and TV ii. Decrease in physical activity	i. Psychosocial support ii. Government support
86.	Fadipe et al., 2021 [114]	Nigeria	160	i. Depression (28%) ii. Anxiety (28%) iii. Suicidal ideation (4%)	i. Fear of infecting ii. Employment status iii. History of negative emotion	Nigeria
87.	Afolabi, 2020 [115]	Nigeria	132	i. Poor mental wellbeing (55%) ii. Worries (71%)	Sleeplessness	i. Government support ii. Social support
88.	Khamis et al., 2020 [116]	Oman	402	i. Mild Anxiety 40% ii. Moderate Anxiety 19% iii. Severe Anxiety 9% iv. Poor sleep 39%	i. Care for COVID-19 patients ii. Being a citizen	Mental health support
89.	Hayat et al., 2021 [117]	Pakistan	1094	i. Anxiety (Moderate to Severe 33%) ii. Depression (Mild 45%, Moderate 12%)	i. Female gender ii. Old age iii. Married	i. Psychotherapy ii. Counselling services

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
90.	Majeed and Ashraf, 2020 [118]	Pakistan	63	i. Anxiety (60%) ii. Fear (70%)	i. Uncertainty ii. Misinformation iii. Social distancing/isolation	i. Psychosocial interventions ii. Government support
91.	Radwan et al., 2021 [119]	Palestine	420	i. Anxiety (Mild 1.6%, Severe 12%) ii. Depression (Mild%, Severe 9%) iii. Stress (Mild 12%, Severe 13%)	i. Female gender ii. Family poor income iii. large Family size iv. Younger age	Mental health support
92.	Villarreal-Zegarra et al., 2021 [120]	Peru	830	i. Depression (16%) ii. Anxiety (12%) iii. PTSD (15%)	i. Healthcare workers ii. Fear infection	i. Preventive actions ii. Surveillance of mental health
93.	Stack et al., 2020 [121]	Poland	36	Substance use (17–52%)	Availability of substances	Government support
94.	Karpenko et al., 2020 [122]	Russia	352	i. Anxiety (30%) ii. Depression (17%)	i. Fear of infection ii. Self-isolation iii. Fear of financial problems	i. Mental health support ii. Social support
95.	Alkhamees et al., 2020 [123]	Saudi Arabia	1160	i. Moderate to severe anxiety (24%) ii. Moderate to severe depression (28%) iii. Moderate to severe stress (22%)	i. Female gender ii. High-school students iii. Healthcare workers	Psychological interventions
96.	Al-Rahimi et al., 2021 [38]	Saudi Arabia	1030	i. Anxiety (21%) ii. Worrying thoughts (20%)	i. Female gender ii. Lower education iii. Middle-aged iv. Divorced or widowed v. Chronic diseases	Psychological interventions
97.	Alyoubi et al., 2021 [124]	Saudi Arabia	582	i. Anxiety (22%) ii. Depression (25%) iii. Stress (18%)	i. Pre-existing mental health condition ii. Learning difficulties iii. Insomnia	i. Psychological interventions ii. Government support
98.	Odriozola-González et al., 2020 [125]	Spain	2530	i. Anxiety (21%) ii. Depression (34%) iii. Stress (28%)	i. Course of study ii. Year of study	i. Self-isolation ii. Social distancing

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
99.	Muñoz-Violent et al., 2021 [126]	Spain	996	i. Anxiety (39%) ii. Depression (12%)	i. Female gender ii. Large family size iii. History of mental illness iv. Fear of infection	Coping skills
100.	Visser and Wyk, 2021 [127]	South Africa	5074	i. Anxiety (46%) ii. Depression (35%)	Fear of infection	Psychological interventions
101.	Posel et al., 2021 [128]	South Africa	2213	Depression (24%)	Job loss	i. Mental health interventions ii. Re-employment
102.	Werling et al., 2022 [129]	Switzerland		i. Anxiety (Severe, 33.6%) ii. Depression (Moderate, 44.3%) iii. Stress (Moderate, 50.8%)	i. Loneliness/isolation of the child ii. Worry about child's education iii. Increased media use iv. Missing recreational activities	i. Adequate medical supply ii. Support for families
103.	Krifa et al., 2022 [130]	Tunisia	366	i. Anxiety (Severe, 33.6%) ii. Depression (Moderate, 44.3%) iii. Stress (Moderate, 50.8%)	i. Fear of infection ii. Examination stress iii. Low response to students' needs	i. Social support ii. Psychological support iii. Counseling
104.	Al Dhaheri et al., 2021 [131]	United Arab Emirates	6142	i. Psychological Distress (31%) ii. Felt horrified (62%) iii. Stress (60%)	i. Female gender ii. Young adults	Support from family
105.	Saddik et al., 2021 [132]	United Arab Emirates	481	i. Anxiety (Mild 66%, Severe 32%) ii. Psychological distress (Mild 49%, Severe 37%)	i. Worry about COVID-19 ii. Being isolated iii. Contracting COVID-19 iv. Feeling stigmatized	i. Mental health preventive policies ii. Psychological support
106.	O'Connor et al. 2022 [133]	UK	3077	i. Anxiety (17–22%) ii. Suicidal ideation (13–14%) iii. Depression (23–26%)	i. Female gender ii. Younger age iii. Pre-existing mental health	Psychological interventions
107.	Niedzwiedz et al., 2021 [134]	UK	9748	Psychological distress (31%)	Lockdown measures	i. Psychological support, ii. Access to mental health services
108.	Chen and Lucock, 2022 [135]	UK	1178	i. Anxiety (50%) ii. Depression (50%)	i. Low exercising ii. High tobacco use iii. Financial concerns iv. Worse personal relations v. Cancellation of an event	i. Social support ii. Psychological therapy iii. Counseling

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
109.	Morgül et al., 2020 [136]	UK	927	i. Anxiety (45%) ii. Worried (52%), iii. Angry (49%),	i. Impact of the quarantine ii. Children's screen use time iii. Physical activity	Development of intervention programs
110.	Prasad et al., 2021 [137]	USA	20,947	i. Anxiety or depression (38%) ii. Burnout (49%)	i. Fear of exposure ii. Female gender iii. Black race and Latino	Government support
111.	Czeisler et al., 2020 [138]	USA	5412	i. Anxiety or Depression (31%) ii. PTSD (26%) iii. Substance use (13%) iv. Suicide tendency (11%)	i. Young adult ii. Ethnic minority iii. Pre-existing psychiatric conditions iv. Unpaid caregivers	i. Community intervention ii. Government support
112.	Czeisler et al., 2021 [139]	USA	5186	i. Anxiety or Depression (33%) ii. PTSD (30%) iii. Substance use (15%) iv. Suicide tendency (12%)	i. Wrong coping strategy ii. Employment status iii. History of mental illness	Government support
113.	Vahia et al., 2020 [140]	USA	3840	i. Anxiety disorder (6%) ii. Depressive disorder (6%) iii. PTSD (9%)	i. Isolation ii. longer-term physical and financial wellbeing	i. Utilizing technology to maintain contact ii. Mental health services
114.	Dickey-Chasins et al., 2022 [141]	USA	3006	Anxiety/depressive (Moderate, 29.1%)	i. Females gender ii. Democrats iii. Sexual minorities iv. Unemployment v. Single/unmarried	i. Social support ii. Government Intervention
115.	Browning et al., 2021 [142]	USA	2534	i. Anxiety (22%) ii. Depression (25%) iii. Stress (18%)	i. Female gender ii. Younger age iii. Comorbidity diseases iv. Poor income	i. Mental health support ii. Educational support
116.	Lopez-Castro et al., 2021 [143]	USA	909	i. Depression (90%) ii. Anxiety (66%) iii. PTSD (5%)	i. History of infection ii. Emotional Health issues ii. Poor wellbeing	Social support
117.	Son et al., 2020 [144]	USA	195	i. Anxiety and Stress (71%) ii. Depressive thoughts (44%)	i. Disruptions of sleeping ii. Fear of infection iii. Decreased social interactions	i. Mental health counseling ii. Self-Management iii. Seeking support
118.	Hamm et al., 2020 [145]	USA	73	i. Anxiety (75%) ii. Depression (44%) iii. Social Isolation (36%)	i. Fear of losing the job ii. Financial problems	i. Internet surfing ii. Avoid negative emotions ii. Exercises

Table 1. Cont.

S/N	Study	Country	Study Population	Findings		
				Prevalence (%)	Risk Factors	Protective Factors
119.	Jow et al., 2022 [146]	USA	38	i. Anxiety (75%) ii. Depression (44%) iii. Social Isolation (36%)	i. Occupational stress ii. concerns for health and safety iii. Additional work iv. Psychological toll of caring for patients	I. Support and guide ii. Policy changes
120.	Nikolaidis et al., 2021 [147]	USA, UK	3423	i. Worry US (8–10%), UK (12–17%) ii. Mood changes (50–57%)	With age and sex, Mood States	Government support
121.	Rahman et al., 2021 [148]	17 Asian countries	8559	i. Psychological distress (69%) ii. Fear (24%)	i. Old age ii. Poor financial status iii. Nurses	Medical and social support
122.	van Mulukom et al., 2021 [149]	79 Countries	8229	i. Anxiety (8%) ii. Depression (7%)	i. Self-isolation ii. Poor coping strategy	i. Positive coping strategy ii. Government support

Table 2. Summary of Mental Disorders and Number of Studies Reported.

S/N	Mental Disorder	No. of Studies that Reported	Percentage
1	Anxiety	92	35.9
2	Depression	76	29.7
3	Stress	32	12.5
4	Posttraumatic Stress Disorder	16	6.3
5	Psychological Disturbance	14	5.5
6	Insomnia	13	5.0
7	Worry	6	2.3
8	Fear	5	2.0
9	Obsessive-Compulsive Disorder	1	0.4
10	Eating Disorder	1	0.4
	Total	256	100%

4. Results

In this review, a number of surveys outcome were summarized, including the prevalence, risks, and protective factors for mental health disorders (Table 1). A survey conducted in China reported an increased incidence of anxiety (45%), depression (50%), and insomnia (34%) [32]. Another longitudinal study indicated an increased level of anxiety (53%), depression (56%), and insomnia (79%) [33]. A study conducted in Australia reported a high rate of anxiety (40%), psychological distress (48%), and insomnia (41%) [34]. An online survey conducted in Malaysia also revealed a high level of anxiety (55%), depression (59%), and stress (31%) [35]. A study conducted in Iran indicated an increased incidence of anxiety (43%), depression (45%), and stress 35% [36]. Another study from Canada accounted for high level of anxiety (52%) [3]. Nonetheless, a quantitative online survey conducted in Germany reported a low incidence of anxiety (11%), depression (24%), and PTSD 5%) [37]. Another longitudinal survey from Spain also accounted for a moderate prevalence of anxiety (21%), depression (34%), and stress (28%) [38]. This is in line with other reviews that reported a global survey conducted among 31 nations [11,148].

During this study, various articles reviewed reported a wide range of mental disorders associated with the COVID-19 pandemic. Anxiety was the most commonly reported disorder by 35.9% of the articles reviewed. This indicated that anxiety was the most frequently encountered mental disorder during the COVID-19 pandemic. Depression was reported by 29.7% of the studies reviewed, making it the second most documented mental disorder. Stress is another mental disorder moderately revealed by 12.5% of the publications reviewed. However, PTSD, psychological disturbance, and insomnia were reported by only 6.3%, 5.5%, and 5.0% of the articles published, respectively. Generally, low reports of 2.3% documented worry, and only 2% of the articles reviewed reported the incidence of fear. Lastly, both OCD and eating disorders were reported by only 0.4% of the articles reviewed, respectively. This made them rare mental disorders during the COVID-19 pandemic (Table 2). This result reflects recent findings from other studies [14–21].

5. Discussion

The public health measures taken during the COVID-19 pandemic to curb the spread of SARS-CoV-2 infection such as quarantine, self-isolation, and total lockdown have caused detrimental effects on mental health. This review focused on the states mostly affected by the SARS-CoV-2 infection across the globe. The novelty in this research is to find the prevalence of mental disorders and to see if the prevalence is related to lockdown or high incidence of infection. Countries strongly affected by the COVID-19 pandemic include the USA, India, Brazil, France, the UK, Russia, Turkey, Italy, Spain, Germany, Argentina, and Iran. These countries recorded more COVID-19 cases and fatalities than others [150]. Several countries such as China, Australia, Malaysia, Iran, Germany, Spain, and Canada adopted total lockdown as a countermeasure which strongly affected their mental well-being. Generally, this review reported a high prevalence of wide ranges of mental disorders.

These include anxiety, depression, stress, PTSD, psychological disturbance, insomnia, worry, fear, OCD, and eating disorders. Additionally, a number of negative consequences of total lockdowns, such as suicidal tendencies, alcohol and substance use, and stigmatization were documented. This has made mental disorders one of the areas of global public health concern. Thus, the outcome is in line with a recent meta-analysis comprising 146,139 subjects worldwide which established a high prevalence of anxiety, depression, insomnia, and PTSD [15]. In addition, a recent report by the Organization for the Economic Cooperation and Development (OECD) that mapped out the strategy to improve public health also reported a high prevalence of anxiety and depression ranging between 5–50% and 3–36.8%, respectively [9]. Several studies carried out, however, have found a moderate prevalence of anxiety and depression [41,45,57–59]. Furthermore, a number of articles documented a very low prevalence of anxiety and depression [57,60,75,77,119,140,149]. Notably, separate studies carried out to describe the mental health of frontline workers reported a high rate of anxiety, depression, and PTSD [11,17,151,152]. The causes identified include shortage of PPE, inadequate testing kits, increased hospital duration, increased workload, lack of social and moral support, fear of infection, and stigmatization. Overall, mental health disorders have led to poor work performance, absconding from duty, job loss, and even suicide [6,9,11,13,15,17,152]. These deleterious outcomes will have a negative impact on people's quality of life, and by extension the global economy. Consequently, there is a need for a renewed effort by the United Nations, WHO, and individual nations to address the menace of mental disorders by increasing public welfare. Notably, addressing the high prevalence of mental disorders will improve individuals' quality of life, reduce the burden of public health and prevent or minimize the incidence of suicide, alcohol and substance use.

The prevalence of stress varies from high to moderate to low incidences. In this review, an extremely high prevalence of stress was reported [32,47,88]. Also, a number of longitudinal surveys revealed a moderately high incidence of stress [36,72,80,90,94–96]. However, the outcome of various online studies on mental health illnesses reported a moderate prevalence of stress, while several other studies accounted for a very low prevalence of stress [54,57,58,64,67,80,84,92,119]. Although stress is widely reported, a higher percentage might have overlapped as one of the general symptoms of other mental disorders. On this note, governments and other relevant stakeholders need to make a quick move to address increased hardships through the distribution of palliatives and giving incentives to people that have lost their jobs.

The media in general, have played vital role in spreading information and misinformation about the COVID-19 pandemic. Notable memories of various scenes of bloody pneumonia witnessed in Wuhan, China; mass graves repeatedly broadcast in Italy, Brazil, and Argentina; and the cremation of dead bodies in India resulted in horrific thoughts and flashbacks across the globe known as PTSD. In line with this, several longitudinal surveys reported moderate incidences of PTSD [42,96,97,99,111,138,139]. Nonetheless, a number of articles reviewed reported only a low incidence of PTSD [33,37,49,82,120,140,143]. Insomnia is one of the most acute symptoms of all mental disorders. Consequently, a report of an extremely high incidence of insomnia was documented [65]. In addition, several others surveys revealed moderate incidences of insomnia [11,13,34,43,59,61,62,116]. Whereas few other longitudinal studies found a low prevalence of insomnia [75,84,96,108]. The high prevalence of insomnia has led to the misuse of drugs and substance abuse in an attempt to induce sleep. There was also hype about the efficacy of some medicines, such as chloroquine and hydroxychloroquine [2]. In general, there was a dire need to strengthen the guidelines and regulations guiding drug prescriptions and dispensing to counter panic buying by the public. The government also needs to regulate the contents broadcast by the media houses and impose sanctions where necessary to curb the spread of unnecessary panic and fake news.

Confining everyone indoors to enforce lockdown during the early days of COVID-19 has resulted in indiscriminate alcohol and other substance use to alleviate boredom. Con-

sequently, in this review, a survey reported a high incidence of alcohol and substance use [121]. In addition, a number of surveys have found moderate incidences of substance use [138,139]. COVID-19 pandemic is a global phenomenon and has affected almost every country, which made it known to almost every community across the globe. Despite this, a high incidence of stigmatization was reported [36]. Although only a few studies investigated the rate of suicide thought as a direct consequence of total lockdown and loss of freedom, most of the articles reviewed reported only low prevalence of suicide [3,59,114,134,138,139]. Generally, there is a need to further investigate the incidences of suicide, possibly due to agony, hopelessness, and despair caused by grief, bereavement and domestic violence linked to the COVID-19 pandemic.

In the course of this review, several risk factors for developing mental illness were identified. These include fear of infection, history of mental illness, poor financial status, female gender, alcohol drinking, younger age, lack of experience, comorbidities, and physical disability [3,6,11,12,32,33,35–37,80,125]. Accordingly, the OECD advocated for the need to identify and alleviate these risk factors [9,153,154]. In addition, the risk factors should be studied extensively and included in the strategic plan in preparation for the future pandemic.

This study also identified several protective factors against developing mental disorders, including higher income, public awareness, psychological counseling, social support, and government support [3,6,11,12,32,33,35–37,80,125]. There is strong advocacy to support vulnerable groups such as young adults, females, and elderly people regarding education, employment, and mental health support [9,153,154]. Governments and stakeholders must prioritize these protective factors when providing emergency relief and intervention during COVID-19 and future pandemics. Several coping strategies were identified and assessed for their effectiveness in reducing the global burden of mental health during COVID-19. These include awareness of the disease, indoor physical activities, online games, music concerts, online classes, and lectures [1,6,9,15,153,154].

Furthermore, various government interventions tried during the previous pandemics were identified and evaluated to see if they could be repurposed. In addition, various preventive measures aimed at reducing the negative impacts of horrible news of COVID-19 disease via traditional and social media were documented. This will guide the general public and media houses in identifying correct sources of information to avoid fake news. Also, it will reduce the broadcast of horrible hospital scenes and terrifying burial grounds. Overall, these will help significantly to prevent and reduce mental disorders caused by the COVID-19 pandemic [1,6,9,15,153,154].

6. Conclusions

COVID-19 pandemic, has revolutionized the global approach to healthcare and social issues. Lockdown and movement restrictions imposed by various governments have significantly affected the mental well-being of individuals. During the COVID-19 pandemic, anxiety was the most prevalent mental disorder, followed by depression, stress, and insomnia. In addition, a moderate incidence of psychological disturbance and PTSD was documented. Alcohol and substance use, domestic violence, stigmatization, and suicidal tendencies have all been identified as direct consequences of lockdown. These problems have significantly affected individuals' well-being and shut down the global economy. The eminent risk factors for mental health disorders identified include fear of infection, history of mental illness, poor financial status, female gender, and alcohol drinking. The documented protective factors were the higher-income level, public awareness, psychological counseling, social and government support. The primary focus of the government and other policymakers should utilize these protective factors in providing palliatives and incentives to cushion the economic impact of the lockdown. Overall, there is a need to monitor the long-term impact of COVID-19 pandemic on mental health during and after the COVID-19 pandemic.

7. Limitations of this Research

i. Several studies focused on specific people like healthcare workers and parents with children aged 18 years instead of the general population. ii. The selected articles' methodology includes self-report questionnaires or an instrument with cut-off points for stress, anxiety, or depression scores. Hence not homogenous. iii. The articles did not assess the reported mental disorders using a definitive psychiatric diagnosis by a specialist.

8. Article Highlights

I. The review highlighted the origin of the COVID-19 pandemic and the virulent nature of the SARS-CoV-2 virus. II. The COVID-19 pandemic has ravaged the global and individual economies, skyrocketing the global poverty index. III. The high prevalence of anxiety, depression, insomnia, and PTSD were reported during the COVID-19 pandemic, which calls for the urgent need for action. IV. Major risk factors for developing mental disorders include fear of infection, history of mental illness, female gender, younger age, comorbidities, and physical disability. V. Mental health interventions during the COVID-19 pandemic should focus on effective risk communication, continuous testing and assessment, unique approaches for vulnerable groups, community partnerships, online health applications, government policies, public welfare, and funding.

Author Contributions: A.R.A. and M.A.T. designed the study, searched for all the relevant articles, printed them, and screened the article for their eligibility based on inclusion and exclusion criteria. J.O., I.H.S., A.B.R., M.A.R., S.Y.N., A.A., A.D. and F.A. reviewed the articles, and constructed Tables 1 and 2 and wrote the discussion section. A.A., M.I., S.K. and A.E. reviewed and wrote the literature and all the references. A.R.A., M.A.T., S.R., S.S. and M.H. developed the research idea, wrote an abstract, and edited the manuscript. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: No applicated.

Informed Consent Statement: No applicated.

Data Availability Statement: Data is contained within the article.

Acknowledgments: We are grateful to the Department of Pharmacology and Therapeutics, Faculty of Pharmaceutical Sciences, Bayero University, Kano, Nigeria.

Conflicts of Interest: The authors declared no conflict of interest.

References

1. Lok, K.Y.; Fong, D.Y.T.; Wong, J.Y.H.; Ho, M.; Choi, E.P.; Pandian, V.; Davidson, P.M.; Duan, W.; Tarrant, M.; Lee, J.J.; et al. International survey for assessing COVID-19's impact on fear and health: Study protocol. *BMJ Open* **2021**, *11*, e048720. [[CrossRef](#)] [[PubMed](#)]
2. Abubakar, A.R.; Sani, I.H.; Godman, B.; Kumar, S.; Islam, S.; Jahan, I.; Haque, M. Systematic Review on the Therapeutic Options for COVID-19: Clinical Evidence of Drug Efficacy and Implications. *Infect. Drug Resist.* **2020**, *13*, 4673–4695. [[CrossRef](#)] [[PubMed](#)]
3. Gadermann, A.C.; Thomson, K.C.; Richardson, C.G.; Gagné, M.; McAuliffe, C.; Hirani, S.; Jenkins, E. Examining the impacts of the COVID-19 pandemic on family mental health in Canada: Findings from a national cross-sectional study. *BMJ Open* **2021**, *11*, e042871. [[CrossRef](#)] [[PubMed](#)]
4. Mao, L.; Jin, H.; Wang, M.; Hu, Y.; Chen, S.; He, Q.; Chang, J.; Hong, C.; Zhou, Y.; Wang, D.; et al. Neurologic Manifestations of Hospitalized Patients with Coronavirus Disease 2019 in Wuhan, China. *JAMA Neurol.* **2020**, *77*, 683–690. [[CrossRef](#)] [[PubMed](#)]
5. Li, Y.C.; Bai, W.Z.; Hashikawa, T. The neuroinvasive potential of SARS-CoV2 may play a role in the respiratory failure of COVID-19 patients. *J. Med. Virol.* **2020**, *92*, 552–555. [[CrossRef](#)] [[PubMed](#)]
6. Holmes, E.A.; O'Connor, R.C.; Perry, V.H.; Tracey, I.; Wessely, S.; Arseneault, L.; Ballard, C.; Christensen, H.; Silver, R.C.; Everall, I.; et al. Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. *Lancet Psychiatry* **2020**, *7*, 547–560. [[CrossRef](#)]
7. Li, Y.C.; Bai, W.Z.; Hirano, N.; Hayashida, T.; Hashikawa, T. Coronavirus infection of rat dorsal root ganglia: Ultrastructural characterization of viral replication, transfer, and the early response of satellite cells. *Virus Res.* **2012**, *163*, 628–635. [[CrossRef](#)] [[PubMed](#)]

8. Xu, J.; Zhong, S.; Liu, J.; Li, L.; Li, Y.; Wu, X.; Li, Z.; Deng, P.; Zhang, J.; Zhong, N.; et al. Detection of severe acute respiratory syndrome coronavirus in the brain: Potential role of the chemokine mig in pathogenesis. *Clin. Infect. Dis.* **2005**, *41*, 1089–1096. [CrossRef]
9. Organization for Economic Development and Cooperation (OECD). Tackling the Mental Health Impact of the COVID-19 Crisis: An Integrated, Whole-of-Society Response. 2021, pp. 1–16. Available online: https://read.oecd-ilibrary.org/view/?ref=1094_1094455-bukuf1f0cm&title=Tackling-the-mental-health-impact-of-the-COVID-19-crisis-An-integrated-whole-of-society-response (accessed on 6 December 2021).
10. Raony, Í.; de Figueiredo, C.S.; Pandolfo, P.; Giestal-de-Araujo, E.; Oliveira-Silva Bomfim, P.; Savino, W. Psycho-neuroendocrine-immune interactions in COVID-19: Potential impacts on mental health. *Front. Immunol.* **2020**, *11*, 1170. [CrossRef]
11. Shah, J.; Monroe-Wise, A.; Talib, Z.; Nabiswa, A.; Said, M.; Abeid, A.; Mohamed, M.A.; Mohamed, S.; Ali, S.K. Mental health disorders among healthcare workers during the COVID-19 pandemic: A cross-sectional survey from three major hospitals in Kenya. *BMJ Open* **2021**, *11*, e050316. [CrossRef] [PubMed]
12. Shahriarirad, R.; Erfani, A.; Ranjbar, K.; Bazrafshan, A.; Mirahmadizadeh, A. The mental health impact of COVID-19 outbreak: A Nationwide Survey in Iran. *Int. J. Ment. Health Syst.* **2021**, *15*, 19. [CrossRef]
13. Khanal, P.; Devkota, N.; Dahal, M.; Paudel, K.; Joshi, D. Mental health impacts among health workers during COVID-19 in a low resource setting: A cross-sectional survey from Nepal. *Glob. Health* **2020**, *16*, 89. [CrossRef] [PubMed]
14. Prati, G.; Mancini, A.D. The psychological impact of COVID-19 pandemic lockdowns: A review and meta-analysis of longitudinal studies and natural experiments. *Psychol. Med.* **2021**, *51*, 201–211. [CrossRef] [PubMed]
15. Liu, X.; Zhu, M.; Zhang, R.; Zhang, J.; Zhang, C.; Liu, P.; Feng, Z.; Chen, Z. Public mental health problems during COVID-19 pandemic: A large-scale meta-analysis of the evidence. *Transl. Psychiatry* **2021**, *11*, 384. [CrossRef] [PubMed]
16. COVID-19 Mental Disorders Collaborators. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet* **2021**, *398*, 1700–1712. [CrossRef]
17. De Kock, J.H.; Latham, H.A.; Leslie, S.J.; Grindle, M.; Munoz, S.A.; Ellis, L.; Polson, R.; O'Malley, C.M. A rapid review of the impact of COVID-19 on the mental health of healthcare workers: Implications for supporting psychological wellbeing. *BMC Public Health* **2021**, *21*, 104. [CrossRef] [PubMed]
18. Shah, K.; Mann, S.; Singh, R.; Bangar, R.; Kulkarni, R. Impact of COVID-19 on the Mental Health of Children and Adolescents. *Cureus* **2020**, *12*, e10051. [CrossRef]
19. Saladino, V.; Algeri, D.; Auriemma, V. The Psychological and Social Impact of COVID-19: New Perspectives of Well-Being. *Front. Psychol.* **2020**, *11*, 577684. [CrossRef]
20. Serafini, G.; Parmigiani, B.; Amerio, A.; Aguglia, A.; Sher, L.; Amore, M. The psychological impact of COVID-19 on the mental health in the general population. *QJM* **2020**, *113*, 531–537. [CrossRef] [PubMed]
21. Simon, N.M.; Saxe, G.N.; Marmar, C.R. Mental health disorders related to COVID-19–related deaths. *JAMA* **2020**, *324*, 1493–1494. [CrossRef] [PubMed]
22. Butowt, R.; von Bartheld, C.S. Anosmia in COVID-19: Underlying Mechanisms and Assessment of an Olfactory Route to Brain Infection. *Neuroscientist* **2021**, *27*, 582–603. [CrossRef] [PubMed]
23. Ragheb, J.; McKinney, A.; Zierau, M.; Brooks, J.; Hill-Caruthers, M.; Iskander, M.; Ahmed, Y.; Lobo, R.; Mentz, G.; Vlisides, P.E. Delirium and neuropsychological outcomes in critically ill patients with COVID-19: A cohort study. *BMJ Open* **2021**, *17*, e050045. [CrossRef] [PubMed]
24. Khan, F.; Sharma, P.; Pandey, S.; Sharma, D.V.; Kumar, N.; Shukla, S.; Dandu, H.; Jain, A.; Garg, R.K.; Malhotra, H.S. COVID-19-associated Guillain-Barre syndrome: Postinfectious alone or neuroinvasive too? *J. Med. Virol.* **2021**, *93*, 6045–6049. [CrossRef] [PubMed]
25. Sabel, B.A.; Zhou, W.; Huber, F.; Schmidt, F.; Sabel, K.; Gonschorek, A.; Bilc, M. Non-invasive brain microcurrent stimulation therapy of long-COVID-19 reduces vascular dysregulation and improves visual and cognitive impairment. *Restor. Neurol. Neurosci.* **2021**, *39*, 393–408. [CrossRef] [PubMed]
26. Cao, W.; Zhang, C.; Wang, H.; Wu, Q.; Yuan, Y.; Chen, J.; Geng, S.; Zhang, X. Ischemic Stroke: An Underestimated Complication of COVID-19. *Aging Dis.* **2021**, *12*, 691–704. [CrossRef]
27. Desforges, M.; Le Coupanec, A.; Dubeau, P.; Bourgouin, A.; Lajoie, L.; Dubé, M.; Talbot, P.J. Human Coronaviruses and Other Respiratory Viruses: Underestimated Opportunistic Pathogens of the Central Nervous System? *Viruses* **2019**, *12*, 14. [CrossRef]
28. Attademo, L.; Bernardini, F. Are dopamine and serotonin involved in COVID-19 pathophysiology? *Eur. J. Psychiatry* **2021**, *35*, 62–63. [CrossRef] [PubMed]
29. Moher, D.; Shamseer, L.; Clarke, M.; Ghersi, D.; Liberati, A.; Petticrew, M.; Shekelle, P.; Stewart, L.A.; PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst. Rev.* **2015**, *4*, 1. [CrossRef]
30. Manoukian, S.; Stewart, S.; Dancer, S.; Graves, N.; Mason, H.; McFarland, A.; Robertson, C.; Reilly, J. Estimating excess length of stay due to healthcare-associated infections: A systematic review and meta-analysis of statistical methodology. *J. Hosp. Infect.* **2018**, *100*, 222–235. [CrossRef]
31. Almeida, P.H.R.F.; Silva, T.B.C.; de Assis Acurcio, F.; Guerra Júnior, A.A.; Araújo, V.E.; Diniz, L.M.; Godman, B.; Almeida, A.M.; Alvares, J. Quality of Life of Patients with Type 1 Diabetes Mellitus Using Insulin Analog Glargine Compared with NPH Insulin: A Systematic Review and Policy Implications. *Patient* **2018**, *11*, 377–389. [CrossRef]

32. Lai, J.; Ma, S.; Wang, Y.; Cai, Z.; Hu, J.; Wei, N.; Wu, J.; Du, H.; Chen, T.; Li, R.; et al. Factors Associated with Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Netw. Open* **2020**, *3*, e203976. [[CrossRef](#)] [[PubMed](#)]
33. Guo, W.P.; Min, Q.; Gu, W.W.; Yu, L.; Xiao, X.; Yi, W.B.; Li, H.L.; Huang, B.; Li, J.L.; Dai, Y.J.; et al. Prevalence of mental health problems in frontline healthcare workers after the first outbreak of COVID-19 in China: A cross-sectional study. *Health Qual. Life Outcom.* **2021**, *19*, 103. [[CrossRef](#)]
34. Li, S.H.; Beames, J.R.; Newby, J.M.; Maston, K.; Christensen, H.; Werner-Seidler, A. The impact of COVID-19 on the lives and mental health of Australian adolescents. *Eur. Child Adolesc. Psychiatry* **2021**, *2021*, 1–13. [[CrossRef](#)]
35. Wong, L.P.; Alias, H.; Md Fuzi, A.A.; Omar, I.S.; Mohamad Nor, A.; Tan, M.P.; Baranovich, D.L.; Saari, C.Z.; Hamzah, S.H.; Cheong, K.W.; et al. Escalating progression of mental health disorders during the COVID-19 pandemic: Evidence from a nationwide survey. *PLoS ONE* **2021**, *16*, e0248916. [[CrossRef](#)] [[PubMed](#)]
36. Azizi, M.; Kamali, M.; Moosazadeh, M.; Aarabi, M.; Ghasemian, R.; Hasannezhad Reskati, M.; Elyasi, F. Assessing mental health status among Iranian healthcare workers in times of the COVID-19 pandemic: A web-based cross-sectional study. *Brain Behav.* **2021**, *11*, e2304. [[CrossRef](#)] [[PubMed](#)]
37. Rek, S.V.; Bühner, M.; Reinhard, M.A.; Freeman, D.; Keeser, D.; Adorjan, K.; Falkai, P.; Padberg, F. The COVID-19 Pandemic Mental Health Questionnaire (CoPaQ): Psychometric evaluation and compliance with countermeasures in psychiatric inpatients and non-clinical individuals. *BMC Psychiatry* **2021**, *21*, 426. [[CrossRef](#)]
38. Al-Rahimi, J.S.; Nass, N.M.; Hassoubah, S.A.; Wazqar, D.Y.; Alamoudi, S.A. Levels and predictors of fear and health anxiety during the current outbreak of COVID-19 in immunocompromised and chronic disease patients in Saudi Arabia: A cross-sectional correlational study. *PLoS ONE* **2021**, *16*, e0250554. [[CrossRef](#)] [[PubMed](#)]
39. Dawel, A.; Shou, Y.; Smithson, M.; Cherbuin, N.; Banfield, M.; Caele, A.L.; Farrer, L.M.; Gray, D.; Gulliver, A.; Housen, T.; et al. The Effect of COVID-19 on Mental Health and Wellbeing in a Representative Sample of Australian Adults. *Front. Psychiatry* **2020**, *11*, 579985. [[CrossRef](#)] [[PubMed](#)]
40. Wilson, M.J.; Seidler, Z.E.; Oliffe, J.L.; Toogood, N.; Kealy, D.; Ogrodniczuk, J.S.; Walther, A.; Rice, S.M. “Appreciate the Little Things”: A Qualitative Survey of Men’s Coping Strategies and Mental Health Impacts During the COVID-19 Pandemic. *Am. J. Men’s Health* **2022**, *16*, 15579883221099794. [[CrossRef](#)] [[PubMed](#)]
41. Simon, J.; Helter, T.M.; White, R.G.; van der Boor, C.; Łaszewska, A. Impacts of the COVID-19 lockdown and relevant vulnerabilities on capability wellbeing, mental health, and social support: An Austrian survey study. *BMC Public Health* **2021**, *21*, 314. [[CrossRef](#)] [[PubMed](#)]
42. Jasim, G.; Jamel, M.; Brennan, E.; Yusuf, M.; Hasan, N.; Alsatian, Y. Psychological impact of COVID-19, isolation, and quarantine: A cross-sectional study. *Neuropsychiatr. Dis. Treat.* **2021**, *17*, 1413–1421. [[CrossRef](#)]
43. Islam, M.S.; Rahman, M.E.; Al Zubair, A.; Bhuiya, M.R.A.M.; Khan, M.K.A.; Hossain, L.; and Suwon, M.M.A. Investigating poor sleep quality and associated factors during the COVID-19 pandemic: A population-based survey in Bangladesh. *Front. Public Health* **2021**, *9*, 724520. [[CrossRef](#)] [[PubMed](#)]
44. Das, R.; Hasan, M.R.; Daria, S.; Islam, M.R. Impact of COVID-19 pandemic on mental health among general Bangladeshi population: A cross-sectional study. *BMJ Open* **2021**, *11*, e045727. [[CrossRef](#)]
45. Islam, M.A.; Barn, S.D.; Raihan, H.; Khan, M.N.A.; Hossain, M.T. Depression, and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. *PLoS ONE* **2020**, *15*, e0238162. [[CrossRef](#)]
46. Mehareen, J.; Rahman, M.A.; Thira, T.A.; Sarker, A.R. Prevalence and sociodemographic correlates of depression, anxiety, and comorbidity during COVID-19: A cross-sectional study among public and private university students of Bangladesh. *J. Affect. Disord. Rep.* **2021**, *5*, 100179. [[CrossRef](#)]
47. Lopes, A.R.; Nihei, O.K. Depression, anxiety and stress symptoms in Brazilian university students during the COVID-19 pandemic: Predictors and association with life satisfaction, psychological wellbeing, and coping strategies. *PLoS ONE* **2021**, *16*, e0258493. [[CrossRef](#)]
48. Maximova, K.; Khan, M.K.A.; Dabravolskaj, J.; Maunula, L.; Ohinmaa, A.; Veugelers, P.J. Perceived changes in lifestyle behaviors and in mental health and wellbeing of elementary school children during the first COVID-19 lockdown in Canada. *Public Health* **2022**, *202*, 35–42. [[CrossRef](#)] [[PubMed](#)]
49. Song, X.; Fu, W.; Liu, X.; Luo, Z.; Wang, R.; Zhou, N.; Yan, S.; Lv, C. Mental health status of medical staff in emergency departments during the Coronavirus disease 2019 epidemic in China. *Brain Behav. Immun.* **2020**, *88*, 60–65. [[CrossRef](#)] [[PubMed](#)]
50. Cao, W.; Fang, Z.; Hou, G.; Han, M.; Xu, X.; Dong, J.; Zheng, J. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res.* **2020**, *287*, 112934. [[CrossRef](#)]
51. Li, J.; Xu, J.; Zhou, H.; You, H.; Wang, X.; Li, Y.; Liang, Y.; Li, S.; Ma, L.; Zeng, J.; et al. Working conditions and health status of 6,317 front line public health workers across five provinces in China during the COVID-19 epidemic: A cross-sectional study. *BMC Public Health* **2021**, *21*, 106. [[CrossRef](#)]
52. Huang, J.; Liu, F.; Teng, Z.; Chen, J.; Zhao, J.; Wang, X.; Wu, Y.; Xiao, J.; Wang, Y.; and Wu, R. Public Behavior Change, Perceptions, Depression, and Anxiety in Relation to the COVID-19 Outbreak. *Open Forum Infect. Dis.* **2020**, *7*, ofaa273. [[CrossRef](#)] [[PubMed](#)]
53. Zhu, Z.; Xu, S.; Wang, H.; Liu, Z.; Wu, J.; Li, G.; Miao, J.; Zhang, C.; Yang, Y.; Sun, W.; et al. COVID-19 in Wuhan: Sociodemographic characteristics and hospital support measures associated with the immediate psychological impact on healthcare workers. *EClinicalMedicine* **2020**, *24*, 100443. [[CrossRef](#)]

54. Liu, Z.; Han, B.; Jiang, R.; Huang, Y.; Ma, C.; Wen, J.; Zhang, T.; Wang, Y.; Chen, H.; Ma, Y. Mental health status of doctors and nurses during COVID-19 epidemic in China. *SSRN Elec. J.* **2020**. [\[CrossRef\]](#)
55. Ren, C.; Zhou, D.; Fan, Y.; Li, B.; Zhang, W.; Shen, Y.; Yu, S.; Jiang, L.; Yu, F.; Duan, Y.; et al. Prevalence and influencing factors of anxiety and depression symptoms among surgical nurses during COVID-19 pandemic: A large-scale cross-sectional study. *Nurs. Open* **2022**, *9*, 752–764. [\[CrossRef\]](#)
56. Duan, L.; Shao, X.; Wang, Y.; Huang, Y.; Miao, J.; Yang, X.; Zhu, G. An investigation of mental health status of children and adolescents in china during the outbreak of COVID-19. *J. Affect. Disord.* **2020**, *275*, 112–118. [\[CrossRef\]](#) [\[PubMed\]](#)
57. Huang, Y.; Su, X.; Si, M.; Xiao, W.; Wang, H.; Wang, W.; Gu, X.; Ma, L.; Li, J.; Zhang, S.; et al. The impacts of coping style and perceived social support on the mental health of undergraduate students during the early phases of the COVID-19 pandemic in China: A multicenter survey. *BMC Psychiatry* **2021**, *21*, 530. [\[CrossRef\]](#)
58. Hou, F.; Bi, F.; Jiao, R.; Luo, D.; Song, K. Gender differences of depression and anxiety among social media users during the COVID-19 outbreak in China: A cross-sectional study. *BMC Public Health* **2020**, *20*, 1648. [\[CrossRef\]](#) [\[PubMed\]](#)
59. Cai, Q.; Feng, H.; Huang, J.; Wang, M.; Wang, Q.; Lu, X.; Xie, Y.; Wang, X.; Liu, Z.; Hou, B.; et al. The mental health of frontline and non-frontline medical workers during the coronavirus disease 2019 (COVID-19) outbreak in China: A case-control study. *J. Affect. Disord.* **2020**, *275*, 210–215. [\[CrossRef\]](#) [\[PubMed\]](#)
60. Lu, W.; Wang, H.; Lin, Y.; Li, L. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. *Psychiatry Res.* **2020**, *288*, 112936. [\[CrossRef\]](#) [\[PubMed\]](#)
61. Que, J.; Shi, L.; Deng, J.; Liu, J.; Zhang, L.; Wu, S.; Gong, Y.; Huang, W.; Yuan, K.; Yan, W.; et al. Psychological impact of the COVID-19 pandemic on healthcare workers: A cross-sectional study in China. *Gen. Psychiatr.* **2020**, *33*, e100259. [\[CrossRef\]](#)
62. Zhang, W.R.; Wang, K.; Yin, L.; Zhao, W.F.; Xue, Q.; Peng, M.; Min, B.Q.; Tian, Q.; Leng, H.X.; Du, J.L.; et al. Mental Health and Psychosocial Problems of Medical Health Workers during the COVID-19 Epidemic in China. *Psychother. Psychosom.* **2020**, *89*, 242–250. [\[CrossRef\]](#) [\[PubMed\]](#)
63. Liu, Y.; Wang, L.; Chen, L.; Zhang, X.; Bao, L.; Shi, Y. Mental Health Status of Paediatric Medical Workers in China During the COVID-19 Outbreak. *Front. Psychiatry* **2020**, *11*, 702. [\[CrossRef\]](#) [\[PubMed\]](#)
64. Wang, C.; Pan, R.; Wan, X.; Tan, Y.; Xu, L.; McIntyre, R.S.; Choo, F.N.; Tran, B.; Ho, R.; Sharma, V.K.; et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain Behav. Immun.* **2020**, *87*, 40–48. [\[CrossRef\]](#) [\[PubMed\]](#)
65. Wang, H.; Xia, Q.; Xiong, Z.; Li, Z.; Xiang, W.; Yuan, Y.; Liu, Y.; Li, Z. The psychological distress and coping styles in the early stages of the 2019 coronavirus disease (COVID-19) epidemic in the general mainland Chinese population: A web-based survey. *PLoS ONE* **2020**, *15*, e0233410. [\[CrossRef\]](#)
66. Kang, L.; Ma, S.; Chen, M.; Yang, J.; Wang, Y.; Li, R.; Yao, L.; Bai, H.; Cai, Z.; Xiang, Y.B.; et al. on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study. *Brain Behav. Immun.* **2020**, *87*, 11–17. [\[CrossRef\]](#)
67. Du, J.; Mayer, G.; Hummel, S.; Oetjen, N.; Gronewold, N.; Zafar, A.; Schultz, J.H. Mental Health Burden in Different Professions during the Final Stage of the COVID-19 Lockdown in China: Cross-sectional Survey Study. *J. Med. Internet. Res.* **2020**, *22*, e24240. [\[CrossRef\]](#)
68. Ning, X.; Yu, F.; Huang, Q.; Li, X.; Luo, Y.; Huang, Q.; Chen, C. The mental health of neurological doctors and nurses in Hunan Province, China, during the initial stages of the COVID-19 outbreak. *BMC Psychiatry* **2020**, *20*, 436. [\[CrossRef\]](#)
69. Liang, L.; Ren, H.; Cao, R.; Hu, Y.; Qin, Z.; Li, C.; Mei, S. The Effect of COVID-19 on Youth Mental Health. *Psychiatr. Q.* **2020**, *91*, 841–852. [\[CrossRef\]](#)
70. Liu, C.Y.; Yang, Y.Z.; Zhang, X.M.; Xu, X.; Dou, Q.L.; Zhang, W.W.; Cheng, A.S. The prevalence and influencing factors in anxiety in medical workers fighting COVID-19 in China: A cross-sectional survey. *Epidemiol. Infect.* **2020**, *148*, e98. [\[CrossRef\]](#)
71. Juan, Y.; Yuanyuan, C.; Qiuxiang, Y.; Cong, L.; Xiaofeng, L.; Yundong, Z.; Jing, C.; Peifeng, Q.; Yan, L.; Xiaojiao, X.; et al. Psychological distress surveillance and related impact analysis of hospital staff during the COVID-19 epidemic in Chongqing, China. *Compr. Psychiatry* **2020**, *103*, 152198. [\[CrossRef\]](#)
72. Zhang, Y.; Ma, Z.F. Impact of the COVID-19 Pandemic on Mental Health and Quality of Life among Local Residents in Liaoning Province, China: A Cross-Sectional Study. *Int. J. Environ. Res. Public Health* **2020**, *17*, 2381. [\[CrossRef\]](#) [\[PubMed\]](#)
73. Liu, J.; Zhu, Q.; Fan, W.; Makamure, J.; Zheng, C.; Wang, J. Online Mental Health Survey in a Medical College in China during the COVID-19 Outbreak. *Front. Psychiatry* **2020**, *11*, 459. [\[CrossRef\]](#) [\[PubMed\]](#)
74. Rodríguez-Hidalgo, A.J.; Pantaleón, Y.; Dios, I.; Falla, D. Fear of COVID-19, Stress, and Anxiety in University Undergraduate Students: A Predictive Model for Depression. *Front. Psychol.* **2020**, *11*, 591797. [\[CrossRef\]](#) [\[PubMed\]](#)
75. Deek, H.; El Nayal, M.; Alabdulwahhab, K.; Ahmad, M.; Shaik, R.; Alzahrani, M.; Elmahdi, I.; Youssef, N.; Alboraie, M.; Fong, D.Y.; et al. A multi-centric study on validation of the Fear Scale for COVID-19 in five Arabic-speaking countries. *Brain Behav.* **2021**, *11*, e2375. [\[CrossRef\]](#) [\[PubMed\]](#)
76. Herbert, C.; El Bolock, A.; Abdennadher, S. How do you feel during the COVID-19 pandemic? A survey using psychological and linguistic self-report measures, and machine learning to investigate mental health, subjective experience, personality, and behavior during the COVID-19 pandemic among university students. *BMC Psychol.* **2021**, *9*, 90. [\[CrossRef\]](#)
77. Fancourt, D.; Steptoe, A.; Bu, F. Trajectories of anxiety and depressive symptoms during enforced isolation due to COVID-19 in England: A longitudinal observational study. *Lancet Psychiatry* **2021**, *8*, 141–149. [\[CrossRef\]](#)

78. Zaninotto, P.; Iob, E.; Demakakos, P.; Steptoe, A. Immediate and Longer-Term Changes in the Mental Health and Well-being of Older Adults in England During the COVID-19 Pandemic. *JAMA Psychiatry* **2022**, *79*, 151–159. [\[CrossRef\]](#)
79. Assefa, Z.M.; Haile, T.G.; Wazema, D.H.; Tafese, W.T.; Berrie, F.W.; Beketie, E.D.; Hailemariam, B.Z.; Zewudie, B.T.; Teke, N.E.; Metebo, K.N. Mental Health Disorders During COVID-19 Pandemic Among Southwest Ethiopia University Students: An Institutional-Based Cross-Sectional Study. *SAGE Open Nurs.* **2021**, *7*, 23779608211064374. [\[CrossRef\]](#)
80. Girma, A.; Ayalew, E.; Mesafint, G. COVID-19 Pandemic-Related Stress, and Coping Strategies among Adults with Chronic Disease in Southwest Ethiopia. *Neuropsychiatr. Dis. Treat.* **2021**, *17*, 1551–1561. [\[CrossRef\]](#)
81. Geweniger, A.; Barth, M.; Haddad, A.D.; Högl, H.; Insan, S.; Mund, A.; Langer, T. Impact of the COVID-19 Pandemic on Mental Health Outcomes of Healthy Children, Children with Special Health Care Needs and Their Caregivers-Results of a Cross-Sectional Study. *Front. Pediatr.* **2022**, *10*, 759066. [\[CrossRef\]](#)
82. Schäfer, S.K.; Sopp, M.R.; Schanz, C.G.; Staginnus, M.; Göritz, A.S.; Michael, T. Impact of COVID-19 on Public Mental Health and the Buffering Effect of a Sense of Coherence. *Psychother. Psychosom.* **2020**, *89*, 386–392. [\[CrossRef\]](#)
83. Knolle, F.; Ronan, L.; Murray, G.K. The impact of the COVID-19 pandemic on mental health in the general population: A comparison between Germany and the UK. *BMC Psychol.* **2021**, *9*, 60. [\[CrossRef\]](#)
84. Magklara, K.; Lazaratou, H.; Barbouni, A.; Poulas, K.; Farsalinos, K. Coronavirus Greece Research Group. Impact of COVID-19 pandemic and lockdown measures on mental health of children and adolescents in Greece. *MedRxiv* **2020**. [\[CrossRef\]](#)
85. Reddy, V.; Karri, S.R.; Jezreel, T.; Afeen, S.; Khairkar, P. Psychosocial impact of COVID-19 lockdown on mental wellbeing among 11 states of India: A Markov modeling approach. *J. Psychiatry Psychiatr. Disord.* **2020**, *4*, 158–174. [\[CrossRef\]](#)
86. Saraswathi, I.; Saikarthik, J.; Kumar, K.S.; Srinivasan, K.M.; Ardhanaari, M.; Gunapriya, R. Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: A prospective longitudinal study. *PeerJ* **2020**, *8*, e10164. [\[CrossRef\]](#) [\[PubMed\]](#)
87. Zukhra, R.M.; Nauli, F.A.; Konadi, A. Anxiety among nursing students during the COVID-19 pandemic: A web-based cross-sectional survey. *Enferm. Clin.* **2021**, *31*, 580–582. [\[CrossRef\]](#) [\[PubMed\]](#)
88. Sharif Nia, H.; Gorgulu, O.; Naghavi, N.; Robles-Bello, M.A.; Sánchez-Teruel, D.; Khoshnavay Fomani, F.; She, L.; Rahmatpour, P.; Allen, K.A.; Arslan, G.; et al. Spiritual Well-Being, Social Support, and Financial Distress in Determining Depression: The Mediating Role of Impact of Event During COVID-19 Pandemic in Iran. *Front. Psychiatry* **2021**, *12*, 1854. [\[CrossRef\]](#) [\[PubMed\]](#)
89. Hassannia, L.; Taghizadeh, F.; Moosazadeh, M.; Zarghami, M.; Taghizadeh, H.; Dooki, A.F.; Fathi, M.; Navaei, R.A.; Hedayatizadeh-Omran, A. Anxiety and Depression in Health Workers and General Population During COVID-19 in IRAN: A Cross-Sectional Study. *Neuropsychopharmacol. Rep.* **2021**, *41*, 40–49. [\[CrossRef\]](#) [\[PubMed\]](#)
90. Salehian, R.; Ghanbari, J.A.; Naserbakht, M.; Abdi, M. Posttraumatic Stress Symptoms and General Mental Health Problems during the COVID-19 Pandemic in Iran: A Web-Based Cross-sectional Survey. *Iran. J. Psychiatry Behav. Sci.* **2021**, *15*, e114432. [\[CrossRef\]](#)
91. Mani, A.; Estedlal, A.R.; Kamali, M.; Ghaemi, S.Z.; Zarei, L.; Shokrpour, N.; Heydari, S.T.; Lankarani, K.B. Mental health status during COVID-19 pandemic in Fars Province, Iran: Timely measures. *BMC Public Health* **2020**, *20*, 1866. [\[CrossRef\]](#)
92. Kausar, N.; Ishaq, A.; Qurban, H.; Rashid, H.A. Fear of COVID-19 and Depression: Mediating Role of Anxiety and Stress among University Students. *J. Biores. Manag.* **2021**, *8*, 81–90. [\[CrossRef\]](#)
93. Chen, J.; Zhang, S.X.; Wang, Y.; Afshar, J.A.; Mokhtari, D.M.; Nazarian, M.A.; Nawaser, K. The Relationship between Age and Mental Health among Adults in Iran During the COVID-19 Pandemic. *Int. J. Ment. Health Addict.* **2021**, 1–16. [\[CrossRef\]](#) [\[PubMed\]](#)
94. Mohammadi, S.M.; Ashtari, S.; Khosh, F.M. The psychological impact of COVID-19 pandemic on mental health of Iranian population. *Int. J. Travel Med. Glob. Health* **2021**, *9*, 19–24. [\[CrossRef\]](#)
95. Orgilés, M.; Morales, A.; Delvecchio, E.; Mazzeschi, C.; Espada, J.P. Immediate Psychological Effects of the COVID-19 Quarantine in Youth from Italy and Spain. *Front. Psychol.* **2020**, *11*, 579038. [\[CrossRef\]](#) [\[PubMed\]](#)
96. Rossi, R.; Socci, V.; Talevi, D.; Mensi, S.; Niolu, C.; Pacitti, F.; Di Marco, A.; Rossi, A.; Siracusano, A.; Di Lorenzo, G. COVID-19 Pandemic and Lockdown Measures Impact on Mental Health Among the General Population in Italy. *Front. Psychiatry* **2020**, *11*, 790. [\[CrossRef\]](#) [\[PubMed\]](#)
97. Davico, C.; Ghiggia, A.; Marcotulli, D.; Ricci, F.; Amianto, F.; Vitiello, B. Psychological Impact of the COVID-19 Pandemic on Adults and Their Children in Italy. *Front. Psychiatry* **2021**, *12*, 572997. [\[CrossRef\]](#)
98. Villani, L.; Pastorino, R.; Molinari, E.; Anelli, F.; Ricciardi, W.; Graffigna, G.; Boccia, S. Impact of the COVID-19 pandemic on psychological wellbeing of students in an Italian university: A web-based cross-sectional survey. *Global. Health* **2021**, *17*, 39. [\[CrossRef\]](#) [\[PubMed\]](#)
99. Giusti, E.M.; Pedrolì, E.; D’Aniello, G.E.; Stramba Badiale, C.; Pietrabissa, G.; Manna, C.; Stramba Badiale, M.; Riva, G.; Castelnovo, G.; Molinari, E. The Psychological Impact of the COVID-19 Outbreak on Health Professionals: A Cross-Sectional Study. *Front. Psychol.* **2020**, *11*, 1684. [\[CrossRef\]](#)
100. Levkovich, I.; Shinan-Altman, S. Impact of the COVID-19 pandemic on stress and emotional reactions in Israel: A mixed-methods study. *Int. Health* **2021**, *13*, 358–366. [\[CrossRef\]](#)
101. Basheti, I.A.; Mhaidat, Q.N.; Mhaidat, H.N. Prevalence of anxiety and depression during COVID-19 pandemic among healthcare students in Jordan and its effect on their learning process: A national survey. *PLoS ONE* **2021**, *16*, e0249716. [\[CrossRef\]](#) [\[PubMed\]](#)

102. Bahar Moni, A.S.; Abdullah, S.; Bin Abdullah, M.F.I.L.; Kabir, M.S.; Alif, S.M.; Sultana, F.; Salehin, M.; Islam, S.M.S.; Cross, W.; Rahman, M.A. Psychological distress, fear, and coping among Malaysians during the COVID-19 pandemic. *PLoS ONE* **2021**, *16*, e0257304. [\[CrossRef\]](#) [\[PubMed\]](#)
103. Sundarasan, S.; Chinna, K.; Kamaludin, K.; Nurunnabi, M.; Baloch, G.M.; Khoshaim, H.B.; Hossain, S.F.A.; Sukayt, A. Psychological Impact of COVID-19 and Lockdown among University Students in Malaysia: Implications and Policy Recommendations. *Int. J. Environ. Res. Public Health* **2020**, *17*, 6206. [\[CrossRef\]](#) [\[PubMed\]](#)
104. Baloch, G.M.; Sundarasan, S.; Chinna, K.; Nurunnabi, M.; Kamaludin, K.; Khoshaim, H.B.; Hossain, S.F.A.; AlSukayt, A. COVID-19: Exploring impacts of the pandemic and lockdown on mental health of Pakistani students. *PeerJ* **2021**, *9*, e10612. [\[CrossRef\]](#) [\[PubMed\]](#)
105. Norhayati, M.N.; Che, Y.R.; Azman, M.Y. Depressive symptoms among frontline and non-front line healthcare providers in response to the COVID-19 pandemic in Kelantan, Malaysia: A cross-sectional study. *PLoS ONE* **2021**, *16*, e0256932. [\[CrossRef\]](#)
106. Chinna, K.; Sundarasan, S.; Khoshaim, H.B.; Kamaludin, K.; Nurunnabi, M.; Baloch, G.M.; Hossain, S.F.A.; Sukayt, A.; Dalina, N.; Rajagopalan, U.; et al. Psychological impact of COVID-19 and lock down measures: An online cross-sectional multicounty study on Asian university students. *PLoS ONE* **2021**, *16*, e0253059. [\[CrossRef\]](#)
107. Cortés-Álvarez, N.Y.; Piñero-Lamas, R.; Vuelvas-Olmos, C.R. Psychological Effects and Associated Factors of COVID-19 in a Mexican Sample. *Disaster. Med. Public Health Prep.* **2020**, *14*, 413–424. [\[CrossRef\]](#)
108. Khanal, P.; Paudel, K.; Devkota, N.; Dahal, M.; Mishra, S.R.; Joshi, D. Coronavirus fear among health workers during the early phase of pandemic response in Nepal: A web-based cross-sectional study. *PLoS Glob. Public Health* **2021**, *12*, e0000083. [\[CrossRef\]](#)
109. van der Goot, W.E.; Duvivier, R.J.; Van Yperen, N.W.; de Carvalho-Filho, M.A.; Noot, K.E.; Ikink, R.; Gans, R.O.; Kloeze, E.; Tulleken, J.E.; Lammers, A.J.; et al. Psychological distress among frontline workers during the COVID-19 pandemic: A mixed-methods study. *PLoS ONE* **2021**, *16*, e0255510. [\[CrossRef\]](#)
110. Tobin, E.; Okogbenin, E.; Obi, A. A Population-Based Cross-Sectional Study of Anxiety and Depression Associated with the COVID-19 Pandemic in Nigeria. *Afr. J. Public Health* **2021**, *7*, 127–135. [\[CrossRef\]](#)
111. Olaseni, A.O.; Akinsola, O.S.; Agberotimi, S.F.; Oguntayo, R. Psychological distress experiences of Nigerians during COVID-19 pandemic; the gender difference. *Soc. Sci. Humanit. Open* **2020**, *2*, 100052. [\[CrossRef\]](#)
112. Durowade, K.A.; Sanni, T.A.; Adeniyi, M.A.; Babalola, S.A.; Popoola, T.A.; Adebara, I.O.; Ajayi, E.A. Psychological, socioeconomic effects of COVID-19 pandemic and associated prevalent self-reported vulnerability factors among residents of Southwest Nigeria. *Niger. J. Med.* **2020**, *29*, 566–574. [\[CrossRef\]](#)
113. Adewale, B.; Adeniyi, Y.; Adeniyi, O.; Ojadiran, B.; Aremu, P.; Odeyemi, O.; Akintayo, A.D.; Oluwadamilare, F.A.; Offorbuike, C.B.; Owioye, I.P. Psychological Impact of COVID-19 Pandemic on Students at the University of Ibadan in Nigeria. *J. Educ. Soc. Behav. Sci.* **2021**, *34*, 79–92. [\[CrossRef\]](#)
114. Fadipe, B.; Oshodi, Y.O.; Umeh, C.; Aikomo, K.; Ajirotutu, O.F.; Kajero, J.; Fashanu, C.; Adeoye, A.A.; Coker, A.O.; Sokunbi, M.; et al. Psychosocial health effects of COVID-19 infection on persons in treatment centers in Lagos, Nigeria. *Brain Behav. Immun.* **2021**, *16*, 100284. [\[CrossRef\]](#)
115. Afolabi, A. Mental health implications of lockdown during coronavirus pandemic among adults' resident in Ibadan, Nigeria. *Afr. J. Soc. Work* **2020**, *10*, 50–58.
116. Khamis, F.; Al Mahyijari, N.; Al Lawati, F.; Badahdah, A.M. The Mental Health of Female Physicians and Nurses in Oman during the COVID-19 Pandemic. *Oman Med. J.* **2020**, *35*, e203. [\[CrossRef\]](#) [\[PubMed\]](#)
117. Hayat, K.; Arshed, M.; Fiaz, I.; Afreen, U.; Khan, F.U.; Khan, T.A.; Kadirhaz, M.; Shukar, S.; Saeed, A.; Gill, M.R.; et al. Impact of COVID-19 on the Mental Health of Healthcare Workers: A Cross-Sectional Study from Pakistan. *Front. Public Health* **2021**, *9*, 603602. [\[CrossRef\]](#)
118. Majeed, S.; Ashraf, M. Psychological impacts of social distancing during COVID-19 pandemic in adolescents of Lahore, Pakistan. *Ann. King Edw. Med. Univ.* **2020**, *26*, 165–169. [\[CrossRef\]](#)
119. Radwan, E.; Radwan, A.; Radwan, W.; Pandey, D. Prevalence of depression, anxiety and stress during the COVID-19 pandemic: A cross-sectional study among Palestinian students (10–18 years). *BMC Psychol.* **2021**, *9*, 187. [\[CrossRef\]](#)
120. Villarreal-Zegarra, D.; Copez-Lonzoy, A.; Vilela-Estrada, A.L.; Huarcaya-Victoria, J. Depression, post-traumatic stress, anxiety, and fear of COVID-19 in the general population and healthcare workers: Prevalence, relationship, and explicative model in Peru. *BMC Psychiatry* **2021**, *21*, 455. [\[CrossRef\]](#)
121. Stack, E.; Leichtling, G.; Larsen, J.E.; Gray, M.; Pope, J.; Leahy, J.M.; Gelberg, L.; Seaman, A.; Korthuis, P.T. The Impacts of COVID-19 on Mental Health, Substance Use, and Overdose Concerns of People Who Use Drugs in Rural Communities. *J. Addict. Med.* **2021**, *15*, 383–389. [\[CrossRef\]](#)
122. Karpenko, O.A.; Syunyakov, T.S.; Kulygina, M.A.; Pavlichenko, A.V.; Chetkina, A.S.; Andrushchenko, A.V. Impact of COVID-19 pandemic on anxiety, depression, and distress—online survey results amid the pandemic in Russia. *Consort. Psychiatr.* **2020**, *1*, 8–20. [\[CrossRef\]](#)
123. Alkhamees, A.A.; Alrashed, S.A.; Alzunaydi, A.A.; Almohimeed, A.S.; Aljohani, M.S. The psychological impact of the COVID-19 pandemic on the general population of Saudi Arabia. *Compr. Psychiatry* **2020**, *102*, 152192. [\[CrossRef\]](#) [\[PubMed\]](#)
124. Alyoubi, A.; Halstead, E.J.; Zambelli, Z.; Dimitriou, D. The Impact of the COVID-19 Pandemic on Students' Mental Health and Sleep in Saudi Arabia. *Int. J. Environ. Res. Public Health* **2021**, *18*, 9344. [\[CrossRef\]](#) [\[PubMed\]](#)

125. Odriozola-González, P.; Planchuelo-Gómez, Á.; Irturtia, M.J.; de Luis-García, R. Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university. *Psychiatry Res.* **2020**, *290*, 113108. [\[CrossRef\]](#)
126. Muñoz-Violant, S.; Violant-Holz, V.; Gallego-Jiménez, M.G.; Anguera, M.T.; Rodríguez, M.J. Coping strategies patterns to buffer the psychological impact of the State of Emergency in Spain during the COVID-19 pandemic's early months. *Sci. Rep.* **2021**, *11*, 24400. [\[CrossRef\]](#)
127. Visser, M.; Law-van, W.E. University students' mental health, and emotional wellbeing during the COVID-19 pandemic and ensuing lockdown. *S. Afr. J. Psychol.* **2021**, *51*, 229–243. [\[CrossRef\]](#)
128. Posel, D.; Oyenubi, A.; Kollamparambil, U. Job loss and mental health during the COVID-19 lockdown: Evidence from South Africa. *PLoS ONE* **2021**, *16*, e0249352. [\[CrossRef\]](#) [\[PubMed\]](#)
129. Werling, A.M.; Walitza, S.; Eliez, S.; Drechsler, R. Impact of the COVID-19 pandemic on mental health and family situation of clinically referred children and adolescents in Switzerland: Results of a survey among mental health care professionals after 1 year of COVID-19. *J. Neural Trans.* **2022**, *129*, 675–688. [\[CrossRef\]](#)
130. Krifa, I.; van Zyl, L.E.; Braham, A.; Ben Nasr, S.; Shankland, R. Mental health during COVID-19 pandemic: The role of optimism and emotional regulation. *Int. J. Environ. Res. Public Health* **2022**, *27*, 1413. [\[CrossRef\]](#)
131. Al Dhaheri, A.S.; Bataineh, M.A.F.; Mohamad, M.N.; Ajab, A.; Al Marzouqi, A.; Jarrar, A.H.; Habib-Mourad, C.; Abu Jamous, D.O.; Ali, H.I.; Al Sabbah, H.; et al. Impact of COVID-19 on mental health and quality of life: Is there any effect? A cross-sectional study of the MENA region. *PLoS ONE* **2021**, *16*, e0249107. [\[CrossRef\]](#)
132. Saddik, B.; Elbarazi, I.; Temsah, M.H.; Saheb, S.F.; Kheder, W.; Hussein, A.; Najim, H.; Bendardaf, R.; Hamid, Q.; Halwani, R. Psychological Distress, and Anxiety Levels Among Health Care Workers at the Height of the COVID-19 Pandemic in the United Arab Emirates. *Int. J. Public Health* **2021**, *66*, 1604369. [\[CrossRef\]](#) [\[PubMed\]](#)
133. O'Connor, R.C.; Wetherall, K.; Cleare, S.; McClelland, H.; Melson, A.J.; Niedzwiedz, C.L.; O'Carroll, R.E.; O'Connor, D.B.; Platt, S.; Scowcroft, E.; et al. Mental health and wellbeing during the COVID-19 pandemic: Longitudinal analyses of adults in the UK COVID-19 Mental Health & Wellbeing study. *Br. J. Psychiatry* **2021**, *218*, 326–333. [\[CrossRef\]](#) [\[PubMed\]](#)
134. Niedzwiedz, C.L.; Green, M.J.; Benzeval, M.; Campbell, D.; Craig, P.; Demou, E.; Leyland, A.; Pearce, A.; Thomson, R.; Whitley, E.; et al. Mental health and health behaviors before and during the initial phase of the COVID-19 lockdown: Longitudinal analyses of the UK Household Longitudinal Study. *J. Epidemiol. Comm. Health* **2021**, *75*, 224–231. [\[CrossRef\]](#)
135. Chen, T.; Lucock, M. The mental health of university students during the COVID-19 pandemic: An online survey in the UK. *PLoS ONE* **2022**, *12*, e0262562. [\[CrossRef\]](#)
136. Morgül, E.; Kallitsoglou, A.; Essau, C.A. Psychological effects of the COVID-19 lockdown on children and families in the UK. *Rev. Psicol. Clínica Con Niños Adolesc.* **2020**, *7*, 42–48. [\[CrossRef\]](#)
137. Prasad, K.; McLoughlin, C.; Stillman, M.; Poplau, S.; Goelz, E.; Taylor, S.; Nankivil, N.; Brown, R.; Linzer, M.; Cappelucci, K.; et al. Prevalence and correlates of stress and burnout among U.S. healthcare workers during the COVID-19 pandemic: A national cross-sectional survey study. *EclinicalMedicine* **2021**, *35*, 100879. [\[CrossRef\]](#)
138. Czeisler, M.É.; Lane, R.I.; Petrosky, E.; Wiley, J.F.; Christensen, A.; Njai, R.; Weaver, M.D.; Robbins, R.; Facer-Childs, E.R.; Barger, L.K.; et al. Mental Health, Substance Use, and Suicidal Ideation during the COVID-19 Pandemic—United States, June 24–30, 2020. *MMWR Morb. Mortal. Wkly. Rep.* **2020**, *69*, 1049–1057. [\[CrossRef\]](#)
139. Czeisler, M.É.; Lane, R.I.; Wiley, J.F.; Czeisler, C.A.; Howard, M.E.; Rajaratnam, S.M.W. Follow-up Survey of US Adult Reports of Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic, September 2020. *JAMA Netw. Open* **2021**, *4*, e2037665. [\[CrossRef\]](#)
140. Vahia, I.V.; Jeste, D.V.; Reynolds, C.F. Older Adults and the Mental Health Effects of COVID-19. *JAMA* **2020**, *324*, 2253–2254. [\[CrossRef\]](#)
141. Dickey-Chasins, R.; Romm, K.F.; Vyas, A.N.; McDonnell, K.; Wang, Y.; Ma, Y.; Berg, C.J. Social distancing and related factors during the COVID-19 pandemic in relation to COVID-19 symptoms and diagnosis and mental health. *J. Pub. Health* **2022**, *7*, 1–11. [\[CrossRef\]](#)
142. Browning, M.H.; Larson, L.R.; Sharaievska, I.; Rigolon, A.; McAnirlin, O.; Mullenbach, L.; Cloutier, S.; Vu, T.M.; Thomsen, J.; Reigner, N.; et al. Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLoS ONE* **2021**, *16*, e0245327. [\[CrossRef\]](#) [\[PubMed\]](#)
143. López-Castro, T.; Brandt, L.; Anthonipillai, N.J.; Espinosa, A.; Melara, R. Experiences, impacts, and mental health functioning during a COVID-19 outbreak and lockdown: Data from a diverse New York City sample of college students. *PLoS ONE* **2021**, *16*, e0249768. [\[CrossRef\]](#)
144. Son, C.; Hegde, S.; Smith, A.; Wang, X.; Sasangohar, F. Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *J. Med. Internet Res.* **2020**, *22*, e21279. [\[CrossRef\]](#)
145. Hamm, M.E.; Brown, P.J.; Karp, J.F.; Lenard, E.; Cameron, F.; Dawdani, A.; Lavretsky, H.; Miller, J.P.; Mulsant, B.H.; Pham, V.T.; et al. Experiences of American Older Adults with Pre-existing Depression during the Beginnings of the COVID-19 Pandemic: A Multicity, Mixed-Methods Study. *Am. J. Geriatr. Psychiatry* **2020**, *28*, 924–932. [\[CrossRef\]](#) [\[PubMed\]](#)
146. Jow, S.; Doshi, S.; Desale, S.; Malmut, L. Mental Health Impact of COVID-19 Pandemic on Therapists at Inpatient Rehabilitation Facility. *PM&R* **2022**. [\[CrossRef\]](#)

147. Nikolaidis, A.; Paksarian, D.; Alexander, L.; Derosa, J.; Dunn, J.; Nielson, D.M.; Droney, I.; Kang, M.; Douka, I.; Bromet, E.; et al. The Coronavirus Health and Impact Survey (CRISIS) reveal reproducible correlates of pandemic-related mood states across the Atlantic. *Sci. Rep.* **2021**, *11*, 8139. [CrossRef]
148. Rahman, M.A.; Islam, S.M.S.; Tungpunkom, P.; Sultana, F.; Alif, S.M.; Banik, B.; Salehin, M.; Joseph, B.; Lam, L.; Watts, M.C.; et al. COVID-19: Factors associated with psychological distress, fear, and coping strategies among community members across 17 countries. *Glob. Health* **2021**, *17*, 117. [CrossRef]
149. van Mulukom, V.; Muzzulini, B.; Rutjens, B.T.; van Lissa, C.J.; Farias, M. The psychological impact of threat and lockdowns during the COVID-19 pandemic: Exacerbating factors and mitigating actions. *Transl. Behav. Med.* **2021**, *11*, 1318–1329. [CrossRef]
150. Worldometer, 2022: COVID-19 Coronavirus Pandemic. Available online: <https://www.worldometers.info/coronavirus/> (accessed on 5 June 2022).
151. Htay, M.N.N.; Marzo, R.R.; AlRifai, A.; Kamberi, F.; El-Abasiri, R.A.; Nyamache, J.M.; Hlaing, H.A.; Hassanein, M.; Moe, S.; Su, T.T.; et al. Immediate impact of COVID-19 on mental health and its associated factors among healthcare workers: A global perspective across 31 countries. *J. Glob. Health* **2020**, *10*, 020381. [CrossRef]
152. Luo, M.; Guo, L.; Yu, M.; Jiang, W.; Wang, H. The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public—A systematic review and meta-analysis. *Psychiatry Res.* **2020**, *291*, 113190. [CrossRef]
153. Organization for Economic Cooperation and Development (OECD). *Supporting Young People's Mental Health through the COVID-19 Crisis*; OECD: Paris, France, 2021. Available online: <https://www.oecd.org/coronavirus/policy-responses/supporting-young-people-s-mental-health-through-the-covid-19-crisis-84e143e5/> (accessed on 15 November 2021).
154. Organization for Economic Cooperation and Development (OECD). *COVID-19 Emergency Government Support and Ensuring a Level Playing Field on the Road to Recovery*; OECD: Paris, France, 2021. Available online: <https://www.oecd.org/coronavirus/policy-responses/covid-19-emergency-government-support-and-ensuring-a-level-playing-field-on-the-road-to-recovery-1e5a04de/> (accessed on 15 November 2021).