

# A Research on SARS-COVID-19 and Mental Health

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## ABSTRACT

Our study summarizes the main abstraction of SARS-COVID-19 that emerges from the Wuhan China the main point of transmission from one person to another person. The people are worried about their future vaccine distort, unavailability of vaccines. The coronavirus disorder (COVID-19) pandemic has impacted the economy, livelihood, and bodily and intellectual wellness of humans worldwide. The Coronavirus Disease 2019 (COVID-19) pandemic has amazed fitness government round the arena, generating an international fitness crisis. The Coronavirus disorder 2019 (COVID-19) pandemic is causing extraordinary risks to intellectual fitness globally. This systematic assessment goals to synthesize extant literature that reviews at the consequences of COVID-19 on mental effects of the overall populace and its related danger elements consequently, many people are stricken by accelerated anxiety, anger, confusion, and post-traumatic signs it is meant to pose an intellectual fitness chance of wonderful significance globally. The COVID 19 is mentally disturbing the life of health care workers that saves our lives that spends whole time in hospitals to saves our lives.

**Keywords:** SARS-COVID-2; Mental health; Depression; Death rate; Anxiety

## INTRODUCTION

Since the main instance of a new respiratory illness of overflowing COVID (Coronavirus) recognized in Wuhan, China, an increase in the certificate of the anatomy of Coronavirus was based in Beijing [1]. The World Health Organization (WHO) had pronounced a pandemic of Coronavirus, surpassing 180,000 detailed cases till date. COVID-19 is a new COVID that may be likely to come out of a source of an extensive creature, most probably the bat [2]. Coronavirus pandemic began in December 2019 and spread around the world with more than 1,000,000 infected people [3]. Past assessments have shown that by a wide margin that the patients with COVID had a substance set apart by the opening at Wuhan's Espace. These patients had clinical signs, including fever and hack [4].

WHO had expressed that there was a strong danger of coronavirus crowning at different nations throughout the planet followed by announcement of a Public Health Emergency of International Concern (PHEIC) later on. By the end of 2019, Wuhan a shopping center of China on the appearing business center has met a taking off another Coronavirus who had killed in excess of eighteen individuals more than 70,000 inside the fifty first days of the plague [5-6]. On 24 Walk 2020, the United Kingdom (UK) presented a proposed "locking" limitations to moderate the propagation of first

wave of corona virus. The resulting evidence demonstrated that pandemic coronavirus is linked to inimical psychological well-being for medical service workers of China. Although the initially affirmed instance of the Roman COVID Coronavirus Infection was recorded on January 30, 2020, the British Government has fallen for some laboratory time affirmed in Great Britain at 11,080 prior to the lockdown of March 24. [7]. Italy was clearly the most dependable Western country affected by COVID-19 ailment, despite the path that there are a couple of shortcomings about this issue [8]. Most cases of coronaviruses have sweet indications, but the elderly and comorbidities are higher than an intense extreme respiratory disease [9]. The fundamental transmission modes relates to hacks respiratory pearls, sniffing and speech on mucosal layers. Contact to a polluted surfaces followed by mucosal movies can add to the transmission [10]. With the concern of possibly having the disease, changes in daily practice, weight on species and dread for family members, numerous individuals affirm troubles in their prosperity [11].

The SARS-COVID-2 epidemic infection actually erased throughout the planet [12]. People who were inclined to mental problems have particularly helpless, another major trauma in such a hustle and bustle of PHEIC [13]. Pandemic coronavirus tests the financial and well-being frameworks in the world and embodies the level of global interdependencies and needs for preparation for the

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dangers of global well-being [14]. The Coronavirus Disease 2019 (COVID-19) pandemic has led to rapid, unprecedented changes to the lives of billions of children and adolescents [15]. Symptoms of depression and anxiety have been visible in provinces of China [16]. Coronavirus sickness (COVID) infection (COVID) has raised quickly, prompting an augmentation for demoralization, anxiety, reduction and so forth [17]. Young people are one of the remarkable survivors of limited isolation techniques of limited isolation, agreed against various psychological well-being problems [18]. Pandemic coronaviruses closed the shopping malls, marketing centers and schools throughout the planet, conducting educational systems and subcultures to quickly strive for learning, especially in under-developed and developing countries [19]. People from each and every field of life were not only limited to homes but a mental lockdown was implemented to save life from threats of hidden paws of death. In such a congested atmosphere humanity had to face mental fluctuations and self-imprisoning leading to an unusual mental stress.

Observing and oversight of the populace emotional wellness during such emergencies of international concerns, for example, a pandemic is a quick need. Our study is projected on this mental health during pandemic of COVID. The focus of this investigation is to examine the current predominance of stress, nervousness and frustrations in everybody during the Coronavirus pandemic. There is negligible information about the effect of enormous scope plagues on local area psychological well-being, especially during the intense stage. This whole information implies we are fundamentally unprepared to help networks as they face the remarkable Coronavirus pandemic. Human catastrophes come in all shapes and sizes including wars, fear monger viciousness, regular occasions, monetary downturns and miseries just as contamination. As an animal types more delicate than we frequently permit, people would be relied upon to antagonistically respond to these sorts of debacles as far as mental infirmity and conceivably self-destructive conduct prompting expanded requests on the Psychological well-being services Stress-related mental conditions including mind-set and substance use issues are related with self-destructive conduct. Coronavirus survivors may likewise be at raised self-destruction hazard. This assessment intended to give data critically expected to enlighten government procedure and resources, now and in other future crises..

## MATERIALS AND METHODS

We selected total 169 articles e.g. from Cambridge, from Eurosurveillance, Hogrefe, Online Library, Open Research, WHO, Rapid Review, Plos, Oup, Nature, jmir, SagaPub, Preprint, Health Affairs, Papers SSRN, Medrix Web Science, Tanfooline, Elsevier, mdpi, Oxford academic, lancet, Plos, ACS, Taylorfrancisonline, American Journal of Psychiatry, Europe, Pnas, Bmj World Psychiatry, Ajem and Jamen Network from different scientific journals A guide seek on Google Scholar became executed to pick out extra applicable studies. Articles had been decided on primarily based totally at the predetermined eligibility criteria Since December 2019 to April 2021 to visualize the actual picture of mental health, Published articles concerning mental health related to the COVID-19 outbreak depression and anxiety raised from an uncertain spread and three waves of corona virus.

## Basic type of Coronavirus

Ridiculous Limit Respiratory Condition COVID- 2 (SARS-CoV-2) is an actually arising, especially irresistible, and pathogenic COVID in humans [20]. The RNA-subordinate RNA polymerase (RdRp), moreover named (nsp12) is the focal piece of crown viral replication and record mechanical social event, and it delivers an impression of being a fundamental target for the antiviral medicine remdesivir [21]. A homo-trimer plan of Coronavirus spike glycoprotein in both shut (without ligand) and. The actual constancy (linking with limit) that is united with cell adherence [22]. Coronavirus HOLED A unique abandoned RNA (positive sense) related to a nucleoprotein within a capsid includes a consortium protein [23].

## Working parts of Coronavirus

Several patients with SARS-CoV-2 contamination have odd liver function [24]. Liver injury requires sweeping work-up and relentless perception and can be multifactorial and heterogeneous in nature [25]. It isn't frightening to experience patients with Coronavirus with bizarre liver cutoff, either as hepatitis, cholestasis, or both [26]. SARS-CoV unmistakably assault liver tissues and cause liver damage [27]. Liver impediment has been addressed in up to 60% of patients with SARS-3 and has in like way been addressed in patients ruined with MERS-CoV [28].

## Clinical symptoms

Initially the patients were revealed with clinical symptoms of flu-like feature along with a dried cough, aching throat, lofty fever, and respite complication. [29]. The vast majority with COVID-19 has a gentle and extreme disease, e.g. COVID-19 pneumonia [30]. Use of facial and eye pathways was also observed [31]. The more the established age, presence of sweet diabetes, hypertension and corpulence fundamentally expands the danger of hospitalization and the procurement of coronavirus patients [32]. Absurd uncommon respiratory issue COVID 2 (SARS-CoV-2), has become a generally steady pandemic [33]. Because of the shortfall of fever and respiratory signs, such patients with Coronavirus may excuse or be unmindful of their affliction [34]. China, the causative expert of COVID, tracked down numerous clinical side effects with raised odds of transmission, hypertension fever, hack, and exhaustion [35], shown in Figure 1. The loss of smell and taste was observed with positive test result [36].

There are different symptoms that appear in the patients. As shown in in Figure 1: 63.1% cough, 20% diabetes 15% cardiovascular tainting, 15% hypertension, 76% hack, 44% depletion, 12.9% diarrhea, 78.6% appetite, 10.2% vomiting, 4.4% abdominal pain, 15.4% headache, 35% of shortness of breathing, 10.9% shivering, 33% soreness, 35.7% tightness, 29.9% dyspnea, 45.4% weakness. A negative mental health impact from pandemic percentage that feel street or worry due to COVID 19. A total of 18- 29 age of woman with 69%, men with 54% 30-49 age woman has 61%, men with 40% 50-64 age woman with 54%, men's with 32% 65+ age woman's have 36%, men with 37% stress appear. Appearance of symptoms age wise in which 0-17 years old patients have 46% 18-44 years old have 4%, 45-64 years old have 25%, 65-74 years old patients have 25% symptoms. Higher rate of anxiety and disorder with 41% then anxiety with 35.8% and depression with least 28% in peoples seen. Highest ratio have been observed with clinical symptom of fever and diarrhea, vomiting, abdominal pain and

shivering have been minor symptoms in some ratio of effected people per data of Figure 1. Clinical symptoms have been recorded in almost all age groups shown in Figure 2. Major victims were found elderly people.

**Mode of transmission**

Albeit the rise of new COVID illnesses, much likely to begin from bats in China, had been anticipated w.r.t its transmission in Walk 2019 [37]. The infection has been a transcendently transmitted through airborne and mouth drops [38]. A few examinations have recommended that environmental change might have been added to a few irresistible crisis and spread illnesses, including SARS and Coronavirus shown in Figure 3 [39]. It has been affirmed that Coronavirus is communicated essentially through respiratory beads and direct contact. Showers are another conceivable transmission course that requires consideration [40]. Huanan Seafood Wholesale of Wuhan have been reported with transmission through hack, wheezing and spreading drops of Respiratory sprinkles [41]. Contact with respiratory emissions from tainted people with infections is known to be the principle transmission highway [42].

**Precautionary measures**

There are numerous things and ways for which Coronavirus spread. To quit diminishing the Coronavirus impact, there are a few things to stop the Coronavirus by spreading given by the World Health Organization (WHO). By following these strategies, we can save our day to day routines and furthermore to different lives. But one

the other hand a serious trauma have been faced on individual level by humanity during this atmosphere of fear. Some of major precautionary strategies and their impacts on mental health are discussed below:

**Social Distancing:** Social distance is perhaps the most prescribed strategies all throughout the planet to lessen the danger of dissemination during the COVID 19[43]. Social separating can defer the proliferation of Coronavirus, it is revealed that the infectious virus can travel to capture a victim up to a defined limit of approach [44] accepting that social defined measure people can considerably lessen the chances of infection [45]. These included preclusions for huge get-togethers; school terminations; terminations of diversion scenes, exercise centers, bars and café dinners; and asylum orders at place [46]. The strategy of extraordinary social separating can lessen plague proliferation [47].

The SARS-COV-2 pandemic is changing almost the all services especially medical services assets all throughout the planet, which caused social removing measures to decrease the force of transmission [48-49].

**Consequences of social distancing on mental stability:** Social distancing conduct could be related to better signs cross-sectional, above and beyond adaptive consequences of social help and social community size. Stay-at-domestic fame and private distancing conduct had been each appreciably and -independently related to intellectual fitness signs. Personal distancing conduct related to better depression, GAD signs, -intrusive thoughts, and acute stress, however now no longer with -insomnia. In sum, each

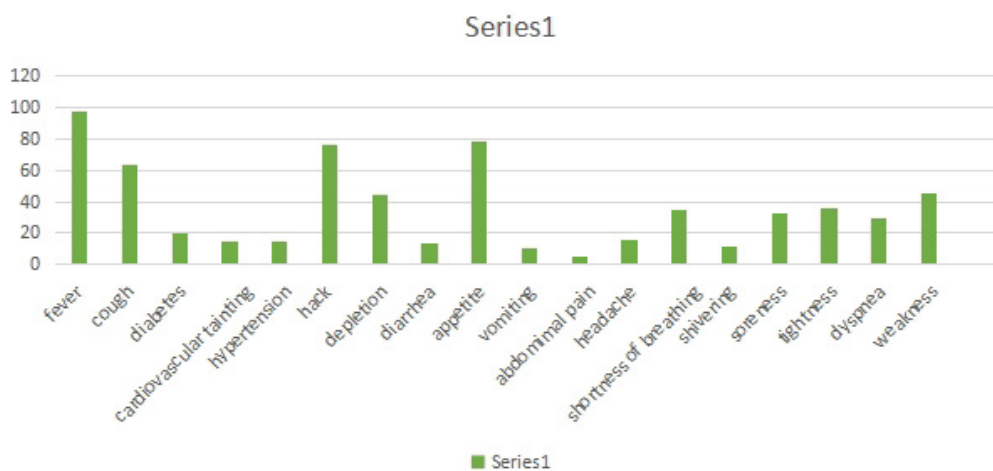


Figure 1: Ratio of multiple clinical symptoms of COVID-19 from 2019 to 2021.

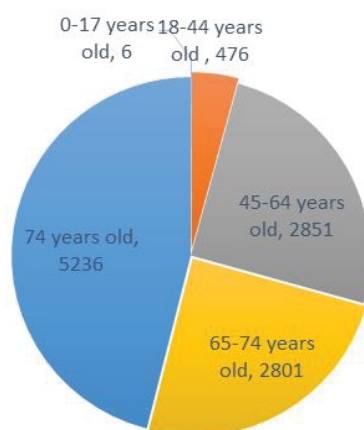


Figure 2: Clinical symptoms in all age groups.

measures of social distancing (stay-at-domestic fame and distancing conduct) had been associated -independently with concurrent symptom [50]. The COVID-19 pandemic and social-distancing and stay-at-domestic orders can at once have an effect on intellectual fitness and exceptional of life [51]. So-called “social distancing” and measures of hygiene have established to be powerful reactions to the risk of growing numbers of COVID-19 instances and fatalities [52]. The destructive situations triggered through the consequences of the pandemic in addition to the social distancing measures threaten effective self-critiques most of the whole populace of the sector in a couple of ways, consisting of the disruption of esteem-helping relationships (e.g., with co-workers, teachers, friends, neighbors).

In phrases of social relatedness, the social distancing measures are severely disrupting social ties and one’s cap potential to get right of entry to now no longer handiest his her prolonged community, however with own circle of relatives participants as well. Indeed, loneliness and associated intellectual fitness affects are a completely not unusual place final results of social distancing measures. For example, observed that loneliness turned into suggested in 38•5% (95% CI 35•5–41•5) [53]. However, more youthful human beings are greater susceptible to intellectual fitness troubles because of social distancing measures in contrast to adults and there are already reviews of young people experiencing loneliness all through COVID-19 lockdowns with the hyperlink among loneliness and terrible intellectual fitness being well-established [54]. Using solace cross sectional offenders had been searched out to complete a web-managed view to come across the outcome of social distancing on isolation, tension and observable substitute. The analytic pattern consisted of 833 responses of people elderly 60 and older Results. A massive element suggested being stressed (36%), and/or being lonely (42.5%). Nearly 1/three said that their feel of loneliness expanded all through the time of social distancing. Social distancing has enormous effects on loneliness and fitness behaviors amongst

adults with inside the United States, a lot of which vary through age group. Americans with 23% are more likely than people in other countries like United Kingdom 26%, Sweden 18%, Norway 10% New Zealand 23%, Netherlands 14%, France 24%, Canada 26%, and Australia 23% to report mental health concerns. Percent of adults as shown in below Figure 4 who reported experiencing stress anxiety or greater sadness that was difficult to cope with alone since the Outbreak started.

### Wearing safety mask

Coronavirus(s) best test for national health frameworks for a century [55], have declared that any kind of cover will have its own capacity to capture particles of various Sizes [56].

During COVID 2019 illness (Coronavirus), the utilization of facial veils has gotten omnipresent in China and other Asian nations like South Korea and Japan [57], following up the diminish of the danger of transmission[58]. The US have recommended that, along with contaminated individuals and wellbeing laborers, solid individuals "should utilize a texture of face cover when needed to go out openly [59], when they found that covers are helpful concerning the counteraction of illnesses in solid individuals and forestall asymptomatic transmission[60]. The usage of the order facial cloak without trying to hide is It accomplices with a decreasing in the consistently improvement speed of COVID at 0.9, 1.1, 1.4, 1.7 and 2.0 rate focuses in 1-5, 6-10, 11-15, 16-20, and at least 21 days after Sign the sets of the state face cover [61].

### Psychological effects

Coronavirus has caused ruin in the existences of individuals all throughout the planet [62,63]. Stay at home is thought to be the fundamental method to limit the receptiveness of people to the contamination [64]. Even staying at home have decreased the flow rate by countless folds, particularly for the infections for which



Figure 3: Symptoms of COVID-19.

neighborhood spread has effectively happened in previous history [65]. The defenders accepted the request and diminished the contacts of the individual to individual and, thusly, the spread of the pandemic is decreased [66], during peak hours of pandemic and some were imposed to stay at home [67-68], disrupting almost the all enthusiastic and social activities. The pandemic of COVID disease 2019 (coronavirus) has resulted in a difficult rental in China to reduce the disease rate [69,70]. The pandemic has arisen as an uncommon mental crisis throughout the planet [71], with a perspective on the infirmity and lower responsibility [72]. Anxiety and depression in men's and women's as shown in Figure 5 below.

**Impacts of Coronavirus in mental health**

The mental responses of the population of an irresistible sickness, was a tremendous cause of spread of social issue during and after the flare-up. [73]. The COVID (Coronavirus) pandemic summed up the concern of dread and stress among almost all age groups, throughout the planet, largely a trademark and common reactions

to the changing and uncertain conditions shown in Figure 6 [74,75].

**COVID-19 and China**

As of March 24, 2020, more than 80 000 individuals with COVID-19, and 690 000 individuals who have come into close contact with individuals with COVID-19 have been registered and quarantined, including a large number of children (National Health Commission of the People's Republic of China Update on the epidemic situation of the new coronavirus pneumonia as of 24:00.) The majority of participants (53.3%) did not feel helpless due to the pandemic. On the other hand, 52.1% of participants felt horrified and apprehensive due to the pandemic. Additionally, the majority of participants (57.8-77.9%) received increased support from friends and family members, increased shared feeling and caring with family members and others. In conclusion, the COVID-19 pandemic was associated with mild stressful impact even though the COVID-19 pandemic is still ongoing. These findings would need to be verified in larger population [76].

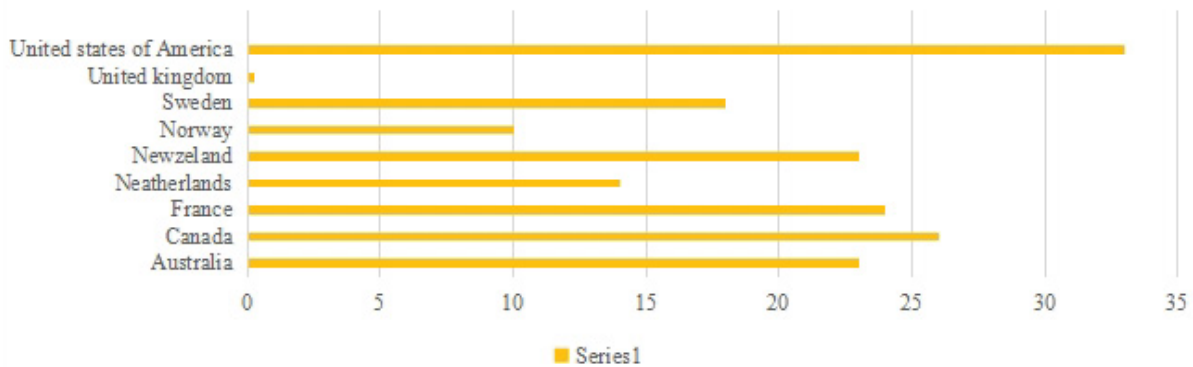


Figure 4: Percent of adults experiencing stress, anxiety or great sadness.

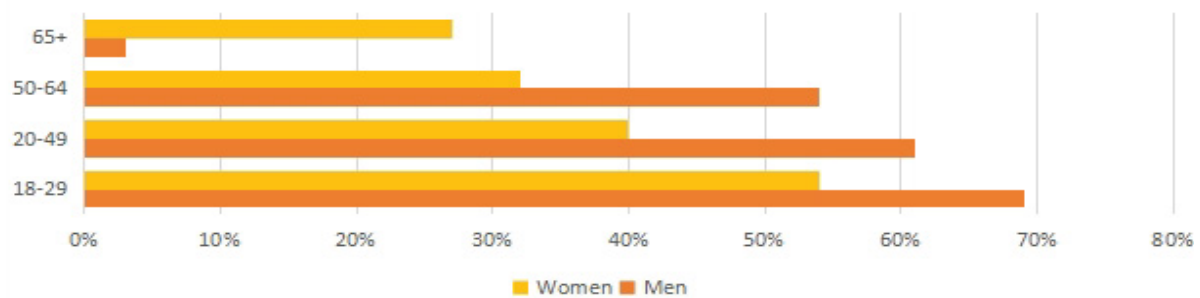


Figure 5: Men's and woman who feel worry or stress related to COVID-19.

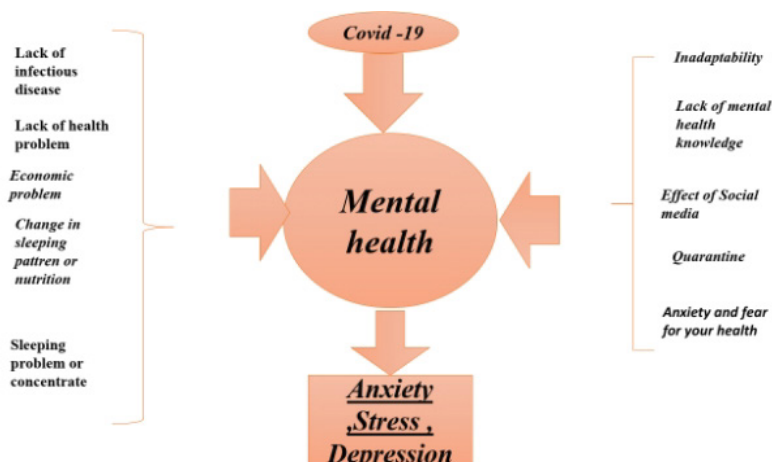


Figure 6: Impacts on mental health caused by COVID -19.

### COVID -19 and America

Mental issues are assessed to influence 20-25% of the grown-up populace (450 million universally, 47 million in US) and their occurrence is probably going to have expanded during the pandemic, because of an assortment of factors. The survey led on Walk 25–30, 2020 revealed 72% of Americans communicating that their lives were disturbed "a great deal" or "a few" by the Coronavirus flare-up. This is a 32% increment from the survey led fourteen days sooner. While 57% of the grown-ups communicated worries over being presented to COVID while they were grinding away, 53% were stressed that they or somebody in their family would be wiped out from COVID. About 59% stressed that their ventures would be contrarily affected by COVID for quite a while. While 52% stressed that the financial slump due to COVID would make them lose their positions, 45% stressed that they would lose pay because of working environment conclusion or decreased work hours. About 74% were concerned that the most exceedingly terrible from the episode was on the way. The above discoveries are straightforwardly identified with the sharp expansion in Coronavirus cases and Coronavirus 19 related passing's in US during similar period as shown in Figure 7. This proposes that the Coronavirus pandemic and its impact on the economy in US may prompt an expansion in psychological well-being sickness in the country [77]. To evaluate psychological well-being, substance use, and self-destructive ideation during the pandemic, agent board overviews were led among grown-ups aged ≥ 18 years across the US during June 24–30, 2020. By and large, 40.9% of respondents announced in any event one unfriendly mental or conduct ailment, including manifestations of uneasiness problem or burdensome issue (30.9%), side effects of an injury and stressor-related turmoil (TSRD) identified with the pandemic (26.3%), and having begun or expanded substance use to adapt to pressure or feelings identified with Coronavirus (13.3%) [78].

### COVID-19 and Germany

In Germany, expanded side effects of summed up uneasiness (44.9%) and misery (14.3%), trouble (65.2%), and Coronavirus related dread (59%) were exceptionally pervasive [79]. various relapse investigation uncovered that not being a parent, having no roundabout social reach a couple of times each week, higher saw pressure, higher experienced forlornness, lower social help, and lower self-viability essentially anticipated higher scores of burdensome manifestations. Different parts of way of life like social and social exercises, dating, and interests were accounted for to be adversely influenced during the pandemic [80]. During that time in Germany, when the Coronavirus episode acquired

energy with a flood in cases and passing rates just as a lockdown of the public life. Summed up tension (Stray 7), melancholy (PHQ-2), (trouble thermometer) and Coronavirus explicit things, particularly Coronavirus related dread, were evaluated in solid people, patients experiencing psychological instabilities, and in patients with persistent substantial sicknesses, known to be in danger for a horrible course of Coronavirus. Results show that the Coronavirus pandemic essentially demolishes psychometric scores all through the populace – people with as of now increased levels, similar to individuals with psychological instabilities presently reach concerning levels [81].

### COVID-19 and Canada

In Canada, emotional well-being deteriorating has been accounted for by over half of respondents inspected from everyone. Studies from around the world are announcing higher-than-common point-gauge predominance of indications reminiscent of moderate to serious discouragement (18.1% to 46.3%) and tension problems (11.4% to 45.1%). Furthermore, 23% of Canadians supported devouring more liquor, tobacco, and cannabis during the pandemic.

A few segment and financial danger factors for raised burdensome and uneasiness manifestations during the pandemic have been distinguished in everyone. Having a prior history of mental problem was additionally connected with more terrible side effects of nervousness, misery, self-destructive ideation, and unsafe drinking during the pandemic [82]. The pace of crumbling was variable across different age gatherings and prior mental analytic gatherings: sorrow 37–56%, uneasiness 31–half, touchiness 40–66%, consideration 40–56%, hyperactivity 23–56%, fixations/impulses 13–30% [83]. Generally, Canadian populaces are encountering a decay in emotional wellness and adapting because of the pandemic. The individuals who experience wellbeing, social, or potentially primary weaknesses because of prior psychological wellness conditions, inability, pay, identity, sexuality, and additionally sex are bound to underwrite emotional well-being crumbling, testing feelings, and challenges coping [84].

### COVID-19 and Italy

The Coronavirus pandemic and government forced social limitations like lockdown presented most people to a remarkable pressure, expanding psychological wellness problems worldwide [85]. An online overview spread all through the web between Spring 27th and April sixth 2020. 18147 people finished the survey, 79.6% ladies. Chosen results were post-awful pressure manifestations (PTSS), despondency, nervousness, sleep deprivation, seen pressure and change issue indications (Advertisements). Apparently disconnected calculated relapse examination was performed to distinguish Coronavirus related danger factors. Results Respondents embracing PTSS, gloom, nervousness, sleep deprivation, high saw pressure and change problem were 6604 (37%), 3084 (17.3%), 3700 (20.8%), 1301 (7.3%), 3895 (21.8%) and 4092 (22.9%), respectively [86]. a few examinations detailed a more prominent predominance of burdensome and nervousness indications in the Italian overall public during the lockdown contrasted with before the pandemic [87]. As a matter of fact, numerous individuals confronted Coronavirus in their families, seeing the infection in companions, guardians, and other close family members. A considerable lot of them left homes to arrive

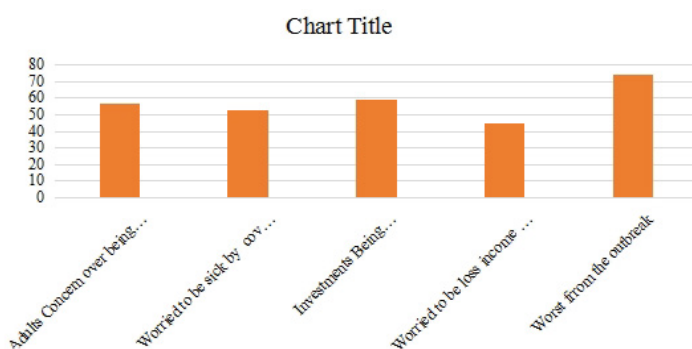


Figure 7: COVID -19 impacts on people with pre-existing mental health survey led in 2020 in United States of America.

at emergency clinics, and, unfortunately, many didn't return home. Thus, numerous individuals battled with melancholy and loss of close family members. Thirdly, the conclusion of plants, workplaces, shops, cafés and bars, recreation and game offices, left numerous individuals at home without a task. The net outcome is an overall financial emergency that is required to deteriorate before long, prompting an agonizing decrease of GDP and joblessness. Every one of these elements, both autonomously and pooled together, will definitely bring to an increment in pressure related and burdensome issues, which will shift as per numerous factors and still can't seem to be quantified [88].

### COVID-19 and Spain

Amidst the Coronavirus plague, Spain was one of the nations with the most elevated number of diseases and a high death rate. The danger of the infection and results of the pandemic perceivably affect the emotional wellness of residents [89]. The pandemic has set off a social, monetary and wellbeing emergency that significantly affects our emotional well-being, with a few examinations zeroing in on evaluating its outcomes. When all is said in done, most exploration focuses to the development of manifestations of tension, discouragement, rest issues and post-horrible pressure problem (PTSD) in a critical level of the population. Results showed that ladies and youthful announced higher nervousness, sadness, struggle among work and family relationship, good faith, and extraversion. Men announced higher enthusiastic security. The factors thought about anticipated a generous level of change on tension (36%), sorrow (38%) and life fulfillment (19%), with a huge relative commitment of character characteristics. Individuals with more unfortunate mental wellbeing likewise showed more clash among work and family connections. Working at office was more identified with nervousness while working at home was more identified with depression [90]. Indicative scores of uneasiness, wretchedness, stress were seen in 32.4%, 44.1% and 37.0% of respondents, individually. Likewise, suggestive scores demonstrating mental pressure were found in 88.6% of respondents. Expanded predominance of nervousness, discouragement and stress manifestations was related with female sex, more youthful age, self-revealed Coronavirus indications, past mental or mental treatment, admission of psychoactive medicine and pessimistic impact on friendly connections and associations with individuals living in the equivalent place [91].

### COVID-19 and India

The Coronavirus flare-up made a significant frenzy among every one of the residents of the nation inferable from its seriousness, infectiousness inside the local area, absence of explicit treatment and probability of re-disease. Every one of these elements alongside the questionable conduct of the infection lead to condition of dread and concern all throughout the country [92]. An aggregate of 891 individuals reacted from 11 unique states the nation over and larger part (90%) of them was from five South Indian states. We noticed the pervasiveness of 22% of sadness, with 15% uneasiness and 27.5% with both of them. Youthful age, widow/unmarried conjugal status, moderate degree of schooling, understudies, non-working status during lockdown, previous history of mental sicknesses, presence of actual manifestations identified with Coronavirus, hypochondriacally considerations, dread of pollution, social virus, were discovered to be fundamentally related

( $p < 0.05$ ) concerning presence and additionally seriousness of sadness and anxiety [93]. Exacting lockdown laws, social removing, and limitations in development could bring about expanded screen time. Consistent deception in web-based media entrances may bring about a condition of frenzy and tension, frequently bringing about misery eventually. The commonness of gloom, nervousness and stress were 18.56%, 25.66%, and 21.99% individually including higher number of members with gentle sorrow (15.1%) and stress (14.5%) and moderate tension (16.3%). Female sex, age <25 years, joblessness, self-business, utilized in private area, absence of formal schooling, bigger family size, parenthood (>2 kids) were related with improved probability of negative emotional well-being. Trust in physician's capacity to analyze Coronavirus contamination, diminished self-saw probability of contracting Coronavirus, lesser recurrence of checking for data on Coronavirus and fulfillment of data got were defensive against negative mental health [94].

### COVID-19 and Saudi Arabia

The serious intense respiratory condition COVID 2 (SARS-CoV-2) is an arising contamination causing a broadly spread pandemic of COVID illness 2019 (Coronavirus). The current Coronavirus 2019 pandemic is provoking apprehension of falling wiped out, passing on, powerlessness and shame, earnest and opportune comprehension of psychological well-being status is expected to help the community [95]. The greater part of them had burdensome turmoil (55.2%), which went from gentle (24.9%), moderate (14.5%), and decently serious (10%) to extreme (5.8%). A big part of the example had summed up uneasiness problem (51.4%), which went from gentle (25.1%) and moderate (11%) to serious (15.3%) [96]. Tension and misery were more normal among wedded members with low pay. There is a wide scope of Saudi occupants who are at a higher danger of dysfunctional behavior during the Coronavirus pandemic [97].

### COVID-19 and Japan

The general predominance of nervousness side effects, burdensome manifestations, and helpless rest quality were 35.1%, 20.1%, and 18.2%, individually. Individuals matured < 35 years announced a higher commonness of uneasiness manifestations and burdensome side effects than individuals matured  $\geq$  35 years [98]. Japanese pregnant ladies had higher dread of Coronavirus scores than Japanese ripeness patients. Also, dread of Coronavirus among pregnant ladies in Japan was emphatically connected with storing and wellbeing observing, and an accentuation on sites and informal communication destinations among pregnant ladies was related with lower dread of Coronavirus. Pregnant ladies in Japan have undeniable degrees of nervousness, and sites and informal communication destinations might be viable in easing their anxiety [99]. The COVID infection 2019 (Coronavirus) has seriously affected the existences of youngsters and teenagers. School conclusion, one of the basic changes during the principal Coronavirus wave, caused diminishes in friendly contacts and expansions in family an ideal opportunity for kids and teenagers. This can have both positive and negative effects on self-destruction, which is one of the hearty psychological wellness outcomes [100].

### COVID-19 and Pakistan

Pakistan, like many other countries, has asked its citizens to practice social distancing in order to combat the spread of COVID-19. Educational institutions have been closed, exams have been

postponed, shopping malls, restaurants, and all areas of public gathering are under a strict lockdown. The rapid rise in the number of infected cases and deaths, disruption of daily routines, home confinement, fear of infection, social distancing from peers and friends, and lack of access to educational resources have created a feeling of uncertainty and anxiety among the children and the adolescents.<sup>4</sup> Disease containment measures though necessary, can adversely affect child & families' well-being due to various reasons. Unfortunately, social distancing measures can result in social isolation in an abusive home, with abuse likely to be exacerbated during this time of financial/social instability, fear of infection, boredom, and frustration. Ignoring the immediate and long-term psychological effects of COVID-19 Pandemic would be disastrous, especially for children and young people, who account for almost 50% of population in Pakistan. Interventions need to focus on nurturing resilience in children and adolescents by better communication to address their fears and concerns, encouraging routines and physical activities, and taking measures to alleviate loneliness. Parents need to look after their own mental health, coping strategies, and model positive psychological attitude in order to support children and adolescents to get through this difficult time [101]. Different countries with fear of COVID-19, Anxiety Depression and Distress percentage as shown below in Figure 8.

**Health laborers mental health**

Laborers are frequently needed to work in very inconvenient conditions and may have a higher risk of experiencing mental health issues [102], especially in Wuhan with a serious uneasiness, burdensome indications, a sleeping disorder [103,104]. Working In spite of the infection can adversely affect laborers, their families. It can likewise prompt low quality of work, relational struggles and blunders and mishaps at work [105]. Because of the exceptionally infectious Coronavirus, clinical consideration laborers need to cut direct contact with others, and invest energy solely after work [106]. There are 1.2 million clinical considerations of laborers in the USA, among which 20% are more than 55 years. Likewise, in the emergency clinic setting, there were 2 million enlisted medical caretakers, with 22% more than 55 and from the 1.2 million enrolled attendants utilized external the medical clinic, 29% is more than 55 [107].

**Effect of isolate time in psychological health**

A crucial measure was breaking a chain of infection [108]. Those who had been isolated have been reported with a high

pervasiveness of indications of mental pain and disorder [109]. Due to the COVID pandemic, an extraordinary number of people in general is as of now affected by segregate or separation. These activities influenced emotional wellness [110]. Isolation measures during Coronavirus pandemic are related with expanded danger of encountering psychological wellness burden [111]. Grown-ups living in Brazil (n = 360, 37.9 years old, 68.9% female) were studied toward the beginning of isolate and multi month later. Results of surveys included apparent pressure, state tension and depression [112], dissatisfaction, forlornness, and stresses over what's to come are normal responses and address notable danger factors for a few mental issues, including uneasiness, full of feeling, and post-horrendous pressure disorders [113].

**Impacts on medical department**

Medical care workers are at the forefront of the fight against SARS-COV-2 [114], possibly in outcome of their comfort [115], reported with as pressure - sensation, horrible nervousness and nodes buzzing [116].

Frequent mortality rates have caused mental problem among medical health workers [117,118]. Study showed that even relatively highly resilient nurses experienced some degree of mental distress, including PTSD symptoms and perceived stress. Our findings highlight the importance of helping nurses cultivate resilience and reduce stress [119,120].

**Loos of esteemed ones**

People who encountered the development of emotional well-being, troubled as a component of being determined to have COVID, or losing loved ones and family to the affliction, or the psychological effects of deferred social distancing [121-130]. For some, there, straightforwardly, is the deficiency of relatives (with those misfortunes much of the time occurring in habits killed from family contact that are in this time extraordinary), have been a cause of different sentiments identified with such potential losses [131].

Coronavirus has disturbed everyday life and significantly expanded vulnerability about the future for some families. Given that there is some proof that capriciousness in early life comprises a huge wellspring of stress that may add to disturbed neurodevelopment and hazard for psychopathology [132]. Individuals can be unfortunate about getting sick and passing on, losing live. People with test positive for COVID-19, showed a real anxiety, parcel

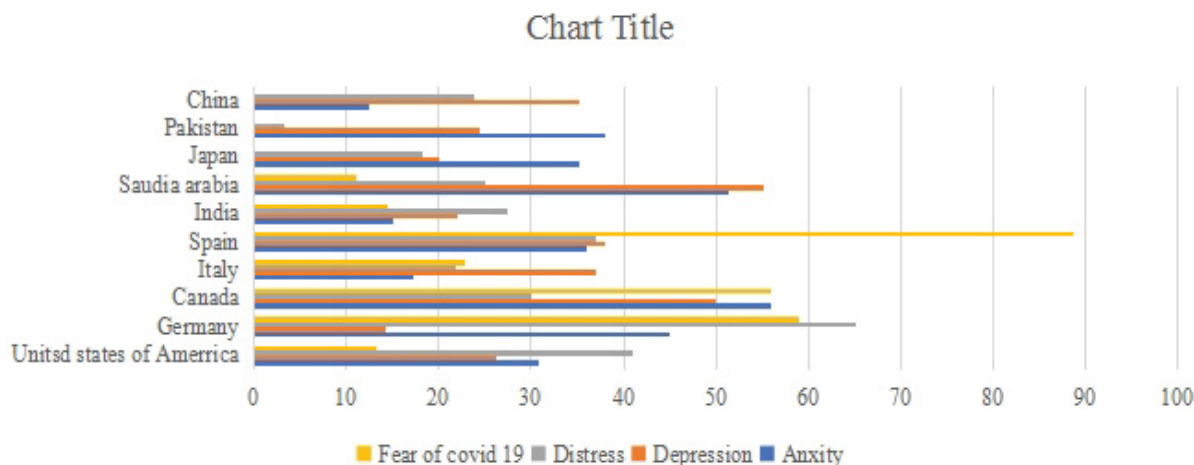


Figure 8: Different countries mental disorders observed in COVID-19.



from loved ones, separation, and conceivably disgrace. Numerous individuals on the planet are experiencing loss of livelihoods and openings. The individuals who have friends and family influenced by COVID-19 are confronting stress and separation [133].

### Impact on people

People who expanded their liquor utilization during the lockdown because they have to bound to higher taught, more oftentimes and in higher quantities [134]. In addition, mental pain expanded medication and liquor use, just as vocation turnover intentions during first wave [135]. There was a bigger self-announced expansion in liquor utilization for females than guys, with having a kid caring jobs. For guys, then again, it was a deficiency of work or a decrease in working hours caused expansion in liquor consumption [136]. During the pandemic worsen wellbeing concerns and hazard regarding behaviors have been observed [137]. Many guardians stated about the miss-conduct of from the pandemic, including hopelessness, debilitate and deserted [138], attack of enthusiastic vulnerability, safeguarding infection and demise [139].

High danger conduct like sharing of cigarettes, liquor and needles between peers builds the opportunity of for a boost of outbreak [140]. A huge expansion in discouragement adapting intentions and declines in friendly, upgrade, and similarity motives have been observed [141]. Substances of interest have been alcohol, cigarettes, cannabis, e-cigarettes, energizers, and opiates, as these are represented to be the most routinely used and mistreated substances [142].

The Coronavirus emergency may expand self-destruction rates during and after the pandemic. An ascent in self destruction passing in the wake of the pandemic isn't inevitable [143]. The COVID-19 pandemic influences hazard and protective elements for self-destruction at each level of the socio-ecological model [144]. Stress-related mental conditions including state of mind and substance use problems are related with self-destructive conduct. Coronavirus survivors may likewise be at raised self-destruction hazard. The Coronavirus emergency may build self-destruction rates during and after the pandemic [145]. Monthly self-destruction rates in Japan expanded by 16% during the subsequent wave (July to October 2020), with a bigger increment among females (37%) and youngsters and youths (49%) [146].

### Significance of COVID-19 Vaccine

A first precept worries minimizing damage and maximizing benefit: a powerful vaccine must lessen deaths, sickness burden, and societal and financial disruption, and feature a minimum facet impact profile [147]. WHO recommends that success vaccines must display sickness threat discount of at the least 50%, with 95% CI that genuine vaccine efficacy exceeds 30%. [148]. humans with excessive intellectual contamination are at excessive threat for SARS-CoV-2 contamination and COVID-19-associated morbidity and temporality; they need to be provided before time and obtain ingress to secured and effective vaccines [149]. The aged and those with comorbidities are at best threat of excessive coronavirus sickness 2019 (COVID-19). A secure and powerful vaccine may want to assist to defend those businesses in wonderful ways: direct protection, wherein excessive-threat businesses are vaccinated to save you sickness, and oblique protection, wherein the ones in touch with excessive-threat people are vaccinated to lessen transmission [150]. Modern and the mRNA-primarily based totally Pfizer vaccines are

94-95% effective, and those figures have established genuine even in trials analyzing the ones at excessive threat and the aged. It is a not unusual place false impression that this indicates 95% who get the vaccine are covered from the sickness, leaving 5% unprotected. If this have been genuine, in a populace of 100,000 have been vaccinated this will cause 5,000 humans contracting the virus and growing the sickness over 3 months. This charge is just like the modern UK COVID-19 case charge. The 95% effectiveness truly approach that humans with the vaccine have a 95% decrease threat of COVID-19 while as compared to a manipulate group. Without the vaccine, we might count on kind of 1% of the populace to get the sickness, and with the vaccine, this reduces to 0.05%. At such low rates, the vaccines will permit society to get again to 'normal' and for regulations to be completely eased [151]

### Administration of COVID-19 Vaccine

The strain is on for nations to vaccinate humans in opposition to the brand new coronavirus sickness, COVID-19: near fifty million doses had been managed with interior the month since the first vaccines have been recognized for use. China, European Union states, Israel, Russia, the United Kingdom, and the USA are many of the dozens of nations wherein vaccination campaigns are underway. China and Russia also are sending their vaccines throughout the Middle East and Asia— vaccine international association that intend to construct more powerful collaboration with states in the ones domains, such as longtime U. S. Merge [152]. Two of the Coronavirus Disease 2019 (COVID-19) vaccines presently accredited with inside the United States require 2 doses, administered three to four weeks apart. Constraints in vaccine deliver and distribution capacity, collectively with a lethal wave of COVID-19 from November 2020 to January 2021 and the emergence of particularly contagious Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) variants, sparked a coverage debate on whether or not to vaccinate greater people with the primary dose of to be had vaccines and put off the second one dose or to retain with the endorsed 2-dose collection as examined in scientific trials [153]. Among greater than 60 vaccine applicants in scientific trials, presently, most effective the Pfizer-BioNTech, Modern COVID-19, and Johnson & Johnson COVID-19 vaccines have acquired Emergency Use Authorization (EUA) for energetic immunization to save you COVID-19 from America Food and Drug Administration (FDA) 2-four [154].

Vaccines managed in different countries in which United States of America have high vaccines doses administered, and in comparison China, India, Germany, France, Spain, Canada with Saudi Arabia, Japan, Pakistan and Iraq the least vaccines managed 190,364 shown above in Figure 9.

### Vaccine detachment stress

More than 80% of people were immersed with the thoughts of COVID and 72% reported the need to use gloves, and sanitizers [155]. With no accessible antibody, the treatment is fundamentally suggestive for those influenced and protection for those at risk [156]. Immunizations are successful intercessions that can decrease the high weight of sicknesses globally [157]. Coronavirus has spurned the world due to incredibly high disease rates and high death rates. At present we have neither medication nor immunization to forestall this pandemic. Lockdowns, curfews, confinements, isolates, and social removing are the lone approaches to alleviate their contamination. This is gravely influencing the psychological

wellness of people [158]. Negative points of view towards vaccinations and a weakness or hesitation to get inoculations are enormous checks to dealing with the Coronavirus pandemic in the long haul [159].

**Dread of loss of death**

The conditions of COVID infection (Coronavirus)- related passing insert numerous horrendous attributes, close by a few outer variables that can disappoint individual grief [160]. The dread of being tainted or kicking the bucket from the sickness is perhaps the main sources of psychological wellness disorders [161]. As Coronavirus spreads all around the world causing apprehension and death toll, so too does the equivalent pandemic of clinical misinformation [162]. The activity was connected with disquiet, stress and depression [163]. The experience of the deficiency of the family members, which is normally perhaps the most unpleasant occasions in person's life, has changed into another thought and challenge for survivors and mental prosperity specialists during the coronavirus [164]. Ladies detailed more significant levels of passionate danger, generally hazard, and seriousness than men. Passing on is a characteristic piece of life; nonetheless, demise is frequently an unfortunate, terrifying occasion. Passing on amidst the Coronavirus pandemic presents difficulties that amplify standardizing fears and may meddle with a sound lamenting process.

As seen in Figure 10 above the rate of confirmed and new cases in

different countries in which united states of America has confirmed cases 31,708,455 with new cases 51,809, Australia with confirmed 29,666 and new 27 cases, Belgium with 974,418 confirmed and 1 new cases, Bangladesh with confirmed 745,322 and new 2,922 cases, Canada with 1,172, 004 confirmed and new 7,423 cases, China with 103,484 confirmed and new 43 cases, Denmark with 247,622 and new 612 cases France with confirmed 5,413,036 and new 22,849, Germany with confirmed 3,299,325 with new 11,907 cases, Iran with 2,396,204 and new 19,165 cases, India with 17,313,163 and new 352,991, Iraq with confirmed 1,031,322 and new 6,034 cases, Italy with confirmed 3,962,674 and new 13,157 cases, similarly Kyrgyzstan, Libya, Norway, Kuwait, Japan, Sri Lanka, Spain, Sweden, Saudi Arabia, Thailand, Pakistan Nepal have total confirmed and new cases about 7,695,667.

The result show different countries death rate in Figure 11 in which united states of America have 566,540 deaths reported from month of 3<sup>rd</sup> January 2021 to 26<sup>th</sup> April 2021 high ratio among all counties India 2<sup>nd</sup> country with high death rate 195,123 Italy having 3<sup>rd</sup> county with high death rate 119,238 then France with 102,184 death rate Germany with 81,624, Spain then with 77,496 death rate, Iran with 69,574 death cases, Belgium with 24,024, Canada with 23,927 cases of death, Pakistan with 17,117 death cases Thailand with most least death cases of 148, 2<sup>nd</sup> least country Sri Lanka with 642 cases of death Norway 3<sup>rd</sup> least country of death cases with 736 and Australia with 910 cases (Table 1).

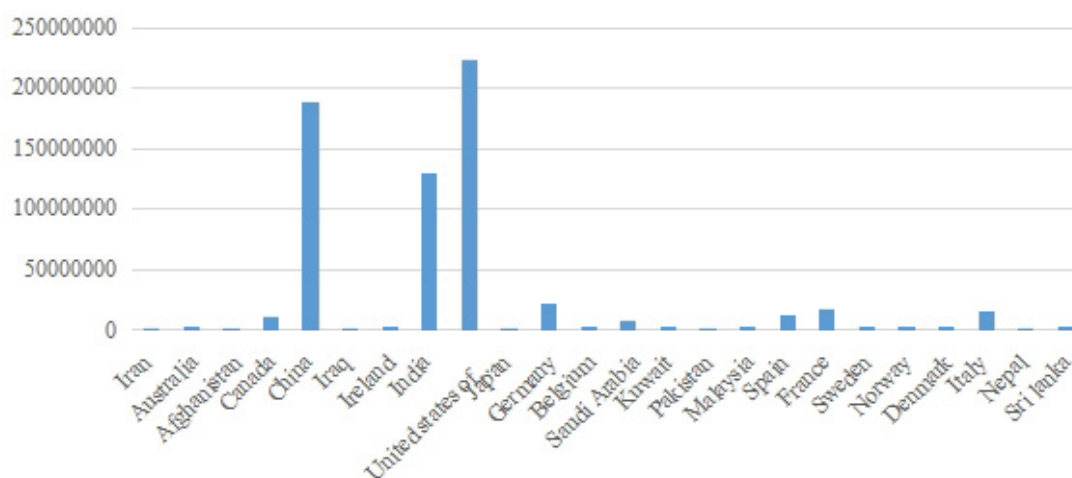


Figure 9: Vaccination administered in different countries as of month of April.

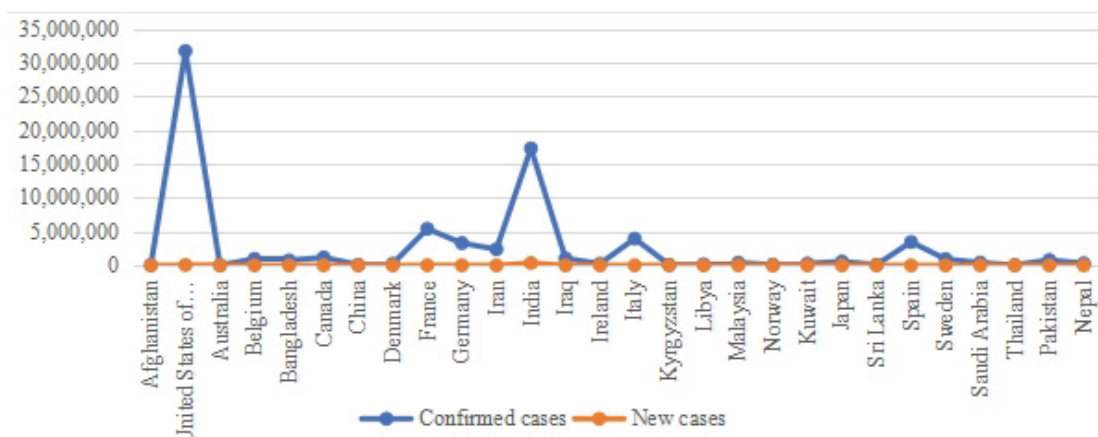


Figure 10: Confirmed and news cases from 3 January 2021 to 26 April 2021.

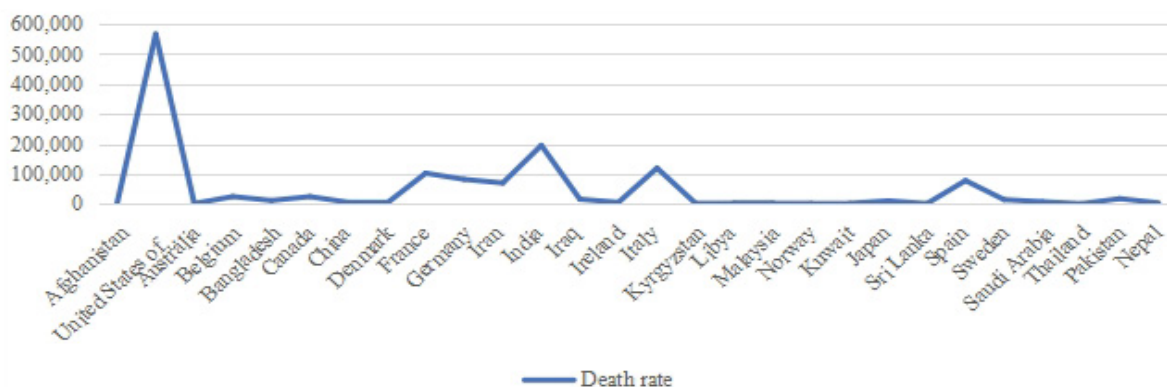


Figure 11: Death rate for different countries from 3 January 2021 to 26th April 2021.

Table 1: Different types of face masks [62].

Types of masks	Composition	Working of mask	Recommended for people
<b>Fabric mask, non-medical masks</b>	Layer 1: retentive material, e.g. cotton. Layer 2: Central layer of non-woven non-spongy material like polypropylene. Layer 3: External layer of non-spongy material, for example, polyester or polyester mix	It ought to set up calmly with little change and using adaptable gatherings or ties. There are distinctive cover shapes like level overlay or duckbill – track down the one that fits intently over your nose, cheeks and jaw.	Utilized by the overall population younger than 60 and who don't have fundamental medical issue.
<b>Clinical Masks also known as additionally careful covers</b>	Made up of 3 layers of fabricated nonwoven materials. Intended to have filtration layers sandwiched in the middle. Open in various thickness, Have different degrees of liquid opposition and filtration.	Clinical covers are for single utilize just; dispose of the mask quickly, ideally into a shut receptacle.	Individuals matured 60 or over. People of any age with covered up diseases. Tallying advancing respiratory tainting, Cardiovascular contamination, risk, weight. Immunocompromised patients and diabetes mellitus.
<b>Respirator mask</b>	Respirators (otherwise called sifting face piece respirators – FFP) are accessible at various execution levels like FFP2, FFP3, N95, and N99.	Respirator mask are intended to get clinical advantages laborers who offer thought Coronavirus patients in settings and zones where deteriorated making systems are tried	These masks are utilized by Medical services laborers. They ought to be fit tried prior to utilizing a respirator to guarantee that they are wearing the right size.

**CONCLUSION**

We have observed different symptoms of COVID 19 in different types of ages of persons. Almost every age group has COVID-19 great impact on mental health. Men’s women’s both face symptoms of disorder, anxiety and depression Death rate observed in different countries from January 2021 to 26<sup>th</sup> April 2021 also confirmed and new cases observed. Vaccination doses are administered in different counties. There should high rate of vaccine doses to protect one’s life,. The COVID-19 that mentally disturbs everyone there should be some way to stop people over thinking about COVID 19 that affects their health. Coronavirus causes actual wellbeing worries as well as results in various mental problems. The spread of the new COVID can affect the emotional well-being of individuals in various networks. In this way, it is fundamental for safeguard the emotional wellness of people and to create mental intercessions that can improve the psychological well-being of weak gatherings during the Coronavirus pandemic. While the exploration for an antibody and fix proceed with unabated and our insight into COVID-19 develops, it is additionally an opportunity to make a stride back and take a gander at what we definitely. Think about mental prosperity and social impacts of pandemics, especially novel viral Coronavirus pandemics, and set that data to work. There is undoubtable proof that a novel disease, for example, COVID-19 can cause broad dread, frenzy, uneasiness and xenophobia. There are prominent worries about the ascent of viciousness during a period of social removing, joblessness and far reaching monetary

instability. While research for natural anticipation and fix proceeds, the attention on mental and social effects, and their intercessions ought not to be dismissed.

**REFERENCES**

1. Tian S, Hu N, Lou J, Chen K, Kang X, Xiang Z, et al. Characteristics of COVID-19 infection in Beijing. *J Infect.* 2020;80(4):401-406.
2. Filatov A, Sharma P, Hindi F, Espinosa PS. Neurological complications of coronavirus disease (COVID-19): encephalopathy. *Cureus.* 2020;12(3).
3. Ruggeri RM, Campenni A, Siracusa M, Frazzetto G, Gullo D. Subacute thyroiditis in a patient infected with SARS-COV-2: an endocrine complication linked to the COVID-19 pandemic. *Hormones.* 2021;20(1):219-221.
4. Long C, Xu H, Shen Q, Zhang X, Fan B, Wang C, et al. Diagnosis of the Coronavirus disease (COVID-19): rRT-PCR or CT?. *European J Radiol.* 2020;126:108961.
5. World Health Organization. Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020. World Health Organization; 2020.
6. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. *J Adv Res.* 2020;24:91-98.
7. White RG, Van Der Boor C. Impact of the COVID-19 pandemic and initial period of lockdown on the mental health and well-being of adults in the UK. *BJ Psych open.* 2020;6(5).

8. De Flora S, La Maestra S. Growth and decline of the COVID-19 epidemic wave in Italy from March to June 2020. *J Med Virol*. 2021;93(3):1613-619.
9. Backer JA, Mollema L, Vos ER, Klinkenberg D, Van Der Klis FR, De Melker HE, et al. Impact of physical distancing measures against COVID-19 on contacts and mixing patterns: repeated cross-sectional surveys, the Netherlands, 2016–17, April 2020 and June 2020. *Eurosurveillance*. 2021;26(8):2000994.
10. Sim HS, How CH. Mental health and psychosocial support during healthcare emergencies–COVID-19 pandemic. *Singapore Med J*. 2020;61(7):357.
11. Knepple CA, Graf AS, Hudson G, Wilson E. Age moderates perceived COVID-19 disruption on well-being. *The Gerontol*. 2021;61(1):30-35..
12. Caulkins J, Grass D, Feichtinger G, Hartl R, Kort PM, Prskawetz A, et al. How long should the COVID-19 lockdown continue?. *Plos one*. 2020;15(12):0243413.
13. Cullen W, Gulati G, Kelly BD. Mental health in the COVID-19 pandemic. *QJM: An Int J Med*. 2020;113(5):311-312.
14. Barouki R, Kogevinas M, Audouze K, Belesova K, Bergman A, Birnbaum L, et al. The COVID-19 pandemic and global environmental change: Emerging research needs. *Environment International*. 2021;146:106272.
15. Ravens-Sieberer U, Kaman A, Erhart M, Devine J, Schlack R, Otto C. Impact of the COVID-19 pandemic on quality of life and mental health in children and adolescents in Germany. *Eur Child Adolesc Psychiatry*. 2021:1-11.
16. Wang Y, Shi L, Que J, Lu Q, Liu L, Lu Z, et al. The impact of quarantine on mental health status among general population in China during the COVID-19 pandemic. *Mol Psychiatry*. 2021:1-10.
17. Rauschenberg C, Schick A, Hirjak D, Seidler A, Paetzold I, Apfelbacher C, et al. Evidence synthesis of digital interventions to mitigate the negative impact of the COVID-19 pandemic on public mental health: rapid meta-review. *J Med Int Res*. 2021;23(3):23365.
18. Ranjbar K, Hosseinpour H, Shahriarirad R, Ghaem H, Jafari K, Rahimi T, et al. Quarantine: a web-based survey in south of Iran. *Environ Health Prevent Med*. 2021;26(1):1-10..
19. Asanov I, Flores F, McKenzie D, Mensmann M, Schulte M. Remote-learning, time-use, and mental health of Ecuadorian high-school students during the COVID-19 quarantine. *World Develop*. 2021;138:105225.
20. Meo SA, Al-Khlaiwi T, Usmani AM, Meo AS, Klonoff DC, Hoang TD. Biological and epidemiological trends in the prevalence and mortality due to outbreaks of novel coronavirus COVID-19. *J King Saud Univ Sci*. 2020;32(4):2495-2499.
21. Hoevenaar M, Goossens D, Roorda J. Angiotensin-converting enzyme 2, the complement system, the kallikrein-kinin system, type-2 diabetes, interleukin-6, and their interactions regarding the complex COVID-19 pathophysiological crossroads. *J Renin-Angiotensin-Aldosterone Syst*. 2020;21(4):1470320320979097.
22. Lauc G, Sinclair D. Biomarkers of biological age as predictors of COVID-19 disease severity. *Aging*. 2020;12(8):6490.
23. Corley MJ, Ndhlovu LC. DNA methylation analysis of the COVID-19 host cell receptor, angiotensin I converting enzyme 2 gene (ACE2) in the respiratory system reveal age and gender differences.
24. Mittal A, Manjunath K, Ranjan RK, Kaushik S, Kumar S, Verma V. COVID-19 pandemic: Insights into structure, function, and hACE2 receptor recognition by SARS-CoV-2. *PLoS pathogens*. 2020;16(8):e1008762.
25. Gao Y, Yan L, Huang Y, Liu F, Zhao Y, Cao L, et al. Structure of the RNA-dependent RNA polymerase from COVID-19 virus. *Science*. 2020;368:779-782.
26. Vankadari N, Wilce JA. Emerging COVID-19 coronavirus: glycan shield and structure prediction of spike glycoprotein and its interaction with human CD26. *Emerging Microbes & Infections*. 2020;9(1):601-604.
27. Mousavizadeh L, Ghasemi S. Genotype and phenotype of COVID-19: Their roles in pathogenesis. *J Microbiol Immunol Infect*. 2020.
28. Fan Z, Chen L, Li J, Cheng X, Yang J, Tian C, et al. Clinical features of COVID-19-related liver functional abnormality. *Clin Gastroenterol Hepatol*. 2020;18(7):1561-1566.
29. Alqahtani SA, Schattenberg JM. Liver injury in COVID-19: The current evidence. *United Eur gastroenterol J*. 2020;8(5):509-519.
30. Wong GL, Wong VW, Thompson A, Jia J, Hou J, Lesmana CR, et al. Management of patients with liver derangement during the COVID-19 pandemic: an Asia-Pacific position statement. *The Lancet*. 2020.
31. Wu J, Song S, Cao HC, Li LJ. Liver diseases in COVID-19: Etiology, treatment and prognosis. *World J gastroenterol*. 2020;26(19):2286..
32. Zhang C, Shi L, Wang FS. Liver injury in COVID-19: Management and challenges. *The Lancet Gastroenterol Hepatol*. 2020;5(5):428-430..
33. Ali I, Alharbi OM. COVID-19: Disease, management, treatment, and social impact. *Sci Total Environ*. 2020;728:138861.
34. Struyf T, Deeks JJ, Dinnes J, Takwoingi Y, Davenport C, Leeflang MM, et al. Signs and symptoms to determine if a patient presenting in primary care or hospital outpatient settings has COVID-19 disease. *Cochrane Database of Systematic Reviews*. 2020.
35. Chu DK, Akl EA, Duda S, Solo K, Yaacoub S, Schünemann HJ, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *The Lancet*. 2020; 395(10242):1973-1987.
36. Muniyappa R, Gubbi S. COVID-19 pandemic, coronaviruses, and diabetes mellitus. *Am J Physiol Endocrinol Metab*. 2020;318(5):736-41.
37. Han P, Ivanovski S. Saliva—friend and foe in the COVID-19 outbreak. *Diagnostics*. 2020;10(5):290.
38. Wang HY, Li XL, Yan ZR, Sun XP, Han J, Zhang BW. Potential neurological symptoms of COVID-19. *Therapeutic advances in neurological disorders*. 2020;13:1756286420917830.
39. Ahmad T, Khan M, Haroon TH, Nasir S, Hui J, Bonilla-Aldana DK, et al. COVID-19: Zoonotic aspects. *Trav Med Infect Dis*. 2020.
40. Menni C, Valdes AM, Freidin MB, Sudre CH, Nguyen LH, Drew DA, et al. Real-time tracking of self-reported symptoms to predict potential COVID-19. *Nature Medicine*. 2020;26(7):1037-1040.
41. Lotfi M, Hamblin MR, Rezaei N. COVID-19: Transmission, prevention, and potential therapeutic opportunities. *Clinica Chimica Acta*. 2020.
42. Izzetti R, Nisi M, Gabriele M, Graziani F. COVID-19 transmission in dental practice: brief review of preventive measures in Italy. *J Dent Res*. 2020;99(9):1030-1038.
43. Liu J, Zhou J, Yao J, Zhang X, Li L, Xu X, et al. Impact of meteorological factors on the COVID-19 transmission: A multi-city study in China. *Science of the total environment*. 2020;726:138513.
44. Qing H, Li Z, Yang Z, Shi M, Huang Z, Song J, et al. The possibility of COVID-19 transmission from eye to nose. *Acta ophthalmologica*. 2020.
45. Mizumoto K, Kagaya K, Chowell G. Effect of a wet market on coronavirus disease (COVID-19) transmission dynamics in China, 2019–2020. *Int J Infect Dis*. 2020;97:96-101.

46. Cho HJ, Koo JW, Roh SK, Kim YK, Suh JS, Moon JH, et al. COVID-19 transmission and blood transfusion: a case report. *J Infect Public Health*. 2020;13(11):1678-1679.
47. Durante R, Guiso L, Gulino G. Asocial capital: Civic culture and social distancing during COVID-19. *J Public Econ*. 2021;194:104342.
48. Thunström L, Newbold SC, Finnoff D, Ashworth M, Shogren JF. The benefits and costs of using social distancing to flatten the curve for COVID-19. *Journal of Benefit-Cost Analysis*. 2020;11(2):179-195..
49. Kissler SM, Tedijanto C, Lipsitch M, Grad Y. Social distancing strategies for curbing the COVID-19 epidemic. *MEDRXIV*. 2020.
50. Singh R, Adhikari R. Age-structured impact of social distancing on the COVID-19 epidemic in India. *ARXIV:2003.12055*. 2020.
51. Courtemanche C, Garuccio J, Le A, Pinkston J, Yelowitz A. Strong Social Distancing Measures In The United States Reduced The COVID-19 Growth Rate: Study evaluates the impact of social distancing measures on the growth rate of confirmed COVID-19 cases across the United States. *Health Affairs*. 2020;39(7):1237-1246.
52. Xie K, Liang B, Dulebenets MA, Mei Y. The impact of risk perception on social distancing during the COVID-19 pandemic in China. *Int J Environ Res Public Health*. 2020;17(17):6256.
53. Chen S, Yang J, Yang W, Wang C, Bärnighausen T. COVID-19 control in China during mass population movements at New Year. *The Lancet*. 2020;395(10226):764-766.
54. Feng S, Shen C, Xia N, Song W, Fan M, Cowling BJ. Rational use of face masks in the COVID-19 pandemic. *The Lancet*. 2020;8(5):434-436.
55. Li T, Liu Y, Li M, Qian X, Dai SY. Mask or no mask for COVID-19: A public health and market study. *PloS one*. 2020;15(8):e0237691.
56. Esposito S, Principi N. To mask or not to mask children to overcome COVID-19. *Eur J Pediatrics*. 2020;179(8):1267-1270.
57. Eikenberry SE, Mancuso M, Iboi E, Phan T, Eikenberry K, Kuang Y, Kostelich E, Gumel AB. To mask or not to mask: Modeling the potential for face mask use by the general public to curtail the COVID-19 pandemic. *Infect Dis Mod*. 2020;5:293-308.
58. Lyu W, Wehby GL. Community use of face masks and COVID-19: evidence from a natural experiment of state mandates in the US: Study examines impact on COVID-19 growth rates associated with state government mandates requiring face mask use in public. *Health Affairs*. 2020;39(8):1419-1425.
59. Hernigou J, Morel X, Callewier A, Bath O, Hernigou P. Staying home during “COVID-19” decreased fractures, but trauma did not quarantine in one hundred and twelve adults and twenty eight children and the “tsunami of recommendations” could not lockdown twelve elective operations. *Int Orthop*. 2020;44:1473-1480.
60. National Academies of Sciences, Engineering, and Medicine. Rapid expert consultation on the effectiveness of fabric masks for the COVID-19 Pandemic (April 8, 2020). In *Rapid Expert Consultations on the COVID-19 Pandemic: March 14, 2020–April 8, 2020* 2020 Apr 30. National Academies Press (US).
61. WHO. Coronavirus Disease (COVID-19): Masks. 2020.
62. Piquero AR, Riddell JR, Bishopp SA, Narvey C, Reid JA, Piquero NL. Staying home, staying safe? A short-term analysis of COVID-19 on Dallas domestic violence. *American J Crim Justice*. 2020;45(4):601-635.
63. Chen P, Mao L, Nassis GP, Harmer P, Ainsworth BE, Li F. Wuhan coronavirus (2019-nCoV): The need to maintain regular physical activity while taking precautions. *J Sport Health Sci*. 2020;9(2):103.
64. Fowler JH, Hill SJ, Levin R, Obradovich N. The effect of stay-at-home orders on COVID-19 infections in the United States. *ARXIV preprint ARXIV:2004.06098*. 2020.
65. Wang G. Stay at home to stay safe: Effect of stay-at-home order on containing the COVID-19 pandemic. 2020.
66. Ardan M, Rahman FF, Geroda GB. The influence of physical distance to student anxiety on COVID-19, Indonesia. *J Crit Rev*. 2020;7(17):1126-1132.
67. Suzuki M, Hotta M, Nagase A, Yamamoto Y, Hirakawa N, Satake Y, et al. The behavioral pattern of patients with frontotemporal dementia during the COVID-19 pandemic. *Int Psychogeriatr*. 2020;32(10):1231-1234.
68. Pfefferbaum B, North CS. Mental health and the COVID-19 pandemic. *New Eng J Med*. 2020;383(6):510-512.
69. Wang Y, Wen Y, Wang Y, Zhang S, Zhang KM, Zheng H, et al. Four-month changes in air quality during and after the COVID-19 lockdown in six megacities in China. *Environ Sci Technol Lett*. 2020;7(11):802-808.
70. Fatima N, Saqqur M, Qamar F, Shaukat S, Shuaib A. Impact of COVID-19 on neurological manifestations: an overview of stroke presentation in pandemic. *Neuro Sci*. 2020;6:1-5.
71. Olivera-La Rosa A, Chuquichambi EG, Ingram GP. Keep your (social) distance: Pathogen concerns and social perception in the time of COVID-19. *Pers Individ Differ*. 2020;166:110200.
72. Kontoangelos K, Economou M, Papageorgiou C. Mental health effects of COVID-19 pandemic: a review of clinical and psychological traits. *Psychiatry Investig*. 2020;17(6):491.
73. Lin K, Yang BX, Luo D, Liu Q, Ma S, Huang R, et al. The mental health effects of COVID-19 on health care providers in China. *Am J Psychiatry*. 2020;177(7):635-636.
74. Kiernan FM. Income loss and the mental health of young mothers: evidence from the recession in Ireland. *J Ment Health Policy Econ*. 2019;22(4):131-149.
75. Witteveen D, Velthorst E. Economic hardship and mental health complaints during COVID-19. *Proceedings of the National Academy of Sciences*. 2020;117(44):27277-27284.
76. Li X, Lu P, Hu L, Huang T, Lu L. Factors associated with mental health results among workers with income losses exposed to COVID-19 in China. *International journal of environmental research and public health*. 2020;17(15):5627.
77. Godinic D, Obrenovic B, Khudaykulov A. Effects of economic uncertainty on mental health in the COVID-19 pandemic context: social identity disturbance, job uncertainty and psychological well-being model. *Int J Innov Econ Dev*. 2020;6:61-74.
78. Griffiths D, Sheehan L, van Vreden C, Petrie D, Grant G, Whiteford P, et al. The impact of work loss on mental and physical health during the COVID-19 pandemic: baseline findings from a prospective cohort study. *J Occup Rehabil*. 2021;3:1-8.
79. Choudhari R. COVID 19 pandemic: mental health challenges of internal migrant workers of India. *Asian J Psychiatry*. 2020;54:102254..
80. Greenberg N. Mental health of health-care workers in the COVID-19 era. *Nat Rev Nephrol*. 2020;19:1-2.
81. Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcare workers due to the COVID-19 pandemic—A review. *Asian J Psychiatry*. 2020;51:102119.
82. Walton M, Murray E, Christian MD. Mental health care for medical staff and affiliated healthcare workers during the COVID-19 pandemic. *Eur Heart J*. 2020;9(3):241-247.
83. Moll S, Eakin JM, Franche RL, Strike C. When health care workers

- experience mental ill health: institutional practices of silence. *Qual Health Res.* 2013;23(2):167-179.
84. Cai W, Lian B, Song X, Hou T, Deng G, Li H. A cross-sectional study on mental health among health care workers during the outbreak of Corona Virus Disease 2019. *Asian J Psychiatry.* 2020;51:102111.
  85. Ehrlich H, McKenney M, Elkbuli A. Protecting our healthcare workers during the COVID-19 pandemic. *Am J Emerg Med.* 2020;38(7):1527-1528.
  86. Huremović D. Mental health of quarantine and isolation. In *Psychiatry of Pandemics* Springer. 2019;95-118.
  87. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet.* 2020;395(10227):912-920.
  88. Henssler J, Stock F, van Bohemen J, Walter H, Heinz A, Brandt L. Mental health effects of infection containment strategies: Quarantine and isolation—A systematic review and meta-analysis. *Eur Arch Psychiatry Clin Neurosci.* 2020;6:1-2.
  89. Filgueiras A, Stults-Kolehmainen M. Factors linked to changes in mental health outcomes among Brazilians in quarantine due to COVID-19. *MedRxiv.* 2020.
  90. Giallonardo V, Sampogna G, Del Vecchio V, Luciano M, Albert U, Carmassi C, et al. The impact of quarantine and physical distancing following COVID-19 on mental health: study protocol of a multicentric Italian population trial. *Front Psychiatry.* 2020;11.
  91. Maqsood A, Abbas J, Rehman G, Mubeen R. The paradigm shift for educational system continuance in the advent of COVID-19 pandemic: Mental health challenges and reflections. *Curr Res Behavior Sci.* 2021;2:100011.
  92. Chaturvedi K, Vishwakarma DK, Singh N. COVID-19 and its impact on education, social life and mental health of students: A survey. *Child Youth Serv Rev.* 2021;121:105866.
  93. Lee SJ, Ward KP, Chang OD, Downing KM. Parenting activities and the transition to home-based education during the COVID-19 pandemic. *Child Youth Serv Rev.* 2021;122:105585.
  94. Haynes EN, Hilbert TJ, Westneat S, Leger KA, Keynton K, Bush H. Impact of the COVID-19 Shutdown on Mental Health in Appalachia by Working Status. *J App Health.* 2021;3(1):18.
  95. Mitchell TO, Li L. State-level data on suicide mortality during COVID-19 quarantine: early evidence of a disproportionate impact on racial minorities. *Psychiatry Res.* 2021;295:113629.
  96. Pan KY, Kok AA, Eikelenboom M, Horsfall M, Jörg F, Luteijn RA, et al. The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: a longitudinal study of three Dutch case-control cohorts. *The Lancet.* 2021;8(2):121-129..
  97. Tang S, Xiang M, Cheung T, Xiang YT. Mental health and its correlates among children and adolescents during COVID-19 school closure: The importance of parent-child discussion. *Journal of affective disorders.* 2021;279:353-60.
  98. Isumi A, Doi S, Yamaoka Y, Takahashi K, Fujiwara T. Do suicide rates in children and adolescents change during school closure in Japan? The acute effect of the first wave of COVID-19 pandemic on child and adolescent mental health. *Child Abuse & Neglect.* 2020;110:104680.
  99. Douglas M, Katikireddi SV, Taulbut M, McKee M, McCartney G. Mitigating the wider health effects of COVID-19 pandemic response. *Bmj.* 2020;369.
  100. Fontenelle-Tereshchuk D. Mental health and the COVID-19 crisis: The hopes and concerns for children as schools re-open. *Interchange.* 2021;52(1):1-16..
  101. Viner RM, Russell S, Saull R, Croker H, Stansfield C, Packer J, et al. Impacts of school closures on physical and mental health of children and young people: a systematic review. *MedRxiv.* 2021.
  102. Rundle AG, Park Y, Herbstman JB, Kinsey EW, Wang YC. COVID-19-related school closings and risk of weight gain among children. *Obesity.* 2020;28(6):1008-1009.
  103. Zhang L, Zhang D, Fang J, Wan Y, Tao F, Sun Y. Assessment of mental health of Chinese primary school students before and after school closing and opening during the COVID-19 pandemic. *JAMA.* 2020;3(9):e2021482.
  104. Chirico F, Nucera G, Magnavita N. Protecting the mental health of healthcare workers during the COVID-19 emergency. *BJPsych Int.* 2021;18(1).
  105. Ni J, Wang F, Liu Y, Wu M, Jiang Y, Zhou Y, Sha D. Psychological impact of the COVID-19 pandemic on Chinese health care workers: cross-sectional survey study. *JMIR Mental Health.* 2021;8(1).
  106. Chatzittofis A, Karanikola M, Michailidou K, Constantinidou A. Impact of the COVID-19 Pandemic on the Mental Health of Healthcare Workers. *Int J Environ Res Public Health.* 2021;18(4):1435.
  107. Simon NM, Saxe GN, Marmar CR. Mental health disorders related to COVID-19-related deaths. *JAMA.* 2020;324(15):1493-1494.
  108. Kavor AR. COVID-19 in people with mental illness: challenges and vulnerabilities. *Asian J Psychiatry.* 2020.
  109. Radeloff D, Papsdorf R, Uhlig K, Vasilache A, Putnam K, Von Klitzing K. Trends in suicide rates during the COVID-19 pandemic restrictions in a major German city. *Epidemiol Psy Sci.* 2021;30.
  110. Sakamoto H, Ishikane M, Ghaznavi C, Ueda P. Assessment of suicide in Japan during the COVID-19 pandemic vs previous years. *JAMA.* 2021;4(2):e2037378.
  111. Usher K, Durkin J, Bhullar N. The COVID-19 pandemic and mental health impacts. *International Journal of Mental Health Nursing.* 2020;29(3):315.
  112. Inchausti F, MacBeth A, Hasson-Ohayon I, Dimaggio G. Psychological intervention and COVID-19: What we know so far and what we can do. *J. Contemp. Psychother.* 2020;50:243-250.
  113. Lebow JL. Family in the age of COVID-19. *Family process.* 2020
  114. Glynn LM, Davis EP, Luby JL, Baram TZ, Sandman CA. A predictable home environment may protect child mental health during the COVID-19 pandemic. *Neurobiol Stress.* 2021;14:100291.
  115. Ghebreyesus TA. Addressing mental health needs: an integral part of COVID-19 response. *World Psychiatry.* 2020;19(2):129..
  116. Schmits E, Glowacz F. Changes in alcohol use during the COVID-19 pandemic: impact of the lockdown conditions and mental health factors. *Int J Ment Health Addiction.* 2021;4:1-12..
  117. Bufquin D, Park JY, Back RM, de Souza Meira JV, Hight SK. Employee work status, mental health, substance use, and career turnover intentions: An examination of restaurant employees during COVID-19. *Int J Hosp Manag.* 2021;93:102764.
  118. Biddle N, Edwards B, Gray M, Sollis K. Alcohol consumption during the COVID-19 period: May 2020.
  119. Pollard MS, Tucker JS, Green HD. Changes in adult alcohol use and consequences during the COVID-19 pandemic in the US. *JAMA.* 2020;3(9):e2022942.
  120. Dubey MJ, Ghosh R, Chatterjee S, Biswas P, Chatterjee S, Dubey S. COVID-19 and addiction. *Diabetes & Metabolic Syndrome: Clin Res Rev.* 2020;14(5):817-23.
  121. Graupensperger S, Fleming CB, Jaffe AE, Rhew IC, Patrick ME, Lee CM. Changes in young adults' alcohol and marijuana use, norms,

- and motives from before to during the COVID-19 pandemic. *J Adolesc Health*. 2021;68(4):658-65.
122. Rogers AH, Shepherd JM, Garey L, Zvolensky MJ. Psychological factors associated with substance use initiation during the COVID-19 pandemic. *Psychiatry Res*. 2020;293:113407.
  123. Devitt P. Can we expect an increased suicide rate due to COVID-19? *Ir J Psychol Med*. 2020;37(4):264-268..
  124. Sher L. The impact of the COVID-19 pandemic on suicide rates. *QJM: An International Journal of Medicine*. 2020;113(10):707-712..
  125. Niederkrotenthaler T, Gunnell D, Arensman E, Pirkis J, Appleby L, Hawton K, et al. Suicide research, prevention, and COVID-19. 2020.
  126. Wasserman D, Iosue M, Wuestefeld A, Carli V. Adaptation of evidence-based suicide prevention strategies during and after the COVID-19 pandemic. *World Psychiatry*. 2020;19(3):294-306.
  127. Tanaka T, Okamoto S. Increase in suicide following an initial decline during the COVID-19 pandemic in Japan. *Nature human behaviour*. 2021;5(2):229-238.
  128. Roy D, Tripathy S, Kar SK, Sharma N, Verma SK, Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian J Psychiatry*. 2020;51:102083.
  129. Haider II, Tiwana F, Tahir SM. Impact of the COVID-19 pandemic on adult mental health. *Pak J Med Sci*. 2020;36(COVID19-S4):S90.
  130. El-Elimat T, AbuAlSamen MM, Almomani BA, Al-Sawalha NA, Alali FQ. Acceptance and attitudes toward COVID-19 vaccines: A cross-sectional study from Jordan. *Plos one*. 2021;16(4):e0250555.
  131. Singh N, Rai S, Singh V, Singh MP. Molecular characterization, pathogen-host interaction pathway and in silico approaches for vaccine design against COVID-19. *J Chem Neuro*. 2020:101874.
  132. Paul E, Steptoe A, Fancourt D. Attitudes towards vaccines and intention to vaccinate against COVID-19: Implications for public health communications. *The Lancet*. 2021;1:100012.
  133. Kokou-Kpolou CK, Fernández-Alcántara M, Cénat JM. Prolonged grief related to COVID-19 deaths: Do we have to fear a steep rise in traumatic and disenfranchised griefs?. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2020;12:1-94.
  134. Bhattacharjee B, Acharya T. The COVID-19 pandemic and its effect on mental health in USA—a review with some coping strategies. *Psychiatric Quarterly*. 2020;23:1-11.
  135. Love JS, Blumenberg A, Horowitz Z. The parallel pandemic: Medical misinformation and COVID-19: Primum non nocere. *J Gen Int Med*. 2020;35:2435-2436.
  136. Bitan DT, Grossman-Giron A, Bloch Y, Mayer Y, Shiffman N, Mendlovic S. Fear of COVID-19 scale: Psychometric characteristics, reliability and validity in the Israeli population. *Psychiatry Res*. 2020 Jul 1;289:113100.
  137. Mortazavi SS, Assari S, Alimohamadi A, Rafiee M, Shati M. Fear, loss, social isolation, and incomplete grief due to COVID-19: a recipe for a psychiatric pandemic. *Bas Clin Neurosci*. 2020;11(2):225.
  138. Yildırım M, Güler A. Factor analysis of the COVID-19 Perceived Risk Scale: A preliminary study. *Death studies*. 2020 Jun 24:1-8.
  139. LeRoy AS, Robles B, Kilpela LS, Garcini LM. Dying in the face of the COVID-19 pandemic: Contextual considerations and clinical recommendations. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2020.
  140. Wang Q, Xu R, Volkow ND. Increased risk of COVID-19 infection and mortality in people with mental disorders: analysis from electronic health records in the United States. *World Psychiatry*. 2021;20(1):124-130.
  141. Czeisler MÉ, Lane RI, Petrosky E, Wiley JF, Christensen A, Njai R, et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic—United States, June 24–30, 2020. *Morbidity and Mortality Weekly Report*. 2020;69(32):1049.
  142. Bäuerle A, Steinbach J, Schweda A, Beckord J, Hetkamp M, Weismüller B, et al. Mental health burden of the COVID-19 outbreak in Germany: predictors of mental health impairment. *J Prim Care Comm Health*. 2020;11:2150132720953682.
  143. Kohls E, Baldofski S, Moeller R, Klemm SL, Rummel-Kluge C. Mental Health, Social and Emotional Well-Being, and Perceived Burdens of University Students During COVID-19 Pandemic Lockdown in Germany. *Front Psychiatry*. 2021;12:441..
  144. Skoda EM, Bäuerle A, Schweda A, Dörrrie N, Musche V, Hetkamp M, et al. Severely increased generalized anxiety, but not COVID-19-related fear in individuals with mental illnesses: A population based cross-sectional study in Germany. *Int J Soc Psychiatry*. 2020:0020764020960773.
  145. Robillard R, Daros AR, Phillips JL, Porteous M, Saad M, Pennestri MH, et al. Emerging New Psychiatric Symptoms and the Worsening of Pre-existing Mental Disorders during the COVID-19 Pandemic: A Canadian Multisite Study: Nouveaux symptômes psychiatriques émergents et détérioration des troubles mentaux préexistants durant la pandémie de la COVID-19: une étude canadienne multisite. *The Canadian Journal of Psychiatry*. 2021;1:0706743720986786.
  146. Cost KT, Crosbie J, Anagnostou E, Birken CS, Charach A, Monga S, et al. Mostly worse, occasionally better: impact of COVID-19 pandemic on the mental health of Canadian children and adolescents. *European child & adolescent psychiatry*. 2021;26:14.
  147. Jenkins EK, McAuliffe C, Hirani S, Richardson C, Thomson KC, McGuinness L, et al. A portrait of the early and differential mental health impacts of the COVID-19 pandemic in Canada: findings from the first wave of a nationally representative cross-sectional survey. *Prevent Med*. 2021;145:106333.
  148. Fiorenzato E, Zabberoni S, Costa A, Cona G. Cognitive and mental health changes and their vulnerability factors related to COVID-19 lockdown in Italy. *PLoS One*. 2021;16(1):e0246204.
  149. Rossi R, Soggi V, Talevi D, Mensi S, Niolu C, Pacitti F, et al. COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Front Psychiatry*. 2020;11:790.
  150. Gualano MR, Moro GL, Voglino G, Bert F, Siliquini R. Monitoring the impact of COVID-19 pandemic on mental health: a public health challenge? Reflection on Italian data. *Soc Psychiatry Psychiatr Epidemiol*. 2021;56(1):165-167.
  151. Mencacci C, Salvi V. Expected effects of COVID-19 outbreak on depression incidence in Italy. *J Affect Disord*. 2021;278:266.
  152. Valiente C, Contreras A, Peinado V, Trucharte A, Martínez AP, Vázquez C. Psychological adjustment in Spain during the COVID-19 pandemic: positive and negative mental health outcomes in the general population. *Span J Psychol*. 2021;24.
  153. González-Sanguino C, Ausín B, Castellanos MA, Saiz J, Muñoz M. Mental health consequences of the COVID-19 outbreak in Spain. A longitudinal study of the alarm situation and return to the new normality. *Prog Neuropsychopharmacol Biol Psychiatry*. 2021;107:110219.
  154. López-Núñez MI, Díaz-Morales JF, Aparicio-García ME. Individual differences, personality, social, family and work variables on mental health during COVID-19 outbreak in Spain. *Pers Individ Differ*. 2021;172:110562.

155. Odrizola-González P, Planchuelo-Gómez Á, Irurtia-Muñiz MJ, de Luis-García R. Psychological symptoms of the outbreak of the COVID-19 crisis and confinement in the population of Spain.
156. Suryadevara V, Adusumalli C, Adusumilli PK, Chalasani SH, Radhakrishnan R. Mental Health Status among the South Indian Pharmacy Students during COVID-19 Pandemic Quarantine Period: A Cross-Sectional Study. *MedRxiv*. 2020.
157. Reddy V, Karri SR, 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 Disorders*. 2020;4(4):158-174.
158. Roy A, Singh AK, Mishra S, Chinnadurai A, Mitra A, Bakshi O. Mental health implications of COVID-19 pandemic and its response in India. *Int J Soc Psychiatry*. 2020.
159. Saikarthik J, Saraswathi I, Siva T. Risk factors and protective factors of mental health during COVID-19 outbreak and lockdown in adult Indian population-A cross-sectional study. *MedRxiv*. 2020.
160. Alkhamees AA, Alrashed SA, Alzunaydi AA, Almohimeed AS, Aljohani MS. The psychological impact of COVID-19 pandemic on the general population of Saudi Arabia. *Compr psychiatry*. 2020;102:152192..
161. AlAteeq DA, Aljhani S, Althiyabi I, Majzoub S. Mental health among healthcare providers during coronavirus disease (COVID-19) outbreak in Saudi Arabia. *J Infect Public Health*. 2020;13(10):1432-1437.
162. Alfawaz H, Yakout SM, Wani K, Aljumah GA, Ansari MG, Khattak MN, Hussain SD, Al-Daghri NM. Dietary intake and mental health among Saudi adults during COVID-19 lockdown. *Int J Environ Res Public Health*. 2021;18(4):1653.
163. Huang Y, Zhao N. Mental health burden for the public affected by the COVID-19 outbreak in China: Who will be the high-risk group?. *Psychol Health Med*. 2021;26(1):23-34.
164. Asai K, Wakashima K, Toda S, Koiwa K. Fear of novel coronavirus disease (COVID-19) among pregnant and infertile women in Japan. *J Affect Dis Rep*. 2021;4:100104..