

# Psychological Impact on Individuals during Pandemics/Epidemics

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**Abstract:** The pandemics and epidemics have been a subject for research in the past decades. This study aims at assessing the mental health conditions during various pandemics among the patients, health workers, and the general public. The study has included various researches concerned with the topic. The pandemics and epidemics have taken into consideration are Covid-19, Spanish influenza, American Polio epidemic, H1N1 flu (Swine flu), and SARS outbreak. The research paper analyzed the stress and other related mental health conditions prevailing during the pandemics and epidemics.

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## 1. Introduction

The impact of pandemics and epidemics on the mental health of individuals is not new (Cohut, 2020). These medical phenomena have imposed a varied impact on the mental well being of individuals in the society, that further causes disruption and turmoil. Stress, anxiety, and panic are majorly linked with the outbreak of pandemics and epidemics. Not just that, but xenophobia, which is the fear of hatred from the foreign individuals along with stigma are the two significant disorders found among individuals during the pandemic. In the past, it is observed, as the risk increases in the general public, people begin to hoard essentials, which reflects their insecurity. The perceived notions during a pandemic surges anxiety, unusual behavior is observed due to anxiety, sleep disorders, and following reduced health conditions are also prevalent (Moukaddam, 2020). Pandemics have a substantial impact on the mental well being of individuals, who are at high risk of getting infected or have already been infected. According to Betty Pfefferbaum in her article "Mental Health and the Covid-19 Pandemic", some of the common distress among individuals include a sense of insecurity, emotional isolation and confusion. For communities, anxiety, and depression take roots through expected losses, closure of work and public places, inadequate supply of essentials along with negligence towards ailments and

diseases other than the cause of the pandemic (Pfefferbaum and North, 2020).

As the current circumstances evolve around the Covid-19 pandemic, a major threat has been imposed on the mental well-being of individuals. According to Shigemura et al. 2020, People throughout the globe are experiencing rising rates of depression, anxiety, and PTSD with certain levels of adverse social behaviors (Cosic, Popoviü, Šarlija and Kesedžiü, 2020).

Following the history of pandemics, there has been a substantial effect on the psychological health of individuals. These catastrophic events have been happening at regular intervals, take Spanish Influenza of 1918, or the H1N1 swine flu in mid-2003 for instance. The SARS outbreak and the Covid-19 outbreak are one of the significant events, taken attention of psychologists from across the world with growing cases of uneasiness and anxiety among people (Huremović, 2019).

In this research paper, an analysis is made on the varying effects on mental health during distinct pandemic and epidemic outbreaks. The paper will be assessing the results based on data available from different works of literature. The study will focus on the effects of the outbreak on infected patients, healthcare practitioners working on the frontline along with effects on

the general public. The outbreaks considered in the research for evaluation include the present Covid-19 pandemic, Spanish Influenza, American Polio Outbreak, H1N1 flu along with SARS outbreak.

## 2. Effects Of Social Isolation

To stop the spread of the disease, government measures include social isolation, which has further imposed a greater impact on the psychological health of people. As suggested by a study, people are prone to experience mental health issues inducing them to commit suicide, get into self-harm practices with substance abuse including child and domestic abuse. However, the author also states that earlier epidemics have also induced a certain impact on mental health with a surge in the feeling of widespread fear, psychological sequelae, and other similar mental conditions to that of COVID-19 (Alradhawi, Shubber, Sheppard and Ali, 2020).

As per an article published in CBSNews, in terms of mental health, two of the groups are highly at the risk. Firstly the people, who are working on the frontline as the healthcare workers and secondly those with existing conditions of mental health. Dr. Joshua Gordon from the National Institute for Mental Health, America interacted with the news channel, he indicated about an incident where a doctor working in the emergency room of a hospital treating various coronavirus patients committed suicide. This signified the severity of the impact on the frontline healthcare practitioners dealing with the deadly pandemic (Segers, 2020).

## 3. Methodology

The methodology employed in the paper is a secondary method, that includes researches, reports, and studies from varied literature over the period. The research papers are from reputed journals like the Asian Journal Of Psychiatry, National Center for Biotechnology Information (NCBI), Psychiatry of Pandemics

published by Springer, and more reputable literature. The data is appropriately used to assess the concerned objective and further draw a conclusion.

## 4. The Impact Of Covid-19 Pandemic On The Mental Health Of Individuals

Covid-19 or the coronavirus was identified in late December 2019, when the Municipal Health Commission of Wuhan announced multiple cases of pneumonia. This severe acute respiratory syndrome was then identified as SARS-CoV-2 by the WHO and was named the coronavirus disease (Petric, 2020).

The pandemic has spread to more than 200 countries in the world in a short span of 6 months after it was identified. Highly affected nations had imposed nation-wide lockdowns to reduce the spread of the disease. This lockdown has been a major cause, that has affected the mental health of people throughout the world. It has rather resulted in growing cases of anxiety disorders and has also found the symptoms of exacerbation among the ones, who are diagnosed with the virus. People are facing anxiety, under circumstances where they observe any symptoms of flu. According to the article, "Impact of COVID-19 pandemic on pre-existing mental health problems" published in the Asian Journal of Psychiatry, COVID-19 has a serious impact on the mental well-being of individuals (Chatterjee and Malathesh, 2020).

### 4.1. Mental Well Being Of Covid-19 Patients

A study published in The Lancet Psychiatry Journal, included 3,550 corona cases to assess the impact of the coronavirus on the mental well being of patients. The study conducted in the University College London further extracted results, that most of the patients are not suffering from any specific mental health conditions.

However, the study further stated that a small evidence has been collected which shows that patients infected with coronavirus are found to

have the possibility of depression, fatigue, anxiety along with PTSD. These symptoms are found to arise in a few weeks of the infection. However, coronavirus infection may affect the psychiatric aspect among patients following the effects on the nervous system, response of the immune system against the virus, and other medical interventions. Other than that, patients have been affected with mental health issues due to social isolation, mental stigma following the possibilities of fatal ailments and other fear to infect other individuals, most probably family (Mental Health Awareness Week: COVID-19 mental health research, 2020).

#### **4.2. Mental Well Being Of Health Care Workers**

Literature-based studies reflect that there are unprecedented challenges to maintain the mental well being of the health workers. Some of the factors which are inducing the concern include enhanced pressure from the society, inadequate supply of safety equipment like PPE kit, and working in an environment, which is full of disparity and stress followed by multiple deaths, creating loneliness and making individuals frightened. A survey from the YouGov, which is an international journal included 996 medical practitioners from the UK in their research for the Institute of Public Policy Research. The survey reflected that 50% of medical practitioners agreed that their mental state has been declined. Out of the lot, 21% of the practitioners stated that they are willing to quit their jobs, after facing the effects of coronavirus outbreak (Alradhawi, Shubber, Sheppard and Ali, 2020).

According to Brooks et al., 2018 in "A Systematic, Thematic Review of Social and Occupational Factors Associated With Psychological Outcomes in Healthcare Employees During an Infectious Disease Outbreak" the level of stigmatization among healthcare workers in comparison to that of from general public is way higher. Also, healthcare workers are more prone to get

rejected from their surroundings in the time of outbreaks following their work. Such stigmatization may accompany distress and depression (Hamouche, 2020).

#### **4.3. Mental Well Being Of General Public**

In terms of the general public, the coronavirus pandemic has put a strain on the relationships. The families get ignited easily, especially due to the confinedness of their living conditions. The chances of child abuse have become certainly higher following the lack of respite from their schools. The family dynamics have been certainly affected, which is resulting in domestic violence (Kam, 2020).

Recent measures like quarantine have imposed a variety of issues related to mental health. The research published in the Asian Journal of Psychiatry, quarantine has observed a surge in the feeling of fear, anxiety, anger, and panic. Also, people who are away from their families are experiencing emotions of loneliness, boredom, and guilt, which has arisen due to the inability to do things for the family. Among the general public, those who are already suffering from existing mental conditions, the psychiatric disorder may lead to suicidal thoughts and increased issues of PTSD (Chatterjee and Malathesh, 2020).

Many of the people suffering from existing mental conditions had a panic reaction to the lockdown, they began to hoard essentials despite being assured by the government about the supplies. People with RDD had risked their normal daily routine by increasing the level of stress and further inducing extensive symptoms of depression, as the levels of cortisol increases. Some more prevalent issues observed include suicidal thoughts and insomnia (Chatterjee and Malathesh, 2020).

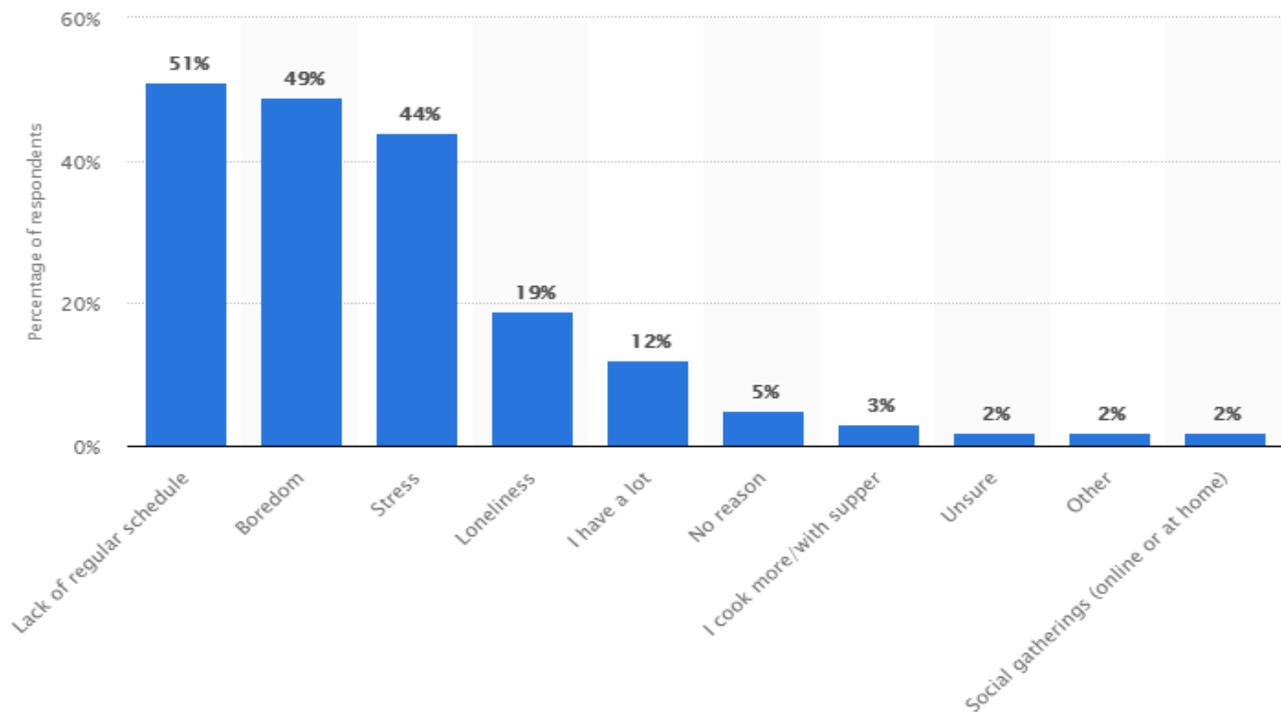
#### **4.4 Surveys & Reports About The Effect Of Covid-19 Pandemic On Mental Health**

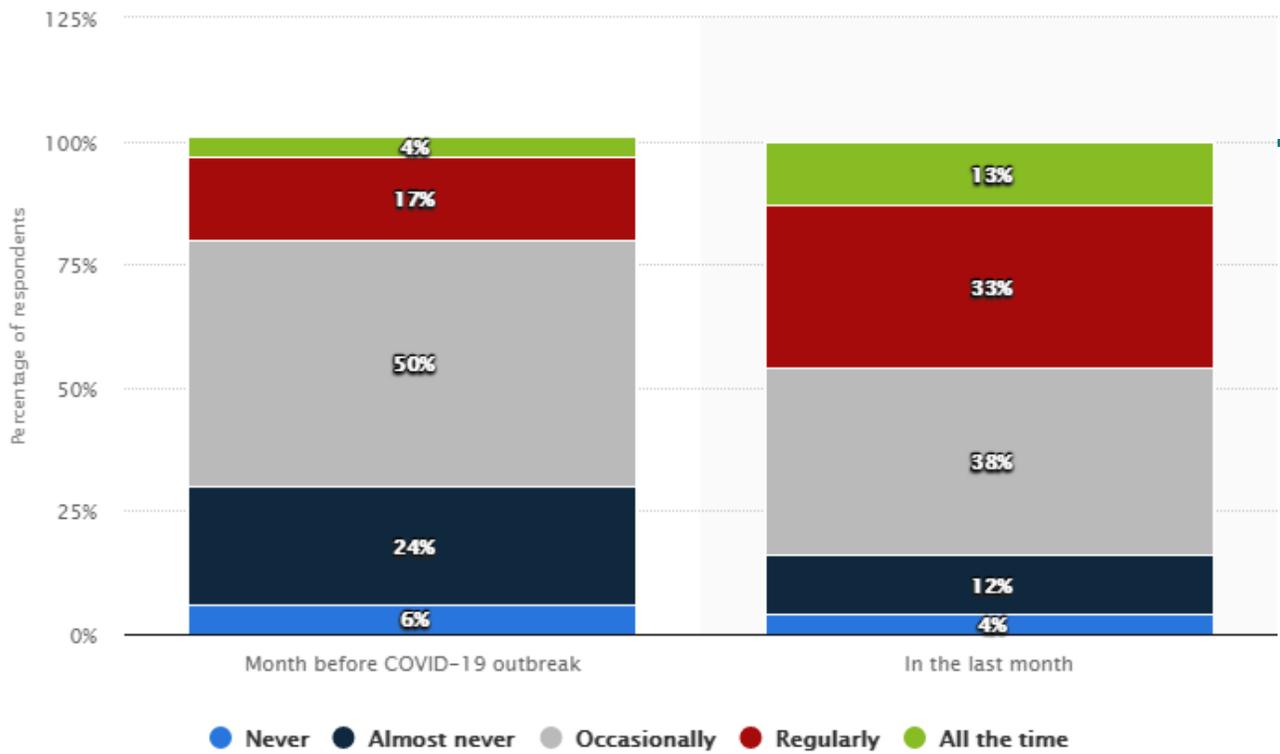
A Kaiser family poll has reflected that 56% of Americans have reported issues regarding

insecurities and stress, which is further imposing a negative impact on mental health. People in the pool have reported facing trouble with sleeping and drinking issues causing headaches, stomachaches, becoming furious easily and more health issues. A survey regarding health care workers along with their families stated that 64% of frontline workers indicated that pandemic is imposing an adverse effect on mental health. Also, the report suggested 65% of participants believe pandemic has worsened their mental health conditions due to unemployment and the

accompanying recession(Kam, 2020).

According to a report by Statista 2020, there is an increase in the consumption of alcohol among Canadians during the period of Covid-19 lockdown. The reason behind increased consumption reflects the impact on mental health during coronavirus lockdown. Around 51% of people believe the reason for their increased alcohol consumption is due to the irregularity of their schedule and 44% believe stress is the reason (Statista, 2020).





Another report by Statista included a comparison of stress levels among Canadian participants. The comparison is led out within a month before coronavirus and the last month, which according to the current period is May. The participants stated that they used to feel occasional stress before coronavirus, however, after the pandemic, the stress level was regular (Statista, 2020).

These statistics show that coronavirus has certainly affected the mental well being of individuals and has imposed the threats of deteriorating conditions.

### 5. Effect Of Spanish Influenza On Mental Health Of Individuals

The Spanish flue or Spanish influenza occurred in the initial decades of the 20<sup>th</sup> century. It is considered the very first global pandemic, that ever happened in the establishment of modern medicine including specialties like the study of epidemiology and other infectious studies. These studies were further helpful in identifying and recognizing the nature of the disease as the pandemic set to expand. The pandemic had catastrophic consequences across

the globe (Huremović, 2019).

#### 5.1. Effects On Patient's Mental Health

Most of the literature reflected the other aspects of the pandemic rather than mental health. However, some research has been done on the long term impact of Spanish flu on mental well being. A historical demographer named Sverre Erik Mamelund investigated the concerns over effects on mental well being. He assessed Norway's Asylum hospitalizations between the period 1872 and 1929. In his study, he found out that various patients, who were admitted for the first time with mental disorders have been allocated to influenza. His research stated that the average yearly factor is increased by 7.2 in the continuing 6 years after the pandemic. Besides, he indicated the symptoms of deteriorated mental wellbeing among the flu survivors. His study points out that survivors are found to suffer dizziness, depression, mental distraction, and other constraints in the work-life. Also, the death rate in the pandemic years between 1918 and 1920 were substantially related to suicides as well.

Along with Mamelund, many other scholars have also pointed out the link between neurological diseases and Spanish flu. Other than Mamelund, some of the researchers from Great Britain had pointed out the links between

the Spanish influenza infection and increased nervous symptoms including neuropathy, depression, meningitis, and a potential decline in the eyesight (Eghigian, 2020).

Considering the period of the research, influenza had caused delirium along with violence, agitation, fear, and erotic hype. Often symptoms are depressive, concerning the persecution threat. Other than patients of influenza, a researcher called Menninger had developed a hypothesis in 1926. His hypothesis stated that pregnant women, who suffered from influenza are expected to have children that later faced schizophrenia (Soreff, 2008).

## **5.2 Impact On General Public & Health Care Workers**

An article published in the Psychiatric Times stated that the historical records reflect that the pandemic was followed by the succession of war I. This phase further imposed effects like emotional resilience, on those who were not harmed. People were rather have been affected by the grief and sorrow of helplessness and anxiety. In terms of surviving healthcare workers, they were found to be affected by the after-effects of the pandemic and the war that created a sense of sorrow, frustration, and depression for a long period(Eghigian, 2020).

## **6. Effect Of American Polio Epidemic On Mental Health of Individuals**

In the case of the American Polio epidemic, there was less of the mental health impact of the epidemic on the general public. However, the studies made about mental health during the period did significantly involved the psychological trauma faced by the children as well as the aged patients of the disease. With a major impact on the 1940s & 50s, the studies made on the Polio epidemic directly reflected that the effects of the disease on patients did have psychological effects. The disease moreover is connected with brain lesions and nervous system, which further impacts mental

health.

Although, researchers did agree that few unusual observations in the behavior were commonly found in the patients of encephalitis, which had been sparked in the acute phase. A researcher called Edith Mayer identified that children suffering from encephalitic involvement had shown qualitative deficits in their brain functions. These include fatigue, fleeting attention, and most importantly irritability. Other than this, various researches done on the psychological impact of the American Polio epidemic on patients resulted in that the cause of effects is the psychiatric aspects of the disease. It's moreover the helplessness that promoted the depression and anxiety among polio patients, especially at the beginning of the discovery of the disease (Wilson, 2008).

## **7. Effect Of H1N1 Swine Flu Pandemic On Mental Health of Individuals**

The H1N1 flu pandemic occurred in 2009 and is certainly considered this flu as the reprise version of Spanish influenza, however, it had comparatively less damaged the society. The virus was a mixture of swine, bird, and human flu virus, which is why it is called the swine flu popularly. Begun in 2009, May, the flu had reached to its demise by May 2010. The pandemic had some of the valuable data for assessing the impact of a pandemic on the mental health of individuals(Huremović, 2019).

### **7.1. Impact On Patients**

A study conducted by Luyt et al., 2012 included french patients of the H1N1 flu pandemic. These patients were treated in ICU to cure ARDS caused by the H1N1 virus. The one-year-long response stated that many of the patients had anxiety along with signs of depression as measured on the scale of impact. Various other studies have already linked

ARDS with growing symptoms of PTSD, depression, and anxiety. Nature is also quite severe following the morbidity & threatening situations. The study also reflected that in some cases, patients were found to undergo PTSD due to the trauma of ICU (Luyt et al., 2012).

## 7.2. Impact On Healthcare Workers

The impact of H1N1 flu on healthcare workers can be assessed by a study made in Japan after the pandemic left the Kobe city. Kunitaka Matsuishi with her team investigated the psychological impact of the H1N1 Flu pandemic on the healthcare workers of three prime hospitals in Kobe. The questions were based on topics like anxiety due to infection, workload stress, exhaustion, and a sense of protection. Around 1625 respondents gave their answers. Out of these respondents, the ones working in the hospital having services related to liaison psychiatry had less effect on their mental health. On the other hand, people working in a hospital, where medical practitioners were not regularly updated with the pandemic information had a sense of insecurity. Healthcare workers in the infection-prone areas were found to be more anxious and used to feel more exhausted. The study reflected that people in the high-risk areas were prone to get adversely affected on the psychological aspect (Matsuishi et al., 2012).

## 7.3. General Public

A cross-sectional study was then done by Robin Goodwin and his team to assess the initial behavior and responses in terms of attitude among people against the disease. The samples included 328 respondents from Malaysia and Europe, who were randomly selected. The collected data reflected that many of the respondents were confident and showed their control over the infection. In the study, European respondents were identified to be relaxed and alert regarding taking measures like washing hands and avoiding visits to crowded areas. However, Malaysian respondents did show their anxiety towards the pandemic,

despite the lower number of cases in the country. The study stated that Malaysians carried out anxious behavior and did advance purchases of masks and other preparations. On the other hand, European respondents were likely to share the threat alerts with their friends and family through discussion (Goodwin, Haque, Neto and Myers, 2019).

Other than this research, a study published in the Public Health Reviews by Steven S. Coughlin, several population surveys conducted in various countries have analyzed the behavioral changes in the general public during the 2009-10 H1N1 outbreak. These surveys were based on assessing the state of anxiety, to acquire data linked with the communication of health risk, and to check the adoption of measures to stop the spread of the virus. The state anxiety possibly had a beneficial impact as people were found practicing measures that would be preventive against the disease (Coughlin, 2012).

## 8. Impact Of SARS On Mental Health

The outbreak of severe acute respiratory syndrome took place in 2003 and it had been the very first epidemic to assess the psychological aspect of the disease. It was certainly the very first infectious disease in the 21<sup>st</sup> century (Sim and Chua, 2004). The SARS outbreak enhanced the researches made in the spectrum to understand the effect of acute infectious disease on the infected patients and other communities like healthcare providers and the general public (Huremović, 2019).

### 8.1. Effects On Patients

A study published in the Canadian Journal of Psychiatry included a study in which a group of SARS patients was taken into consideration. The group included 79 respondents, who were assessed on the Perceived Stress Scale through

their psychological responses acquired on the peak of the outbreak. The study reflected that stress level among SARS patients was relatively higher, and imposed negative mental health or psychological effects. However, the study also had 39% of patients, who were infected health workers. The studies showed that the impact on the psychology of health workers was certainly higher than that of others. These workers showed a higher percentage of worry and fatigue. The increased stress enhances the possibilities for patients to encounter stress and mood disorders. Other than that, the study also reflected that functional disability has also been found in the post-recovery phase (Chua et al., 2004).

## 8.2. Effects on Healthcare Workers

During the outbreak of Severe Acute Respiratory Syndrome, approximately 18% to 57% of healthcare workers faced major emotional issues along with psychological symptoms (Ornell, Halpern, Kessler and Narvaez, 2020). A study published in the Psychiatry and Clinical Neurosciences Journal by Folia Publishing Society assessed the psychological impact of the SARS outbreak in Taiwan. The survey included in the research acquired results where two-thirds of the staff reported major psychiatric stress regarding the concerns of their family's health along with emotional distress (Ko, Yen, Yen and Yang, 2006). Other studies included SARS in Taiwan by Dr. Mian-Yoon Chong, Chang Gung Memorial Hospital, Kaohsiung, Taiwan: personal communication, 2004, stated that 75% of healthcare workers were found to undergo psychiatric morbidity. Not many studies and researches have been made to analyze the psychological effect of SARS outbreak on the general public (Ko, Yen, Yen and Yang, 2006). However, people had been observed taking measures and further preventing the spread of SARS disease.

## Result & Discussion

Following the mental health conditions, a substantial epidemic reflects a mental disturbance, which may exaggerate the capacity of affected individuals to tackle the situation. The major impacts emphasize on stress and anxiety among the entire population. Hence, pandemics are likely to impose threats of mental disorder on patients, healthcare workers, and the general public.

<b>Impact Of Major Epidemics &amp; Pandemics On Mental Health Of Individuals</b>			
<b>Pandemic/Epidemic</b>	<b>Study</b>	<b>Authors</b>	<b>Findings</b>
id-19/ Coronavirus	Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic	Jonathan P Rogers, Edward Chesney, Dominic Oliver, Thomas A Pollak, Prof. Philip McGuire, Paolo Fusar-Poli, et al.	The study aimed at assessing the psychiatric and neuropsychiatric impacts of novel coronavirus infection on its patients. The findings concluded that the disease however does not impose the mental implications of the disorder, yet the stress and anxiety are observed following the psychiatric aspects of the disease.
	COVID-19 and employees' mental health: stressors, moderators and agenda for organizational actions	Salima Hamouche	The study done to examine the impact of COVID-19 reflected that employees including healthcare workers are getting a negative impact on individuals' mental well being.
	Impact of COVID-19 pandemic on pre-existing mental health problems	Seshadri Sekhar Chatterjee  Barikar Malathesh	The article published in the Asian Journal Of Psychiatry reflected a rise in depressive feelings among the general public followed by lockdown and quarantine.
<b>Spanish Influenza</b>	Historical Influenza Pandemics: Lessons Learned Meeting and Workshop	Svenn-Erik Mamelund	In his study, Mamelund observed a surge in mental health disorders among people after the pandemic.
<b>Polio Epidemic</b>	Psychological Trauma and Its Treatment in the Polio Epidemics	Daniel J. Wilson	In the research paper, the author has assessed the types of trauma faced by Polio patients during the mid 20 <sup>th</sup> century in America. The studies reflected that psychological effects among the polio patients were mild and were due to

			the helplessness.
<b>H1N1 Flu</b>	Long-term Outcomes of Pandemic 2009 Influenza A(H1N1)-associated Severe ARDS	Charles-Edouard Luyt and his team	The one year later ICU discharged patients of H1N1 virus associated ARDS patients were observed to have symptoms of anxiety and depression along with PTSD.
	The psychological impact of the pandemic (H1N1) 2009 on general hospital workers in Kobe	Kunitaka Matsuishi and her team	The study aimed at assessing the psychological impact of the H1N1 pandemic on hospital workers of Kobe. The study reflected that workers with more information about the pandemic were less worried as compared to those having less information and working in risk-prone areas of getting infected.
	Initial psychological responses to Influenza A, H1N1 ("Swine flu")	Robin Goodwin, Shamsul Haque, Felix Neto and Lynn B Myers	These cross-sectional studies assessed the behavior responses of people across Europe and Malaysia towards the pandemic. The research reflected that people Malaysian people were hyped about the pandemic, which caused anxiety, however, it also inclined them towards taking preventive measures.
<b>SARS</b>	Stress and Psychological Impact on SARS Patients During the Outbreak	Siew E Chua, Vinci Cheung, and his team	The study researched SARS patients to examine their stress levels. The study showed that among all the infected patients, the health workers were likely to undergo more stress.
	Psychosocial impact among	Chih-Hung	The research was done to

	the public of the severe acute respiratory syndrome epidemic in Taiwan	Ko, Cheng-Fang Yen, Ju-Yu Yen, Ming-Jen Yang	assess the psychological effects on the healthcare workers in SARS. The results concluded that 2/3 <sup>rd</sup> of the staff suffered from psychiatric stress.
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In terms of the psychological effects of pandemics and epidemics on the individuals, there are reports, researches, studies, and surveys that positively confirm the adverse effects of these pandemics over an individual's mental health. Most of the literature were acquired, assessed the impact on health workers and patients. A little research was found in studies about the impact on the general public. However, the case of coronavirus or Covid-19 has put a nation-wide lockdown which has eventually increased the concerns over the mental health of the general public. The study ind.

showed that people are prone to get anxiety and depression following a confined lifestyle mixed with boredom. In prior pandemics like Spanish Influenza, the studies over mental health were limited following the course of limited innovation about mental health in the concerned period. Also, other pandemics have shown that health workers are like to get mentally affected following the exhaustion and threat to get infected. As for present conditions, WHO and other international health organizations recommend to take measures and preserve mental health and carry out practices to continue peace in m