

Original Research Article

Examining the Post Covid-19 Emotional, Cognitive and Behavioral Effects among Covid-19 Survivors in Pakistan

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Abstract

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The current study was conducted in Pakistan from April 2020 to June 2021. During this study we collected 90 samples that were collected in Pakistan. We used online method for our questionnaires using Google forms, and some data were collected in simple face to face manner. The result of this study represents that most of the covid-19 survivors feel weakness and depression after surpassing this viral disease. This study are mostly prevalence in above 60 years and below 5 year. Which need proper intervention in promoting awareness and campaigning. Research questionnaire in this research was to study nurse perception about examining the post covid-19 patient emotional, cognitive and behavioral effects among Covid-19 survivors in Pakistan. The aim was to study the post emotional, cognitive and behavioral effects of covid-19 survivors. To discover different cultural perception regarding this disease and their holistic management. To examine the conflict regarding the disease existence. This study is a quantitative research using a cross-sectional descriptive design. It means that the study conducted and reported in this research is a onetime picture of the phenomenon. The population in this study will be the adult Covid survivors with an age range of 18 to 60 years who has been diagnosed with COVID-19 and has survived through it. A purposive sampling technique has been used in this study. A total of 90 participants has been enrolled based on the need for data collection using Likert scale 5 point scale. For collecting the data, five point Likert scale questionnaire was designed according to the objectives of the study. The questionnaire included questions related to cognitive, emotional and behavioral aspects of the Covid survivors. Additionally, it will also explore the different cultural perception and their holistic management. The questionnaire has been reviewed by the group supervisor, and after approval, it was developed into a digital form using Google form applications.

Keywords: Covid-19, Quantitative research, Sampling technique, Viral disease

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is defined as illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2;

formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the

World Health Organization (WHO) on December 31, 2019. On January 30, 2020 the WHO declared the COVID-19 outbreak a global health emergency, on March 11, 2020 the WHO declared COVID-19 a global pandemic, its first such designation since declaring H1N1 influenza a pandemic in 2009.

Illness caused by SARS-CoV-2 was termed COVID-19 by the WHO, the acronym derived from the coronavirus disease 2019. The name was chosen to avoid stigmatizing the virus origin in terms of populations, geography, or animal association.

Sign and symptoms

Symptoms of COVID-19 are variable, but often include fever, cough, headache, fatigue, breathing difficulties, and loss of smell and taste. Symptoms may begin one to fourteen days after exposure to the virus. At least a third of people who are infected do not develop noticeable symptoms. Or those people who develop noticeable symptoms enough to be classed as patients, most (81%) develop mild to moderate symptoms (up to mild pneumonia), while 14% develop severe symptoms (dyspnea, hypoxia, or more than 50% lung involvement on imaging), and 5% suffer critical symptom (respiratory failure, shock or multiorgan dysfunction). Older people are at a higher risk of developing severe symptoms. Some people continue to experience a range of effect (long COVID) for months after recovery, and damage to organs has been observed. Multi-year studies are underway to further investigate the long-term effects of the disease.

Mode of transmission

Transmission of COVID-19 occurs when people are exposed to virus-containing respiratory droplets and airborne particles exhaled by an infected person. Those particles may be inhaled or may reach the mouth, nose, or eyes of a person through touching or direct deposition (i.e. being coughed on). The risk of infection is highest when people are in close proximity for a long time, but particles can be inhaled over longer distances, particularly indoors in poorly ventilated and crowded spaces. In those conditions small particles can remain suspended in the air for minutes to hours. Touching a contaminated surface or object may lead to infection although this does not contribute substantially to transmission. People who are infected can transmit the virus to another person up to two days before they themselves show symptoms, as can people who do not experience symptoms. People remain infectious for up to ten days after the onset of symptoms in moderate cases and up to twenty days in severe cases.

Testing Methods

Several testing methods have been developed to diagnose the disease. The standard diagnostic method is by detection of the virus nucleic acid by real-time reverse transcription polymerase chain reaction (rRT-PCR) transcription-mediated amplification (TMA), or by reverse transcription loop-mediated isothermal amplification (RT-LAMP) from a nasopharyngeal swab.

Preventive Measures

Preventive measures include physical or social distancing, quarantining, and ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face. The use of face mask or covering has been recommended in public setting to minimize the risk of transmission. Several vaccines has been developed and many countries have initiated mass vaccination campaigns.

Although work is underway to develop drugs that inhibit the virus, the primary treatment is symptomatic. Management involves the treatment of symptoms, supportive care, isolation, and experimental measures.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel severe acute respiratory syndrome coronavirus. It was first isolated from three people with pneumonia connected to the cluster of acute respiratory illness cases in Wuhan. All structural features of the novel SARS-CoV-2 virus particle occur in related coronaviruses in nature.

Disease manifestation

Outside the human body, the virus is destroyed by household soap, which bursts its protective bubble. COVID-19 can affect the upper respiratory tract (sinuses, nose and throat) and the lower respiratory tract (windpipe and lungs). The lungs are the organs most affected by COVID-19 because the virus accesses host cells via the receptors for the enzyme angiotensin-converting enzyme 2 (ACE2), which is most abundant on the surface of type II alveolar cells of the lungs. The virus uses a special surface glycoprotein called a spike (peplomer) to connect to the ACE2 receptor and enter the host cell.

Whether SARS-CoV-2 is able to invade the nervous system remains unknown however it is clear that many people with COVID-19 exhibit neurological or mental health issues. The virus is not detected in the CNS of the majority of COVID-19 people with neurological issues. However, SARS-CoV-2 has been detected at low levels in the brain of those who have died from COVID-19, but these results need to be confirmed. Loss of smell results from infection of the support cells of the olfactory

epithelium, with subsequent damage to the olfactory neurons.

The virus also affects gastrointestinal organs as ACE2 is abundantly expressed in the glandular cells of gastric, duodenal and rectal epithelium as well as endothelial cells and enterocytes of the small intestine.

The virus can cause acute myocardial injury and chronic damage to the cardiovascular system. An acute cardiac injury was found in 12% of infected people admitted to the hospital in Wuhan, China, and is more frequent in severe diseases. Rates of cardiovascular symptoms are high, owing to the systemic inflammatory response and immune system disorders during disease progression, but acute myocardial injuries may also be related to ACE2 receptors in the heart.

Several notable variants of SARS-CoV-2 emerged in late 2020 cluster 5 emerged among minks and mink farmers in Denmark. After strict quarantines and a min euthanasia campaign, it is believed to have been eradicated.

AIMS OF THE STUDY

To study the post emotional, cognitive and behavioral effects of covid-19 survivors. To discover different cultural perception regarding this disease and their holistic management. To examine the conflict regarding the disease existence.

DESIGN AND METHODOLOGY

This is a quantitative research using a cross sectional descriptive design with online Google form questionnaire to survey considering the post Covid 19 emotional, cognitive and behavioral effect among Covid 19 survivors. We used a snowball sampling method also known as chain-referral method in which existing participants provide referrals to recruit participants required for a research study.

Study Area

Our study area was Pakistan, and collect data from different area of Pakistan such as Punjabi, Baloch, phattan, and sundi also form Muslim and non Muslim and from very cool and hot aera are also used.

Study Period

Cross sectional study was performed from 5 April to 5 June 2021.

Literature Review

Similar researches were done on examining the psychological effects during the start of the pandemic and after the world started understanding, managing it through supportive medication, maintaining the SOP S.

Related work has been done by Institute of Psychology, Chinese Academy of Sciences, Beijing, China. Department of Psychology, University of Chinese Academy of Sciences, Beijing, China and Department of Psychology, Nakao University, Tianjin, China during the early outbreak of the Covid.

They sample and analyze the Weibo posts from 17,865 active Weibo users using the approach of Online Ecological Recognition (OER) based on several machine-learning predictive models. They calculated word frequency, scores of emotional indicators (e.g., anxiety, depression, indignation, and Oxford happiness) and cognitive indicators (e.g., social risk judgment and life satisfaction) from the collected data. The sentiment analysis and the paired sample t-test were performed to examine the differences in the same group before and after the declaration of COVID-19 on 20 January, 2020. The results showed that negative emotions (e.g., anxiety, depression and indignation) and sensitivity to social risks increased.

Another research has been done in the United Kingdom regarding loneliness in the UK during covid-19. Their study employed a cross-sectional online survey design. Baseline data collected between March 23rd and April 24th 2020 from UK adults in the COVID-19 Psychological Wellbeing Study were analyzed (N = 1964, 18 87 years, M = 37.11, SD = 12.86, 70% female). Logistic regression analysis examined the influence of sociodemographic, social, health and COVID-19 specific factors on loneliness.

Their results showed the prevalence of loneliness was 27% (530/1964). Risk factors for loneliness on younger age group (OR: 4.67 5.31), being separated or divorced (OR: 2.29), scores meeting clinical criteria for depression (OR: 1.74), greater emotion regulation difficulties (OR: 1.04), and poor quality sleep due to the COVID-19 crisis (OR: 1.30). Higher levels of social support (OR: 0.92), being married/co-habiting (OR: 0.35) and living with a greater number of adults (OR: 0.87) were protective factors.

Another study was done by China regarding the longitudinal study on mental health of general population during the Covid-19. Their study comprises a longitudinal study surveyed the general population twice - during the initial outbreak, and the epidemic's peak four weeks later, surveying demographics, symptoms, knowledge, concerns, and precautionary measures against COVID-19. There were 1738 respondents from 190 Chinese cities (1210 first-survey respondents, 861 s-survey respondents; 333 respondents participated in both).

Psychological impact and mental health status were assessed by the Impact of Event Scale-Revised (IES-R) and the Depression, Anxiety and Stress Scale (DASS-21), respectively. IES-R measures PTSD symptoms in survivorship after an event. DASS -21 is based on tripartite model of psychopathology that comprise a general distress construct with distinct characteristics. This study found that there was a statistically significant longitudinal reduction in mean IES-R scores (from 32.98 to 30.76, $p < 0.01$) after 4 weeks. Nevertheless, the mean IES-R score of the first- and second-survey respondents were above the cut-off scores (>24) for PTSD symptoms, suggesting that the reduction in scores was not clinically significant. During the initial evaluation, moderate-to-severe stress, anxiety and depression were noted in 8.1%, 28.8% and 16.5%, respectively and there were no significant longitudinal changes in stress, anxiety and depression levels ($p > 0.05$).

Another study was conducted in Italy after china by this research is Healthy elderly, mild cognitive impairment and Alzheimer s disease populations have been among the most affected in the early stages of the COVID-19 pandemic due to the direct effects of the virus, and numerous indirect effects now emerge and will have to be carefully assessed over time .

In Italy, which was one of the countries affected earlier and most impacted by the pandemic after China and where epidemiological data are available for a longer period of time, it has been described that COVID-19 lethality was less than 2.8% for people under 60 years, rose to 10.6% in the 60-69 age group, 26% in the 70-79 age group, and 32.8% in the 80-year-old group. Within the frame of the more than 36,000 people who died in Italy due to COVID-19, about 20% were between 70 and 79 and about 65% over 60 years of age. The vast majority of them were defined fragile elderly subjects, namely, suffering from 2 or more chronic major diseases on top of which COVID-19 impacted as a final push to death.

Another study was conducted in Lebanon among the undergraduate university students during covid 19 who experienced psychological distress in self quarantine days. Although essential during contagious outbreaks, has been correlated with poor psychological outcomes in the general population. Such outcomes include low mood, suicide, and post-traumatic stress symptoms. Studies have mostly looked at the mental health of general citizens, healthcare workers, or infected survivors, with limited research targeting university students. This study aimed to understand the psychological distress experienced by self-quarantined undergraduate university students in Lebanon during the COVID-19 outbreak.

75.3% of the participants were considered as having a high risk of developing acute stress. Undergoing quarantine for more than 14 days, having a chronic medical illness, inadequate access to supplies, and fear

of infection were all significantly associated with an increased risk of acute stress.

Another was conducted among 48 countries related to stress and worry on 2020 Covid pandemic The COVID STRESS global survey collects data on early human responses to the 2020 COVID-19 pandemic from 173 429 respondents in 48 countries. The open science study was co-designed by an international consortium of researchers to investigate how psychological responses differ across countries and cultures, and how this has impacted behavior, coping and trust in government efforts to slow the spread of the virus. Starting in March 2020, COVID STRESS leveraged the convenience of unpaid online recruitment to generate public data. The objective of the present analysis is to understand relationships between psychological responses in the early months of global coronavirus restrictions and help understand how different government measures succeed or fail in changing public behavior. There were variations between and within countries.

The final dataset consisted of 116 356 participants from 48 countries with the mean age of 39.4 (s.d. = 14.1), 84 942 (73.00%) of participants identified as female, 29 869 (25.51%) as male, and 1283 (1.10%) provided other responses or declined to respond. For detailed demographic statistics, see electronic supplementary material, (electronic supplementary material, table S1).

Another online study was conducted to study the impact of covid 19 pandemic at regional and worldwide level on the mental health of individuals who anonymously screened 13,332 individuals worldwide for acute psychological symptoms related to Corona virus disease 2019 (COVID-19) pandemic from March 29th to April 14th, 2020. A total of $n=12,817$ responses were considered valid. $n=1077$ participants from Europe were screened a second time during May 15th to May 30th to longitudinally ascertain the persistence of psychological effects

Methods

Setting

This Study was conducted in Royal college of Nursing Swat Pakistan.

DESIGN AND METHODOLOGY

This is a quantitative research using a cross sectional descriptive design with online Google form questionnaire to survey considering the post Covid 19 emotional, cognitive and behavioral effect among Covid 19 survivors. We used a snowball sampling method also known as chain-referral method in which existing

participants provide referrals to recruit participants required for a research study.

Population, sample size and sampling method

The population in this study will be the adult Covid survivors with an age range of 18 to 60 years who has been diagnosed with COVID-19 and has survived through it. A purposive sampling technique has been used in this study. A total of 90 participants has been enrolled based on the need for data collection using Likert scale 5 point scale.

Inclusion and exclusion criteria

In this study, those participants having age between 18 to 60 years, both genders, diagnosed with covid-19 after March 2020, and a permanent resident of Pakistan has been enrolled in this study.

The participants who do not meet the inclusion criteria or had any documented mental illness were excluded from study.

Data collection instrument

For collecting the data, and five point Likert scale questionnaire was designed according to the objectives of the study. The questionnaire included questions related to cognitive, emotional and behavioral aspects of the Covid survivors. Additionally, it will also explore the different cultural perception and their holistic management.

The questionnaire has been reviewed by the group supervisor, and after approval, it was developed into a digital form using google form applications.

Ethical Consideration

The central committee on Research involving human subjects in the Netherlands does not require approval from an ethical review committee for non-medical survey research, therefore this survey was exempt from ethical review.

Mental health research including self-harm and suicide, is a vital part of the response to the pandemic, but we are concerned about the ethical robustness of some studies already recruiting. We have seen studies that does not provide sufficient information to enable full informed consent, do not measure mood before or the participation, do not potentially signposting other than potentially anxiety provoking messages about COVID-19 and do not attempt any kind of mood mitigation or debrief to help stabilize anyone that does not become distressed

after participation. We would recommend that researchers be mindful that general research into impacts of COVID-19. For new work evaluating COVID-19 and mental health impacts, patients and public environment must be central for prioritizing and designing research studies. The survey data kept strictly confidential by encrypting and storing them in one personal computer. This study conformed to the guidelines of the 1995 declaration of Helsinki (and its revised edition from 2000).

Data Analysis

In this study, a series of questions were asked on Likert scale and was drawn in the form of a pie chart in which we will explore the challenges that were faced by Covid-19 survivors. In this study, we will not be asking any personal information or anything that challenges persons integrity while keeping in mind Helsinki ethical principles.

RESULT

All studies applied quantitative cross sectional research designs. As expected, due to COVID 19 restrictions , in most studies (n= 90) data were collected online , inviting participants to fill in the form questionnaires through dedicated survey platforms (n= 50) social media platforms (n= 10), emails or text message (n=10), open access forms (n=15) and relevant or networks (n=1) , while in two studies the data collection procedure was not clearly reported

Data were collected between 5 APRIL to June 2021 and, while one study did not report exact dates of data collection but only duration. Studies applied using convenience sampling one study applied cluster sampling one study recruited students aged 25 30 years old across in Pakistan study is applied snowball sampling.

Over all, the findings of the included studies suggested that COVID -19 emotional reactions and new social regulations (e.g., social distancing) were associated with a number of negative mental health outcomes in young people. For example , one study [35] found that primary school students reported COVID -19 as a life and health threatening disease , which positively predicated somatic and anxiety (but not depression) symptoms in young people during the pandemic , interestingly another study showed that fear of COVID 19 significantly predicated depressive , anxiety , and OCD symptoms in adolescents [33]. This study applied sophisticated analysis, in order to gain insight on more complex mechanisms underpinning the impact of COVID-19 fear on mental health outcomes.

The findings indicate that COVID -19 related fear associated with negative emotional reactivity may predict depression, anxiety and OCD symptoms in adolescents. Furthermore, it was indicated that anxiety related to

expecting challenging circumstances due to COVID-19 pandemic may trigger OCD symptoms. Another study [39] found that worry about being effected by COVID-19 was positively.

DISCUSSION

The purpose of our study began when we started thinking that this disease not only effect the physical health of the individual but also have a major impact on persons mental health, especially emotions and cognition. Therefore, our interest began to arise on examining the post emotional, cognitive and behavioral effect among the Covid survivors.

Based on their average scores, participants reported a moderate level of stress, depression, and anxiety. Acceptance and self-distraction were found to be the most frequent coping strategies among participants, indicating that participants had a tendency to cope with COVID-19 by accepting its presence and distracting themselves with other activities. Whereas physical symptoms like fever, breathing difficulty, loss of smell and taste or sensation of vomiting were found a rare concern among the participant. But if we focus our concern on common problems like disturbed sleep cycle or having social phobia, or having social isolation in adults which in terms to present higher risk of depression or hopelessness, the respondents showed agreement to those questions. Pakistan being the 3rd world country, and with COVID poverty increased drastically, respondents were seen showing a green flag on that. And half the participant respondents agreed that people in Pakistan still believe that this disease does not exist.

This was a quantitative research using a cross sectional design with online google form questionnaire to survey the mental level of the individual. The study area of our research was different aera of Pakistan . This cross-sectional study was performed from 5 April to 5 June 2021. Participants were 50 adults aging from 25 to 50 respectively. In questionnaire the participants were asked to rate their mental health and emotions after covid recovery using a Likert Scale and the result came in the form pie chart. In this study we didn t asked any personal information, or any question that can challenged the person s integrity. Identity of the participant were kept strictly confidential and no ethical code were broken during this study.

Since World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30 January 2020, and a pandemic on 11 March 2020. The world faced global crisis, whereas civilian were asked to stay in complete isolation. This viral disease came and showed a threat to the mankind. Government and businesses from all over the world faced an economic crisis. But slowly and gradually scientist and researchers from all over the world began to

understand this disease transmission and gave civilian some preventive measure to reduce the chances of infection which included staying at home, wearing a mask in public, avoid going to crowded places, keeping distances from others.

It also indicated that people begin to care more about their health and were more likely to seek social support from their families rather than getting together with friends, which suggested that people interests and attention were influenced by the restricted travel policy and self-isolation regulations from the health authorities and federal government. Affected by COVID-19, messages related to death and religion became salient after 20 January. Reports showed severity and potential mortality of COVID-19. Research confirmed that people tended to respond to emergencies such as stress or death in the way of religion, which can comfort tense moods and bring more positive emotions.

Similar to our exploration, China did a research during the initial outbreak of COVID-19 as it was firstly originated from China so they were the first one to act promptly. Their study was to explore the impacts of COVID-19 on people mental health, to assist policy maker to develop actionable policies, and help clinical practitioners (e.g., social workers, psychiatrists, and psychologists) provide timely services to affected populations. They collected their sample and analyze the Weibo posts from 17,865 active Weibo user using the approach of Online Ecological Recognition (OER) based on several machine-learning predictive models. They calculated word frequency, scores of emotional indicators (e.g., anxiety, depression, indignation, and Oxford happiness) and cognitive indicators (e.g., social risk judgment and life satisfaction) from the collected data. The sentiment analysis and the paired sample t-test were performed to examine the differences in the same group before and after the declaration of COVID-19 on 20 January, 2020. The results showed that negative emotions (e.g., anxiety, depression and indignation) and sensitivity to social risks increased, while the scores of positive emotions (e.g., Oxford happiness) and life satisfaction decreased. People were concerned more about their health and family, while less about leisure and friends. The results contribute to the knowledge gaps of short-term individual changes in psychological conditions after the outbreak. It may provide references for policy makers to plan and fight against COVID-19 effectively by improving stability of popular feelings and urgently prepare clinical practitioners to deliver corresponding therapy foundations for the risk groups and affected people..

LIMITATIONS

As the information was gathered from just a single setting, it has restricted generalizability.

Convenient sampling was applied in data collection process whereas the probability sampling method can enhance the induction of different strata of the participants.

The study was limited to assess perception of Pakistan Nursing students on factors motivation to learn.

CONCLUSION

In this study, we explored psychological changes after a patient surpassed COVID-19 successfully. During our study we saw that a moderate increase in negative emotion (depression, anxiety and indignation) and sensitivity towards social risks, as well as decrease in positive emotions like happiness. Younger adults were found having difficulty living in total isolation. So the question here is what we have learned over here and what can we do to improve our way of life. If someone is having a psychological issues he/she should address their problem so they can be treated professionally and that goes for physical problems as well. The positive aspect of this outbreak was that human gratitude towards one's life increased because nobody wants to lose their life. If we look at the bigger picture over here, people showed more concern towards their health and family, and less concern for leisure and friends. Such researches may provide timely understanding of the public health emergencies on the public's mental health during the epidemic period.

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