EVALUATION OF LONG TERM SEQUELAE OF COVID-19 AMONG SURVIVORS AND THEIR PERCEPTION ABOUT THE DISEASE

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ABSTRACT

The study was conducted to evaluate the emotional, cognitive and behavioral effects among COVID 19 survivors. The data was collected from April 2020 to June 2021. Simple face to face and online data collection methods were employed, a questionnaire using likart type questions was used. For data collection, 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-19 survivors. Additionally, it also explored the perceptions of the participants about the disease. A total of 90 participants were recruited in this study. All these had confirmed diagnosis of COVID 19 on Polymerase Chain Reaction (PCR) positive on nasal swab. The findings of this study indicate that most of the covid-19 survivors feel weakness, and depression after recovering from this viral disease. A considerable number of COVID 19 survivors experienced loss taste and smell for a prolonged period. According to their perception social gatherings were responsible for spread of the disease thus they strongly agreed upon lockdown strategy adopted in many countries.

Key Words: Post-COVID cognitive disorder, emotional disorder in COVID survivors

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, Hubel Province, China. It was initially reported to the World Health Organization (WHO) on December 31, 2019 WHO. On January 30, 2020 the WHO declared the COVID-19 outbreak as 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, (WHO) (1).

Symptoms of COVID-19 are variable, but often include fever, cough, headache, fatigue, breathing difficulties, and loss of smell and taste. Older people are at a higher risk of developing severe symptoms. Some people continue to experience a range of effects (long COVID) for months after recovery, and damage to organs was also observed. The virus is transmitted through 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 (2).

Social isolation was the primary control of the infected person. The social isolation and potential risk of fatal complications of the virus caused behavioral changes and mental health issues among survivors (3). Previously reported studies have shown that loneliness experienced during isolation was the primary cause of the depression and anxiety after recovery from acute infection. However, there was limited literature available on the recovery of symptoms along with the perception of survivors

about their disease. Thus this study was designed to evaluate long term sequlae of the COVID-19 and their perception about the disease.

MATERIALS AND METHODS

This was a cross sectional descriptive study conducted by using a questionnaire. A snowball sampling method was used to identify the participants. The patients with PCR positive COVID-19 were included in this study between 18 to 60 years of age. There was no gender restriction on the study population. Those patients experiencing anxiety, depression and respiratory problems before diagnosis of COVID-19 were excluded. The data was collected from 5 April to 5 June 2021. This Study was conducted at Royal College of Nursing, Swat, Pakistan.

DATA COLLECTION INSTRUMENT

For data collection, five point Likert scale questionnaire was designed according to the objectives of the study. The questionnaire included questions related to the experience of COVID-19 symptoms after recovery and perception of the COVID related restrictions.

DATA ANALYSIS:

The data was analyzed using SPSS version 22.0. The responses of the series of questions on Likert scale are presented in the form of pie charts.

RESULTS

A total of 90 perticipants were included in this study, out of which 45 were qualified nurses, 27 were students and 19 were non nursing population. Regarding long term symptoms and mental health issues summary of responses is given in Figure 1(a-g). After recovering 18% were experiencing breathing problems (Figure 1-a), 15% had fever (Figure 1-b), 9.5% had loss of taste and smell (Figure 1-c), 10.7% had gastrointestinal problems (Figure 1-d), 14.1% contuned to have sleep disorders (Figure 1-e), memory loss was reported in 5% (Figure 1-f) and 8.5% has sadness and mood swings (Figure 1-g).

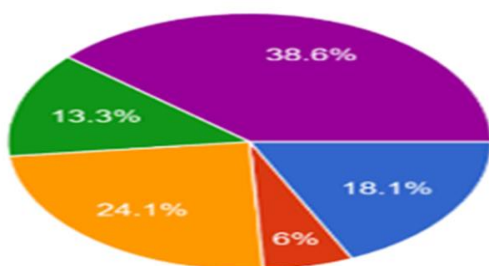**Figure 1-a. Q1. Do you experience breathing problem after recovery (n=83)**

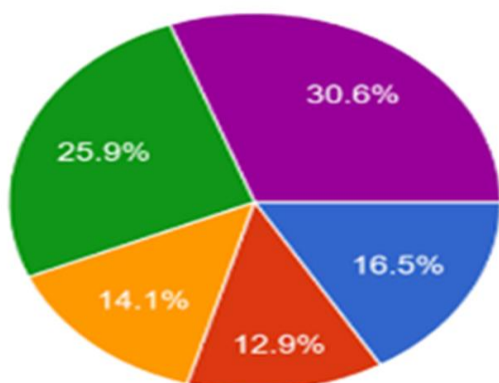**Figure 1-b. Q2. Do you experience fever after recovery (n=83)**

Figure 1-c. Q3. Do you experience loss of taste or smell after recovery (n=84)
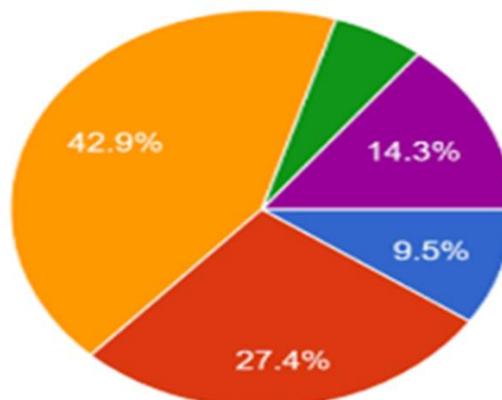
Figure 1-d. Q4. DO you feel vomiting or any other gastrointestinal problem after recovery (n=84)
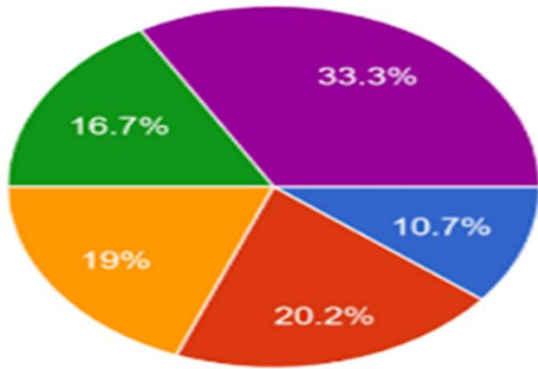

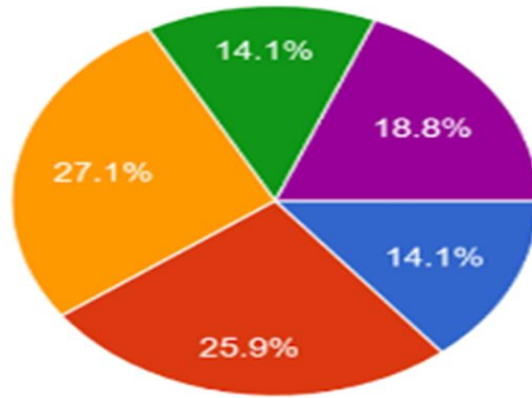**Figure 1-e. Q5. Do you experience sleep disturbance after recovery (n=85)**

Figure 1-f. Q6. Is there any loss of memory you experienced after recovery (n-83)
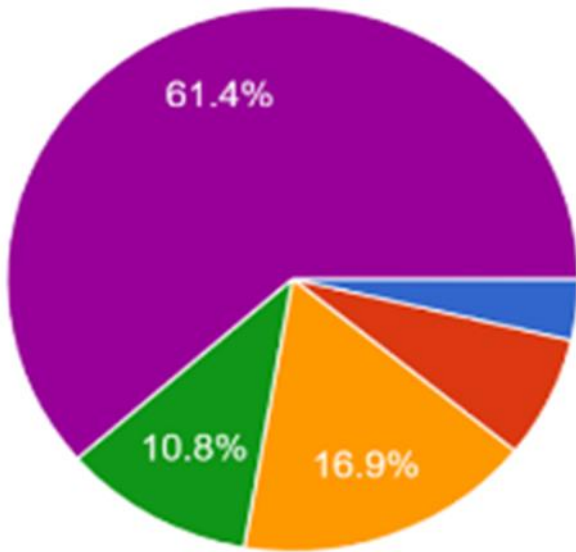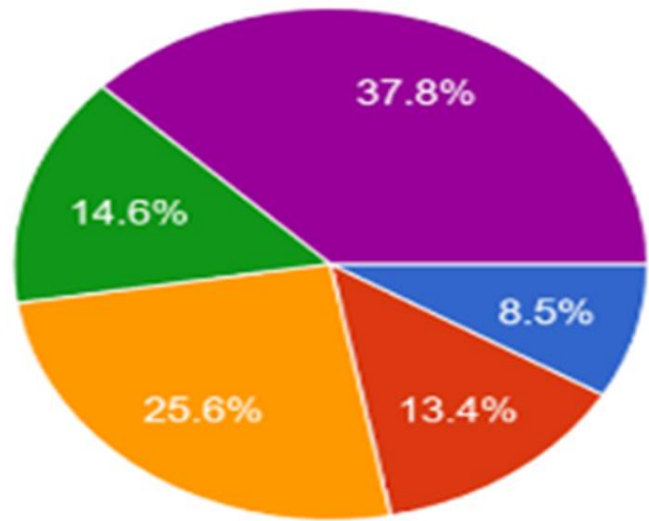

Figure 1-g. Q7. Do you experience sadness and mood swings after recovery (n=82)

Regarding perception of the participants great majority denied about spread of COVID-19 in social gatherings (Figure 2-a). Great majority also considered social isolation as a triger for anxiety and depression (Figure 2-b), they also believed that lockdown was useful in control of the disease (Figure 2-c), symptoms were severe among smokers (Figure 2-d) and pandemic has increased poverty (Figure 2-e).

Figure 2-a. Q1. COVID-19 affects our social gatherings even after recovery (n=83)
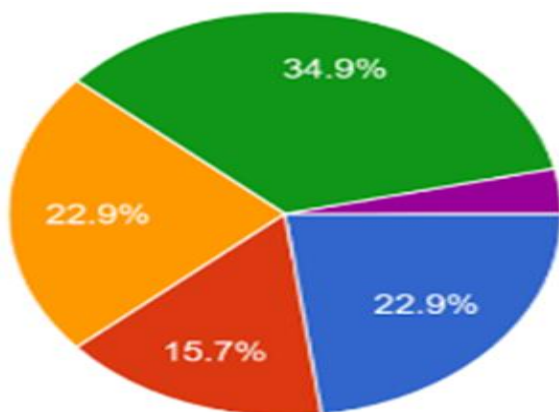
Legend:
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

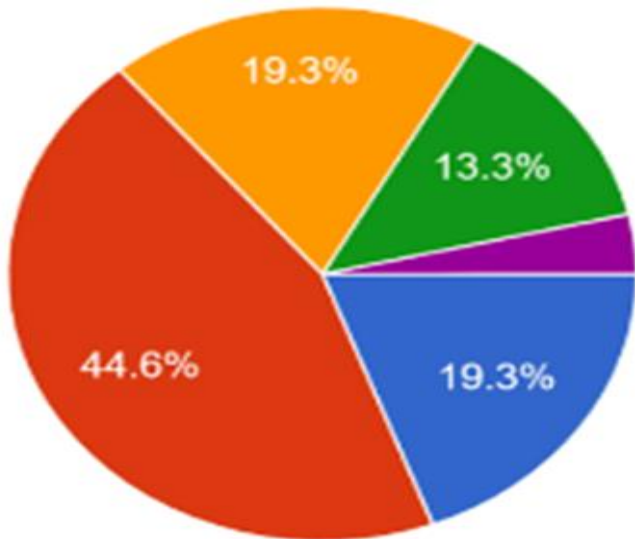**Figure 2-b. Q2. social isolation during COVID triggers anxiety and depression after recovery (n=83)**

Figure 2-c. Q3. Lockdown and restrained social gatherings helped in controlling spread of COVID 19 (n=83)
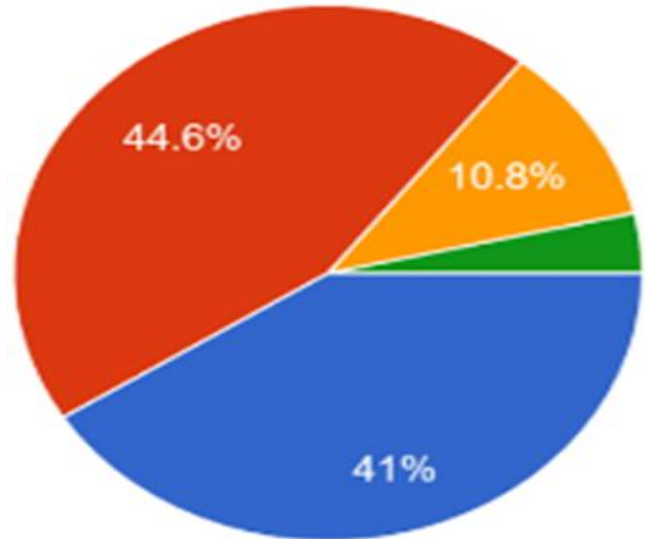

Figure 2-d. Q4. Severity of COVID 19 symptoms was higher among smokers (n=82)
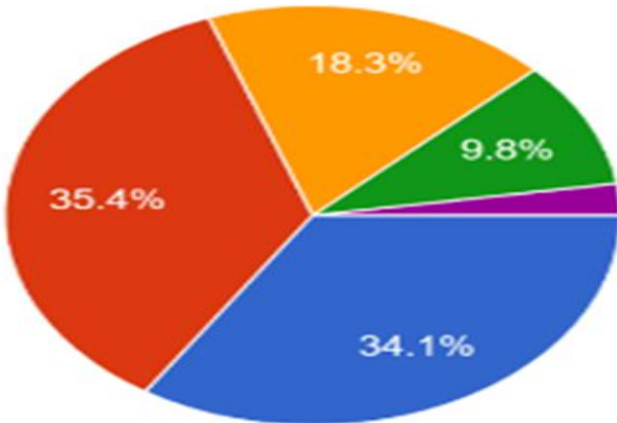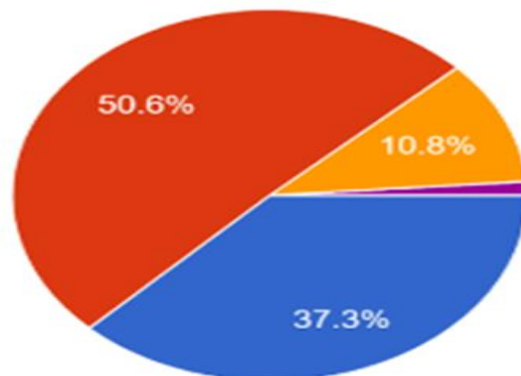
Figure 2-e. Q5. COVID- 19 pandemic has increased poverty in developed countries (n=83)

DISCUSSION

The study showed that majority of the patients experience some kind of long term effects of COVID-19 after apparently complete recovery. These problems not only involve their long term symptoms but also there is a risk of mental health issues, such as anxiety and depression. However great majority considered that the control of the disaese was possible because of lockdown. They also believed that pandemic has brought a height of inflation resulting in poverty. The COVID-19 was a global pandemic and all nations were affected without any exception. Recent research has reported long term sequelae of the symptoms and also mental health issues thus in general over results are consistent with the available literature (4-5).

A cross-sectional survey research was conducted the United Kingdom regarding loneliness in the UK during covid- Their results showed the prevalence of loneliness was 27% (530/1964). Risk factors for loneliness on younger age group reproted as being separated or divorced, greater emotion regulation difficulties, and poor quality sleep due to the COVID-19 crisis. On the other hand higher levels of social support such as the cases of being married/co-habiting and living with other family members were protective factors (6). Another study was reported from China regarding the mental health of general population during the Covid-19. There were 1738 respondents from 190 Chinese cities. This study found that 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 (7).

Another study was conducted in Italy, reported that the patients with mild cognitive impairment and Alzheimer's disease were among the most affected in the early stages of the COVID-19 pandemic due to the direct effects of the virus and by indirect effect due to health care delivery (8). This insteretsing finding as most of the healthcare facilities were directed to the virus, and patients with chronic illneses suffered indirect effects due to shortage of doctors and health care providers. Sleep disturbaces were reported in patients and some of the continued to experience it afterwards. This may be experienced as part of anxiety and depression or might be other way round where it is causing depression. Further studies are required to expmore it further.

Pakistan being the 3rd world country,, and with COVID poverty increased drastically, respondents were seen showing strong agreement on that. However inflation has been observed globally (9). 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 (10). However explorng coping strategies is beyond the scope of this study. 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 (11). 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 (11). 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 (11). The rate of anxiety increased among all because 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 (12).

The data was collected from a small set of participants, majority of them belonged to nursing profession, thus they were aware of the disease pattern, thus their mental health might not have affected to that extent. However a large scale study including general population would be more appropriate to answer mental health issues in post-COVID patients and to understand long term sequelae of the survivors.

CONCLUSION

In conclusion the study population has shown long term effects of COVID-19 in terms of persistent symptoms or mental health issues. Majority of the survivors agreed that the pandemic has brought poverty. Further long term studies are required to explore these questions further.

CONFLICT OF INTEREST:

Authors declare no conflict of interest

FUNDING SOURCE:

The study did not receive any external funding

ETHICAL APPROVAL:

The study was approved by local Research Ethics Committee.

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