# A Study on Immediate Mental Well- Being among COVID-19 Survivors

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## Abstract

Globally, pandemic Corona Virus 2019 has gained attention for its rapid and exponential diffusion. It has imposed an unprecedented threat to mental and physical well-being of the individual and the society. This study aims to investigate the impact of immediate changes on the mental well-being among the covid survivors by quantifying the magnitude of symptoms of fear of COVID, Corona Anxiety and Impact of the event and potential risk factors associated with these symptoms. A cross sectional, Observational, study was conducted from June to August 2020 on persons of both the gender, aged 18 years or above. A total of 220 respondents (COVID – 19 survivors) participated in the study. A survey questionnaire was provided to the patients through online Google form and distributed through social media platform, which includes, demographics, Fear of COVID – 19 scale, Impact of Event – revised scale and COVID Anxiety scale to assess the psychological effects of COVID-19 survivors. Findings suggest a significant negative correlation between age and anxiety (r= -0.007, P ≤ 0.001), age and fear of COVID (r= -0.004, P ≤ 0.05) and age and IES - R (r= -0.010, P ≤ 0.001). Younger populations had higher anxiety levels (F = 0.103, P ≤ 0.057), where older population had higher levels of fear (F = 1.04, P=0.03). Respondents with lower education level were more anxious (p=0.027) and fear (p=0.01) from COVID-19 while there was no significant difference in IES - R score based on education level. Pearson correlation test showed that there is significant positive correlation exist between FCV, IES-R and CAS. Female gender has significantly higher anxiety and fear of COVID, when compared to their male counterparts. Younger participants score higher levels of anxiety, where older populations had higher levels of fear. Higher education individuals show lower levels of anxiety and depression. There exist a high prevalence of mental health problem among COVID 19 survivors.

## Introduction

The global pandemic alert for Corona Virus, is the major challenge faced worldwide. Since December 2019, a novel pneumonia caused by Corona virus Disease 2019 (COVID-19) started spreading domestically and internationally (1). The outbreak of COVID-19 was stared in China from December 2019, crosses the territories in many countries, America, Europe, Asia and spreading its burden of disease (2). World health Organization declared COVID as a public health emergencies. Facing this critical situation, COVID survivors are at the risk of developing the psychological distress and other mental health symptoms. Previous studies have reported adverse psychological reactions to the 2003 SARS outbreak among health care workers

(3,4).This pandemic has broken the developed countries, so, in context to India if the situation goes similar to the USA, it will be very difficult to handle and overcome. In addition to this, the situation of lockdown and continuously watching the news of COVID-19 has eventually increased the anxiety levels.

In addition to the panic of COVID -19, there are significant changes in our day to day routine through the reinforced quarantine, to slow down the viral spread. Quarantine for any case in context of pandemic is associated with the mental health issues in the immediately after isolation leads to post traumatic stress disorder (5). Another major aspect is stigmatization and social rejection based on quarantined cordon (6). Other challenges imposed by quarantine period are temporary unemployment, work from home, home schooling for children, availability of limited resources and lack of physical activity and reduced or nil physical contact with friends, other family members and colleagues, created its own mental pressure, could potentially harmful in long run than the virus(7).

Earlier researches showed that there exist profound and broad spectrum of psychological impact that such global pandemics can inflict on people (8). Previous studies have shown that the psychological impact of severe isolation methods among the general population from earlier epidemics (9,10). The recent epidemiological studies showed that the Anxiety, negative psychological effect insomnia and depression, psychotic symptoms were more predominate and commonly reported mental health conditions (11-13). It is evident from the recent studies that there exist a direct and indirect psychological and social effect of COVID 19 pandemic and affects mental health of the individual in present and in future (14,15). There is a paucity of data in Indian literature, to fill this gap, present study was planned to explore the prevalence and factors associated with mental health condition (anxiety, fear and impact of event) among COVID-19 survivors. In order to address this pandemic situation, the present study aimed to focus on the mental health outcomes among the covid survivors by quantifying the magnitude of symptoms of fear of COVID, Corona Anxiety and Impact of the event and potential risk factors associated with these symptoms

## Materials and Methods

A cross sectional, Observational, study was conducted from June to August 2020 time period to assess the psychological effects of COVID-19 survivors. Persons of both the gender, aged 18 years or above who understand the contents of the questionnaire and willing to participate in the study were included in this study. A total of 220 respondents (COVID – 19 survivors) participated in the study.

## Demographic and COVID Related Information questionnaire

The questionnaire consist of three sections: the first section includes demographic details which included age, gender, marital status, educational qualification, occupation. The second section includes COVID related Questionnaire, Corona Virus Anxiety Scale, Fear of Covid scale and Impact of Event Scale – Revised (IES – R).

**The coronavirus anxiety scale (CAS):** It is a self-reported validated questionnaire to access the anxiety due to COVID- 19 crisis (90% sensitivity and 85% specificity). It consist of five questions and each item is rated on a 5-point scale (0 (not at all) to 4 (nearly every day), based on experiences over the past two weeks(16).

**Fear of COVID 19 scale (FCV):** It is a seven-item scale measuring the construct of fear and predominantly focuses on the emotional dimension, with representative items from physiological and cognitive dimensions. It is a self-reported validated questionnaire to access the fear due to COVID- 19. The level of agreement was rated using 5-point Likert scale (strongly disagree=1 to strongly agree=5). A total score could be calculated by adding up each item score (ranged from 7 to 35). The higher the score, the greater the fear of COVID-19(17).

**Impact of Event Scale - Revised (IES-R):** It is aself-report questionnaire to access the subjective distress for different specific life events. It is a 22 items questionnaire, response were recorded on a 5-point Likert scale (from 0 = not at all, to 4 = extremely). It measures Post Trauma Stress Disorder symptoms severity in the past seven days. IES- R consist of 3 subscales Avoidance, Intrusion and Hyper arousal. In addition to the three subscale scores, IES- R also gives an overall score of events impact (IES-R total, equal to the sum of the three subscale scores)(18, 19).

Duly completed questionnaire was extracted from Google form and exported to excelfor cleaning and coding. Thus cleaned data was used for analysis purpose. SPSS Software version 20 (IBM corp.) was used to access the data. Socio-demographic characteristics and

the Covid related scale symptoms were analysed and presented as means, standard deviations, and percentages. Student's t-test was used to compare the demographic characteristics and FCV, IES – R, CAS, in different domains. Frequency and percentage were calculated and tabulated for socio-demographic variables. The independent sample t-test and analysis of variance (ANOVA) test was used as appropriate for inferential statistics. A p-value of less than 0.05 was considered to be statistically significant. ANOVA test was used to find a correlation between anxiety IES-R and Fear of COVID and demographic variables. All data were analysed usingSPSS Software version 20 (IBM corp.)

## Results and Discussions

Of the total 220 respondents (COVID – 19 surviv3ers) enrolled in the study and started filling the questionnaires, 92.72% (204 out of 220 individuals) completed the whole survey, and were considered for the statistical analyses. Majority of the study participants were females (56.86 %).The mean age of the study participants was 34.56±16.18 years, and the age ranged between 18 and 75 years. In the present study, 31.37% of the individuals was under the age group of 40 – 60, all the participants are educated with 43.13% completed their graduation, followed by 29.41 % completed their post-graduation and 27.47% completed their high schooling. Majority of the participants were married (54.90%).In relation to the occupational status majority were employed and working in different sectors (48.03%) and 36.27% were students and 15.68 % were unemployed (Table 1).

Clinical data and post-discharge status were summarized in Table 1. The median time from discharge to follow-up were 15 days. The common symptoms and signs during the onset of covid was fever (73.52%), cough (70.58%), breathlessness (39.21%) and sputum (42.15%).Post-discharge cough, sputum and breathlessness after activity was observed among 14.07%, 5.88% and 19.60% respectively during the follow-up. Among the study subjects 46% of survivors worried about recurrence and 50.9% were worried about infection to others. Home quarantine lifestyle was carried out by 78.43% of Covid survivors. Ninety two survivors were willingness to return to hospital for health examination. The mean score of Anxiety, fear and impact of event scale was, 9.21±4.63, 17.31±5.76 and 28.9±8.72 respectively (Table 2).

Current study finding showed Anxiety, impact of event and fear scores were significant based on age categories (p <0.05), there is a significant negative correlation between age and anxiety (r= -0.007, P ≤ 0.001), age and fear of COVID (r= -0.004, P ≤ 0.05) and age and IES - R (r= -0.010, P ≤ 0.001), where younger populations had higher anxiety levels (F = 0.103, P ≤ 0.057), where older populations had higher levels of fear (F = 1.04, P=0.03). Female gender has significantly higher anxiety score (r=0.010, F=1.982, p=0.016), IES-R score (r=0.065, F=8.02, p=0.005) and fear score (r=0.084, F=10.28, p=0.001) compared to their male counterparts. There was no significant difference in anxiety, IES-R and fear scores according to marital status. Perhaps, married persons were found to have higher score of anxiety and fear, when compared to unmarried persons. Respondents with lower education level were more anxious (r=0.011, F=1.32, p=0.027) and fear (r=0.045, F=4.40, p=0.01) from COVID-19 while there was no significant difference in IES - R score based on education level. Apart from students, employed persons has significantly higher anxiety score (p=0.057), IES-R score (p=0.050) and fear score (p=0.032) compared to unemployed counterparts. (Table 3). Participants with comorbid conditions like Hypertension and diabetes, was recorded with higher score of anxiety (p <0.01), IES-R (p <0.01) and fear scales (p <0.01).

Pearson correlation test showed that there is significant positive correlation exist between FCV, IES-R and CAS (Table 4). There exist moderate positive correlation between fear and Impact of event (r=0.675; p=0.001), which is followed by Impact of event and anxiety (r=0.556: p=0.01). Weaker positive correlation existed between fear and anxiety (r=0.479; p=0.001).

In the covid situation there are many mental health stressors has been identified such as fear of infection, financial depletion, deficient supplies, and stigmatization (20). In few cases suicidal inclinations has also been observed among COVID-19 affected patients (21). In general, if a person is infected, fear is associated with the stigmatization of individuals who are recognized as a source of infection, with higher risk of civil conflicts. Present study finding highlighted that females showed high degree of fear when compared to males, this finding is in line with the previous study, where women exhibit a higher vulnerability to stress (22,23). Further the chronic illness is also associated with the increased pandemic fear (24).

**Table.1** Demographic characteristics of the study population

| Variables | | N (%) n= 204 |
|---|---|---|
| Age | 15 - 20 | 56(27.45 %) |
| | 20 - 40 | 68(33.33 %) |
| | 40 – 60 | 64(31.37 %) |
| | 60 - 70 | 16(7.84 %) |
| Gender | Male | 88(43.13%) |
| | Female | 116(56.86 %) |
| Educational Status | post graduate | 60 (29.41%) |
| | Graduate | 88(43.13%) |
| | high school | 56(27.45%) |
| Occupational status | Student | 74(36.27%) |
| | Unemployed | 32(15.68%) |
| | Professional | 98(48.03%) |
| Marital status | unmarried | 84(41.17%) |
| | Married | 112(54.907%) |
| | widow | 8(3.92%) |
| BMI | Normal | 54(26.47%) |
| | Over weight | 90(44.11%) |
| | Obese | 60 (29.41%) |
| Co morbid conditions | Diabetes | 84(41.17%) |
| | Hypertension | 56(27.45%) |
| | Asthma | 24(11.764%) |
| | Knee pain | 50(24.5%) |
| | Thyroid | 10(4.9%) |
| | Others (Heart, Liver, kidney problem/ wheezing/ migraine) | 56(27.45%) |
| Common symptoms and signs at disease onset | Fever | 150 (73.52%) |
| | Cough | 144 (70.58%) |
| | Breathlessness or dyspnea | 80 (39.21%) |
| | Sputum | 86 (42.15%) |
| **Post-discharge status** | | |
| Respiratory symptoms | Cough | 30 (14.70%) |
| | Sputum | 12 (5.88%) |
| | Breathlessness after activity | 40 (19.60%) |
| Fear of recurrence / infection | Worry about recurrence | 94 (46.07%) |
| | Worry about infection to others | 104 (50.98%) |
| | Both worry about recurrence and infection to others | 72 (35.29%) |
| Home quarantine lifestyle | | 160 (78.43%) |
| Willingness to return to hospital for health examination | | 164 (90.19) |

**Table.2** Mean Scores of Impact, Anxiety and fear of COVID-19 scales

| Variables | Mean (Range) | SD |
|---|---|---|
| Anxiety from COVID (CAS) | 9.21 (0-17) | 4.63 |
| Fear of COVID | 17.31 (7 – 30) | 5.76 |
| Impact of Event (IES – R) | 28.88 (0 – 76) | 8.72 |
| Intrusion | 10.07 (0 – 29) | 3.42 |
| Avoidance | 11.27 (0 – 32) | 2.87 |
| Hyperarousal | 7.54 (0 – 23) | 3.82 |

**Table.3** Comparison of mean scores of Impact, Anxiety and fear from COVID-19 across demographic variables

| Demographic variable | | N | FCV Mean ± SD | F Value | P Value | IES - R Mean ± SD | F Value | P Value | CAS Mean± SD | F Value | P Value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | 15 - 20 | 34 | 13.76±5.52 | | | 27.82±12.10 | | | 9.82±4.59 | | |
| | 20 - 40 | 28 | 14.85±7.14 | | | 21.21±24.25 | | | 8.21±5.47 | | |
| | 40 – 60 | 32 | 16.5±6.45 | | | 20.31±21.51 | | | 7.25±4.39 | | |
| | 60 - 70 | 8 | 18±11.78 | 1.04 | **0.037\*** | 13.75±13.94 | 0.364 | **0.057\*** | 6.75±3.41 | 0.103 | **0.057\*** |
| Gender | Male | 44 | 11.9±6.81 | | | 20.95±15.59 | | | 5.95±4.09 | | |
| | Female | 58 | 16.13±6.42 | 10.28 | **0.001\*** | 26.41±20.36 | 8.02 | **0.005\*** | 9.05±5.01 | 1.982 | **0.016\*** |
| Marital status | unmarried | 42 | 15.52±6.50 | | | 20.04±21.44 | | | 6.28±4.45 | | |
| | Married | 56 | 20.71±6.77 | | | 17.32±17.72 | | | 8.80±4.84 | | |
| | widow | 4 | 19.5±10.96 | 1.87 | 0.158 | 29±5.77 | 0.82 | 0.441 | 7.75±1.5 | 1.528 | 0.221 |
| Occupation | Student | 37 | 13.94±6.62 | | | 18.67±22.23 | | | 5.83±4.80 | | |
| | Unemployed | 16 | 14.13±9.91 | | | 13.06±11.04 | | | 6.73±5.53 | | |
| | Employed | 49 | 18.70±6.15 | 0.44 | **0.032\*** | 21.37±18.72 | 0.78 | **0.050\*** | 8.56±4.33 | 0.379 | **0.057\*** |
| Education | post graduate | 28 | 17.5±7.90 | | | 26.64±22.11 | | | 6.64±4.46 | | |
| | Graduate | 44 | 13.04±6.07 | | | 26.45±21.30 | | | 5.79±4.78 | | |
| | high school | 30 | 13.2±6.24 | 4.40 | **0.01\*** | 25.4±11.77 | 0.12 | 0.87 | 9.36±4.52 | 1.32 | **0.027\*** |

*FCV- Fear of COVID – 19, IES-R – Impact of Event – Revised, CAS – CORONA virus Anxiety scale Scores; * denotes the values are significant at $p<0.05$

**Table.4** Correlation between score of Impact, Anxiety and fear from COVID-19

| Variables | R | P value |
|---|---|---|
| Fear – Impact of Event | 0.675 | 0.001 |
| Fear - Anxiety | 0.494 | 0.001 |
| Impact of Event - Anxiety | 0.556 | 0.01 |

R = Pearson Correlation Coefficient; P value < 0.05

The present study finding showed that COVID survivors showed high degree of Anxiety, fear which might be due to the greater access to information through social media, which can easily trigger stress (25,26). Current study finding is in line with the recent study that fear, anxiety and other mood disorders were reported among patient's undergone preventive interventions like quarantine (27).

In relation to the demographic variables related to psychological impact, finding highlighted that employed or having to go out for work during the pandemic situation showed high level of anxiety and fear, which is in line with the recent studies (13, 28 - 30). COVID -19 pandemic is associated with the severe economic consequences, which affects significant mental health of the individuals worldwide. Protecting the mental well-being of populations is an imperative component of fighting the COVID-19 pandemic.

Older age groups is significantly associated with the high fear score which is not in line with the previous study (31). The anxiety during the pandemic situation of the communicable disease has become increased. In a survey conducted by NMHS (National mental health survey) showed that the prevalence of anxiety was 3.36% among various state of India (32). Likewise, Chinese the prevalence study showed the prevalence of anxiety (33-35). However slightly higher prevalence was observed in a study from Nepal (9.9%), Hong Kong (14%) and multinational study (15.7%) (36, 37). The overall prevalence was showed as 23.21% in a systematic review conducted by Pappa et al.,(2020) (38).

Even though there is a paucity of evidences in the existing literature is relatively low, still various valuable observations and recommendations are available. Even though the current study has several strengths, like sample size, relatively heterogeneous samples of general population, several limitation should also be noted. The cross sectional nature of the study lacks the longitudinal follow up, due to the alarming situation, the mental health symptoms of the survivors could become more severe. Thus, long-term psychological implications of this population are worth further investigation. Response bias might exist as the non-responders might be severely facing fear and anxiety of COVID-19, because of that they might not be interested in this survey. The study data was collected among COVID-19 survivors after the recovery, they might hesitate to recall the hardships, and hence the findings doesn't allow to derive the conclusion as the findings may tend to change over the time. As present study is a cross sectional study which is not

robust enough to determine the casual relationship between mental health and clinical variables. Despite these limitations, the current study findings provides data on psychological impact such as fear, anxiety and Impact of event of COVID-19 among Indian population.

The present study concluded that COVID survivors experienced high rate of symptoms of anxiety, fear and impact of COVID- 19. In the continuing spread of COVID -19, the current study finding would through light on the effective improvement of patient's mental health and treatment focused on patient centric standard care which might assist in future to treat the infected individuals. The multidisciplinary approach should be encouraged along with the medication, personal hygienic practices, the mental health counsellors should also take part in treating and follow ups of COVID survivors. Special interventions to promote mental well-being of COVID survivors need to be immediately implemented, with women, nurses, and frontline workers requiring particular attention. The increasing number of COVID survivors experiencing various degree of anxiety, fear and impact of COVID- 19. Subsequent treatment in hospital, awareness and educational program might improve the mental health of COVID survivors to some extent. A significant amount of psychological comfort for patients when confronting this public health emergency.

The need of the hour is to focus on the high quality research data on the mental health and psychological effect of COVID 19 pandemic, globally and also in vulnerable groups. To conclude, the study findings shows that long term study should be encouraged along with the specific screening strategies for the psychological care for COVID patients. An inclusive psychological support strategy can be planned and developed based on the study finding during this epidemic situation in developing country like India.

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### References

1. Li Q, Guan X, Wu P, *et al*. Early transmission dynamics in Wuhan, China, of novel coronavirus-

infected pneumonia [published online January 29, 2020]. *N Engl J Med*. 2020. doi:10.1056/NEJMoa2001316

2. Tabish SA. COVID-19 pandemic: The crisis and the longer-term perspectives. *J Cardiol Curr* Res. 2020;13(2):41-4

3. Lee AM, Wong JG, McAlonan GM, et al. Stress and psychological distress among SARS survivors 1 year after the outbreak. *Can J Psychiatry*. 2007;52(4):233-240. doi:10.1177/070674370705200405

4. Maunder R, Hunter J, Vincent L, et al. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *CMAJ*. 2003;168(10):1245-1251.

5. Reynolds DL, Garay JR, Deamond SL, Moran MK, Gold W, Styra R. Understanding, compliance and psychological impact of the SARS quarantine experience. Epidemiol Infect. 2008;136(7):997-1007

6. World Health Organization. Kluge HHP. Statement Physical and mental health key to resilience during COVID-19 pandemic, 2020. Available at: https://www.euro.who.int/en/health-topics/healthemergencies/coronavirus-covid-19/statements/ statement-physical-and-mental-health-key-toresilience-during-covid-19-pandemic. Accessed on 20 Aug 2020.

7. Dubey S, Biswas P, Ghosh R, Chatterjee S, Dubey M.J, Chatterjee S et al. Psychosocial impact of COVID-19. Diabetes and Metabolic Syndrome. Clin Res Reviews. 2020;14(5):779-88.

8. Lima CKT, Carvalho PMde-M, Lima Ide-AAS, Nunes JVAde-O, Saraiva JS, de-Souza RI et al. The emotional impact of Coronavirus 2019-nCoV (new coronavirus disease). Psychiatry Res. 2020;287:112915.

9. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. Emerg Infect Dis 2004;10:1206-12.

10. Jeong H, Yim HW, Song YJ, Ki M, Min JA, Cho J, et al. Mental health status of people isolated due to Middle East respiratory syndrome. Epidemiol Health 2016;38:e2016048.

11. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. Psychiatry Res 2020;288:112954.

12. Goyal K, Chauhan P, Chhikara K, Gupta P, Singh MP. Fear of COVID 2019: First suicidal case in India! Asian J Psychiatr 2020;49:101989.

13. Mazza C, Ricci E, Biondi S, Colasanti M, Ferracuti S, Napoli C, et al. A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: Immediate psychological responses and associated factors. Int J Environ Res Public Health 2020;17:3165.

14. McManus S, Bebbington P, Jenkins R, Brugha T. Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014. 2016. https://files.digital.nhs.uk/pdf/q/3/mental_health_and_ wellbeing_in_england_full_report.pdf (accessed April 11, 2020).

15. Ford T, Vizard T, Sadler K, et al. Data resource profile: the mental health of children and young people surveys (MHCYP). Int J Epidemiol 2020; published online Jan 18. DOI:10.1093/ije/dyz259.

16. Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death Studies. 2020;44(7):393-401.

17. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. 2020. The Fear of COVID-19 Scale: Development and initial validation. Int J Ment Health Addict. 2020:1-9.

18. Weiss, D.S. The impact of event scale: Revised. In Cross-Cultural Assessment of Psychological Trauma and PTSD; Springer: Boston, MA, USA, 2007; pp. 219–238.

19. Giannantonio, M. (Ed.) Psicotraumatologia e Psicologia Dell'emergenza; Ecomind: Salerno, Italy, 2003.

20. Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. Lancet 2020; 395 (10227). doi:10.1016/S0140-6736(20)30460-8

21. Rogers JP, Chesney E, Oliver D, et al. Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: A systematic review and meta-analysis with comparison to the COVID-19 pandemic [published online ahead of print, May 18, 2020]. Lancet Psychiatry 2020; 7. doi:10.1016/S2215- 0366(20)30203-0

22. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. Gen Psych. 2020;33(2):e100213.

23. Sakib N, Bhuiyan AKMI, Hossain S, Al Mamun F, Hosen I, Abdullah AH et al. Psychometric validation of the Bangla Fear of COVID-19 scale: Confirmatory factor analysis and Rasch analysis. Int

J Ment Health Addiction. 2020;1-12.

24. Tzur Bitan D, 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;289:113100

25. Király O, Potenza MN, Stein DJ, King DL, Hodgins DC, Saunders JB, et al. Preventing problematic internet use during the COVID-19 pandemic: Consensus guidance. Compr Psychiatry 2020;100:152180.

26. Ahmad AR, Murad HR. The impact of social media on panic during the COVID-19 pandemic in Iraqi Kurdistan: Online questionnaire study. J Med Internet Res 2020;22:e19556

27. Hossain MM, Sultana A, and Purohit N. Mental health outcomes of quarantine and isolation for infection prevention: A systematic umbrella review of the global evidence. Epidemiol Health 2020; doi:10.4178/epih.e2020038

28. Kawohl W, Nordt C. COVID-19, unemployment, and suicide. Lancet Psychiatry 2020;7:389-90.

29. 22. Titov N, Staples L, Kayrouz R, Cross S, Karin E, Ryan K, et al. Rapid report: Early demand, profiles and concerns of mental health users during the coronavirus (COVID-19) pandemic. Internet Interv 2020;21:100327.

30. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. Int J Surg 2020;78:185-93.

31. Nguyen HT, Do BN, Pham KM, Kim GB, Dam HTB, Nguyen TT et al. Fear of COVID-19 scale associations of its scores with health literacy and health-related behaviors among medical students. Int J Environ Res Pub Health. 2020;17(11):4164

32. Ministry of Health and Family Welfare Government of India. New Delhi: National mental health survey of India, 2015-16; prevalence, pattern and outcomes. 2016. Available at: http://indianmhs.nimhans.ac.in/ Docs/Report2.pdf. Accessed on 20 Aug 2020.

33. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res. 2020;287:112934.

34. Tan W, Hao F, McIntyre RS, Jiang L, Jiang X, Zhang L et al. Is returning to work during the COVID-19 pandemic stressful? A study on immediate mental health status and psychoneuroimmunity prevention measures of Chinese workforce. Brain Behavior Immunity. 2020;87:84-92.

35. Wang C, Pan R, Wan X, Tan Y, Xu L, McIntyre RS et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. Brain Behavior Immunity. 2020;87:40-8.

36. Chew NWS, Lee GKH, Tan BYQ, Jing M, Goh Y, Ngiam NJH et al. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. Brain Behavior Immunity. 2020;88:559-65.

37. Gupta AK, Sahoo S, Mehra A, Grover S. Psychological impact of 'lockdown' due to COVID19 pandemic in Nepal: An online survey. Asian J Psychiatry. 2020;54:102243.

38. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsi E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. Brain Behavior Immunity. 2020;88:901-7.