Psychological impact of COVID-19 lockdown: An online survey from India

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Background: The COVID-19 pandemic has led to a complete shut-down of the entire world and almost all the countries are presently in a “lockdown” mode. While the lockdown strategy is an essential step to curb the exponential rise of COVID-19 cases, the impact of the same on mental health is not well known.

Aim: This study aimed to evaluate the psychological impact of lockdown due to COVID-19 pandemic on the general public with an objective to assess the prevalence of depression, anxiety, perceived stress, well-being, and other psychological issues.

Materials and Methods: It was an online survey conducted under the aegis of the Indian Psychiatry Society. Using the Survey Monkey platform, a survey link was circulated using the Whatsapp. The survey questionnaire included perceived stress scale, Patient Health Questionnaire-9, Generalized Anxiety Disorder-7, Warwick-Edinburgh Mental Well-being Scale to assess perceived stress, anxiety, depression, and mental well-being, respectively. The survey link was circulated starting from April 6, 2020 and was closed on April 24, 2020.

Results: During the survey, a total of 1871 responses were collected, of which 1685 (90.05%) responses were analyzed. About two-fifth (38.2%) had anxiety and 10.5% of the participants had depression. Overall, 40.5% of the participants...
INTRODUCTION

One of the extreme challenges for survival is facing a pandemic of an infectious disease of the COVID-19 type.[1] The World Health Organization (WHO) declared COVID-19 as a pandemic on March 11, 2020 and as on March 24, 2020, more than 3.5 lakhs cases have been confirmed and more than 14,000 deaths have been reported, affecting 190 countries worldwide (WHO website dated March 24, 2020 at 21:00 pm Indian standard time).[2] and these figures have exponentially increased to about 27.19 lakhs cases with about 1.9 lakhs deaths in 1 month time (WHO website date April 25, 2020 at 05:30 pm Indian standard time).[3]

To tackle the rapid rise of cases in India and to curb the community spread, national level “lockdown” was declared starting from midnight of March 25, 2020 initially for 21 days, which was later extended up to May 3, 2020, with assurance that the basic needs of the general public will be taken care of.[4]

“Lockdown” is an emergency protocol that prevents public from moving from one area to the other. Complete lockdown further means that persons should stay where they are currently and no entry/exit movements would be allowed further. It can be both a preventive and an emergency strategy in order to save the lives of the vulnerable or at-risk persons. In this scenario, all educational institutions, shopping arcades, factories, offices, local markets, transport vehicles, airports, railways, metros, and buses are completely shut down except hospitals, police stations, emergency services like fire station, petrol pumps, etc., and groceries. In recent times, lockdown had been very well documented during September 9/11 attacks in New York (3 day lockdown) and during riots in several countries. As social distancing is an important public health solution to tackle the spread of COVID-19, many affected countries such as China, Italy, the United States, France, and Malaysia have also enforced lockdowns of public spaces effectively.[5,4]

While lockdown can be a significant and effective strategy of social distancing to tackle the increasing spread of the highly infectious COVID-19 virus, at the same time, it can have some degree of psychological impact on the public. It is well known that quarantine/isolation for any cause and in the context of a pandemic (Severe Acute Respiratory distress Syndrome, 2003) has been associated with significant mental health problems ranging from anxiety, fear, depressive symptoms, sense of loneliness, sleep disturbances, anger, etc., in the immediate few days of isolation, and later with symptoms of posttraumatic stress disorder and depression after discharge from the hospital.[7] However, the psychological impact of lockdown on the general public has not been studied yet. Man being a social animal, such restrictions on free movements can lead to anger, frustration, loneliness and depressive symptoms. There can be fear/apprehension among the public related to supply of basic amenities like groceries and milk supplies, medicines, care of previously sick persons in the family due to other medical causes, elderly persons staying alone, restriction of free movements, having a prevailing sense of being imprisoned in one’s own house or “being in house arrest,” etc., Moreover, lockdown can lead to a “panic” mode of stockpiling of essential commodities without maintaining social distancing as advised by the government.[8]

Lockdown can have different effects on different age groups. It may be difficult to engage the children at home throughout the day. This can be a source of stress to the parents. Similarly, due to the vulnerability of elderly for COVID-19 infections, others would avoid to meet the elderly, which can be a major source of distress, both for the elderly and their family members.

Unlike western countries, Indians are thought to be more social and have more social networks, engage in several religious festivals, and get-togethers across the year. This can be attributed to India’s diverse culture and traditions.[9] In this regard, a complete lockdown can have a downgrading effect on the psyche of the general public. It can also have a long lasting effect on the economy, farming and daily wage earners of the country. While it is an utmost necessary step to be taken at present to combat the COVID-19 infection, steps should be taken to mitigate the possible psychological impact of lockdown in the general public.

Moreover, recent reports suggest that the government’s sudden enforcement of lockdown has created many hurdles to the economically disadvantaged populations.
as evident from the mass exodus of migrant workers and concerns about starvation among people in slum areas. A recently published sentiment analysis of lockdown through twitter (analysis as evident from tweets extracted from 25th to 28th March 2020; \(n = 24,000\) tweets) reported that the prominent sentiment was positive and trust on the government; further, many respondents reported sadness and worries about the problems of daily wage laborers during lockdown. However, no national-wide data on the psychological impact of lockdown in India are available. Therefore, the current study was planned with an aim to evaluate the psychological impact of lockdown on the general public with an objective to assess the fear, perceived stress, and psychological problems related to lockdown due to COVID-19 infection in India.

MATERIALS AND METHODS

It was an online survey conducted under the aegis of Research, Education and Training sub-Committee of Indian Psychiatric Society. Using the Survey Monkey platform, a survey link was circulated using the Whatsapp. The survey questionnaire was translated into 11 Indian languages (Hindi, Odia, Bengali, Marathi, Tamil, Telugu, Kannada, Malayalam, Punjabi, Gujarati, and Urdu) besides being used in English. The link was designed in such a way, that only 1 response can be generated using one device. The survey questionnaire consisted of the following instruments:

Demographics and personal characteristics

A basic information sheet which included information about the subject’s age, gender, marital status, educational qualifications, and current work profile.

A questionnaire to evaluate the effect of lockdown on relationship with family members/neighbors/significant others and how lockdown had affected one’s emotions, feelings, and behaviors in different aspects of life.

The Warwick-Edinburgh Mental Well-being Scale

It is 14-item scale covering both hedonic and eudaimonic aspects of mental health including positive affect (feelings of optimism, cheerfulness, and relaxation), satisfying interpersonal relationships and positive functioning (energy, clear thinking, self-acceptance, personal development, competence, and autonomy). It has good content validity and high test-retest reliability. The total score was determined by adding the score of all the 14 items. A higher score indicates greater positive well-being. A score of \(\leq 40\) has been reported to indicate high risk for depression.

Patient Health Questionnaire-9

The Patient Health Questionnaire (PHQ) is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-9 is the depression module, which scores each of the 9 Diagnostic and Statistical Manual-IV criteria as “0” (not at all) to “3” (nearly every day). This questionnaire is found to have excellent reliability and validity, and sensitivity and specificity of 88% for major depression.

Generalized Anxiety Disorder-7 Scale

It is a 7-item anxiety scale with good reliability as well as criterion, construct, factorial, and procedural validity. Cutoff points of 5, 10, and 15 are interpreted as representing mild, moderate, and severe levels of anxiety on the Generalized Anxiety Disorder (GAD)-7. Increasing scores on the scale are strongly associated with multiple domains of functional impairment. Although GAD and depression symptoms frequently co-occurred, factor analysis confirmed them as distinct dimensions. Moreover, GAD and depression symptoms have differing but independent effects on functional impairment and disability. There is good agreement between self-report and interviewer administered versions of the scale. This study employed self-reported version.

Perceived stress scale

It is a 10-item scale widely used to assess the perception of stress. It is a measure of the degree to which situations in one’s life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The questions are of a general nature and hence are relatively free of content specific to any subpopulation group. The questions in the perceived stress scale (PSS) ask about feelings and thoughts during the last month. It has adequate psychometric properties. For this survey, we had reduced the time limit to 15 days.

The survey link was circulated in 12 Indian languages starting from April 6, 2020, i.e. after 10 days of declaration of lockdown, and the survey was closed on April 24, 2020. The link was circulated by the Exponential Non-Discriminative snowballing method, people receiving the message were requested to complete the survey and then forward the link to their close contacts in various Whatsapp group, Facebook, and Twitter platforms.

The study was approved by the Ethics Committee of the Indian Psychiatric Society, for the research purposes. Descriptive statistics were applied and the data collected was analyzed using SPSS 20.0 version. Pearson’s co-relation co-efficient and Spearman’s co-relation co-efficient were used to find the association between different variables.

RESULTS

During the survey, a total of 1871 responses were collected of which 1685 (90.05%) responses were analyzed (which were complete in all aspects, except for information on age available
for 1653 participants only). The median duration of completing the survey was 12th day of the lockdown period (mean: 12.84, standard deviation [SD]: 2.04; Range: 11th day to 21st day).

The mean age of the participants (1653 responses) was 41.26 (SD: 13.67) years. About three-fifths of the participants (63.7%) were male, about three-fourth were married (72.6%), three-fifth had completed postgraduation (61.8%), majority were employed (self-employed/employed in government sector or private sector) (78.9%). With regard to profession, slightly less than half of the responders (47.1%) were health-care workers (HCWs). In terms of current level of working during lockdown, about one-fifth of responders (21.1%) were not going to work and rest were either working from home for few hours (17.7%) or for usual hours (8.5%) and some were going for work for few hours (16.6%) [Table 1].

Perceived stress, anxiety, depression, and mental well-being during lockdown

The mean PSS score for the study participants was 16.56 (SD - 5.60) and about 70% of the participants reported moderate level of stress and one-fourth reported mild stress after the onset of the lockdown period. The mean GAD-7 score was 4.14 (SD - 4.84) and about one-fourth participants (23.7%) fell into the category of moderate symptom severity. The mean PHQ-9 score of the participants was 3.63 (SD - 4.81) with majority of the participants reported “no or minimal depressive symptoms” but 18.5% reported mild depressive symptoms and a small proportion of the participants reported moderate (5.8%) and moderate-to-severe depression (3.0%). The mean Warwick-Edinburgh Mental Well-being Scale (WEMWBS) score for the study participants was 43.92 (SD - 8.79). When the cut off for high risk of depression (i.e., score ≤40) was applied, about 70% of the participants (71.7%) had score ≤40, suggesting poor mental well-being [Table 2].

Comparison of anxiety, depression, stress, and well-being of health-care workers and non health-care workers

As about a half of the responders were HCWs (47.1%), we compared the data of the HCWs and those who were not HCWs. Compared to HCWs, non-HCWs had significantly higher mean PHQ-9 score, higher proportion of them had depression, if mild depression is taken into account, and lower proportion of them had poor mental well-being. Details are mentioned in Table 2.

Effect of lockdown on relationships

Nearly half of the responders reported marked improvement in their relationships with their spouse/partner (47.4%), children (44.2%), and with parents (47.3%) after the beginning of lockdown period. Further, about three-fifth of the participants reported marked improvement in their relationship with their neighbors (61.8%) and office colleagues (59.6%) during the lockdown period [Table 3].

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Table 1: Sociodemographic profile (n=1685)

| Variables                      | Frequency (%)/mean (SD) |
|--------------------------------|-------------------------|
| Age (n=1653)                   | 41.26 (13.67); range: 14-87 |
| Sex                            |                         |
| Male                           | 1074 (63.7)             |
| Female                         | 611 (36.3)              |
| Marital status                 |                         |
| Married                        | 1223 (72.6)             |
| Unmarried                      | 401 (23.8)              |
| Widowed                        | 16 (0.9)                |
| Divorced/separated             | 22 (1.3)                |
| Others                         | 11 (0.7)                |
| Educational qualification      |                         |
| Less than matriculation        | 7 (0.4)                 |
| Matriculation                  | 21 (1.2)                |
| Intermediate/ +2              | 57 (3.4)                |
| Graduate                       | 539 (32)                |
| Postgraduate                   | 1041 (61.8)             |
| Diploma                        | 20 (1.2)                |
| Occupation                     |                         |
| Self-employed                  | 410 (24.3)              |
| Employed in government sector  | 413 (24.5)              |
| Employed in private sector     | 511 (30.3)              |
| Home maker                     | 86 (5.1)                |
| Unemployed                     | 77 (4.6)                |
| Retired                        | 99 (5.9)                |
| Student                        | 83 (4.9)                |
| Others                         | 6 (0.4)                 |
| Profession                     |                         |
| Doctor                         | 764 (45.3)              |
| Nurse                          | 30 (1.8)                |
| Engineer                       | 117 (6.9)               |
| Lawyer                         | 40 (2.4)                |
| Bureaucrat                     | 38 (2.3)                |
| Businessman                    | 103 (6.1)               |
| Business management consultant | 65 (3.9)                |
| Home maker                     | 87 (5.2)                |
| Politician                     | 4 (0.2)                 |
| IT professional                | 30 (1.8)                |
| Student                        | 10 (0.6)                |
| Retired                        | 5 (0.3)                 |
| Teaching                       | 64 (3.8)                |
| Others                         | 328 (19.5)              |
| Level of working               |                         |
| Not going to work              | 490 (21.1)              |
| Working from home for few hours| 299 (17.7)              |
| Working from home for usual hours| 143 (8.5)             |
| Working from home for more than usual hours| 92 (5.5) |
| Going to work for few hours    | 279 (16.6)              |
| Going to work as usual         | 160 (9.5)               |
| Going to work and doing work, more than usual hours | 67 (4.0) |
| Others                         | 147 (8.7)               |
| Details not available          | 8 (0.5)                 |

SD – Standard deviation

Effect of lockdown on one’s emotions, feelings and various aspects of life

The effect of lockdown on one’s emotions, feelings, and various aspects of life was evaluated on likert scale with the following, options “no change,” “slightly increased,” “markedly increased,” “slightly decreased,” “markedly decreased,” and “can't
say” [Table 3]. In most of the areas, majority of the participants reported no change, yet about one-third of the study participants reported slight worsening (increase) of negative emotions such as sadness (30.7%), anxiety (36%), irritability (32.2%), frustration (32.3%), and fear and apprehension (33.8%). About one-fifth of the participants reported increase in feelings of loneliness (21.3%) and fear of death (20.8%). Another 10%–15% of participants reported increase in feelings of loneliness. Slight increase in social connectedness was reported by about one-third (35.1%) of the participants. Regarding somatic symptoms, sleep, appetite and fatigue, there was slight worsening (increase) in these features in about one-fifths of responders [Table 4]. About one-third to about three-fifths of the participants reported slight or marked increase in activities such as exercise, faith in God, watching movies, internet gaming, playing indoor games, sexual activity, reading books, painting, cooking, and cleaning [Table 4]. There was marked reduction in shopping and spending in a significant proportion of the participants.

**Stress due to COVID-19 infection**

More than one-third of the participants (38.5%) had fear of getting infected with COVID-19 infection, always wore masks and protective equipment even in open spaces (37.9%), invested majority of their time reading or watching COVID-related facts (38.5%), and had anxiety when dealing with febrile patients/family members (38.8%). One-fourth of the responders reported feelings of pessimism or hopelessness (23.3%), feeling detached from others (24.0%), feeling exhausted (24.3%) and had trouble falling asleep/frequent awakenings (27.7%). Further, about one-fifth of the responders reported having avoided COVID-19-related information (20.8%), had anxiety/palpitations (19.3%) and had deterioration in the work performance (19.3%). About 30% of the participants reported of feeling irritated and angry on self or others, and with the uncertainty about frequent modifications of infection control procedures (32.0%). About one-fourth of the participants also reported fear of going out of home, because of fear of infecting family members. Only 10% of the responders reported experiencing stigma and rejection in neighborhood because of working in the hospital/being kept in quarantined facility, and a similar proportion was reluctant to work or considered resignation after discharge [Table 5].

**Relationship between anxiety, stress, sadness, mental well-being, and duration of lockdown period**

Higher level of stress, depression, and anxiety correlated positively with each other and negatively with the well-being. It was further seen that there was significant
positive correlation between the perceived stress and severity of depression with the duration of lockdown period [Table 6].

**DISCUSSION**

With no alternative ways to escape from the COVID pandemic, almost all the countries have adopted the lockdown strategy as a potentially effective strategy to fight against the COVID-19. India was also quite early in its response to impose lockdown, as early as, within 2 weeks of declaration of COVID-19 as a pandemic, i.e., March 25 (WHO declared COVID-19 to be pandemic on March 11, 2020). Even though this strategy is an important measure to tackle the exponential rise of COVID cases, it has widespread impact on the economy, psyche, and daily living of the public. In this regard, the current study was planned to evaluate the psychological impact of lockdown on the general public with an objective to assess the fear, perceived stress, and psychological problems related to lockdown due to COVID-19 pandemic in India.

Some of the strengths of the survey were that it was translated into 11 Indian languages along with English. Further, the survey questionnaires also included the evaluation of impact of lockdown on relationship with significant others and how the lockdown affected one’s emotions and feelings. Besides, the use of some self-designed questionnaire, the survey also included well-validated scales usually used for community surveys such as GAD-7, PHQ-9, PSS, and WEMWBS (for well-being).[19-22]

The prevalence rates of depressive symptoms and anxiety symptoms based on cut off scores of PHQ-9 and GAD-7

| Table 3: Effect of lockdown on relationships | Frequency (%) |
|---------------------------------------------|---------------|
| Variables                                   | No change     | Slightly improved | Markedly improved | Slightly worsened | Markedly worsened |
| Relationship with family members            | 661 (39.2)    | 563 (34.4)        | 304 (18.0)        | 122 (7.2)         | 35 (2.1)         |
| Relationship with your spouse/partner       | 277 (16.4)    | 476 (28.2)        | 799 (47.4)        | 121 (7.2)         | 12 (0.7)         |
| Relationship with children                  | 387 (23.0)    | 477 (28.3)        | 744 (44.2)        | 56 (3.3)          | 21 (1.2)         |
| Relationship with parents                   | 274 (16.3)    | 544 (32.3)        | 797 (47.3)        | 57 (3.4)          | 13 (0.8)         |
| Relationship with your neighbors            | 123 (7.3)     | 424 (25.2)        | 1042 (61.8)       | 82 (4.9)          | 14 (0.8)         |
| Relationship with your office colleagues    | 123 (7.3)     | 414 (24.4)        | 1004 (59.6)       | 127 (7.5)         | 20 (1.2)         |

| Table 4: Effect of lockdown on one’s emotions, feelings, and various aspects of life | Frequency (%) |
|---------------------------------------------|---------------|
| Variables                                   | No change     | Slightly increased | Markedly increased | Slightly decreased | Markedly decreased | Cannot say |
| Sadness                                     | 613 (36.4)    | 518 (30.7)        | 181 (10.7)        | 175 (10.4)        | 96 (5.7)          | 102 (6.1) |
| Anxiety                                     | 509 (30.2)    | 606 (36.0)        | 218 (12.9)        | 203 (12.0)        | 98 (5.8)          | 51 (3.0)  |
| Irritability                                | 595 (35.3)    | 545 (32.3)        | 213 (12.6)        | 184 (10.9)        | 97 (5.8)          | 51 (3.0)  |
| Frustration                                 | 59 (35.2)     | 545 (32.3)        | 231 (13.7)        | 146 (8.7)         | 101 (6.0)         | 69 (4.1)  |
| Loneliness                                  | 709 (42.1)    | 359 (21.3)        | 248 (14.7)        | 160 (9.5)         | 127 (7.5)         | 82 (4.9)  |
| Social connectedness                        | 579 (34.4)    | 315 (18.7)        | 167 (9.9)         | 295 (17.7)        | 268 (15.9)        | 61 (3.6)  |
| Social isolation                            | 527 (31.3)    | 378 (22.4)        | 385 (22.8)        | 176 (10.4)        | 139 (8.2)         | 80 (4.7)  |
| Fear and apprehension                       | 575 (34.1)    | 569 (33.8)        | 222 (13.2)        | 165 (9.8)         | 91 (5.4)          | 63 (3.7)  |
| Fear of death                               | 893 (53.0)    | 351 (20.8)        | 176 (10.4)        | 73 (4.3)          | 60 (3.6)          | 132 (7.8) |
| Sleep                                       | 652 (38.7)    | 367 (21.8)        | 225 (13.4)        | 285 (16.9)        | 104 (6.2)         | 52 (3.1)  |
| Appetite                                    | 880 (47.5)    | 378 (22.4)        | 182 (10.8)        | 261 (15.5)        | 39 (2.3)          | 25 (1.5)  |
| Pain                                        | 1103 (65.5)   | 190 (11.3)        | 158 (9.4)         | 97 (5.8)          | 37 (2.2)          | 100 (5.9) |
| Fatigue                                     | 836 (49.6)    | 372 (22.1)        | 162 (9.6)         | 157 (9.3)         | 98 (5.8)          | 60 (3.6)  |
| Exercise                                    | 569 (33.8)    | 376 (22.5)        | 193 (11.5)        | 247 (14.7)        | 248 (14.7)        | 52 (3.1)  |
| Substance use, including alcohol            | 1009 (59.9)   | 173 (10.3)        | 125 (7.4)         | 78 (4.6)          | 157 (9.3)         | 143 (8.5) |
| Use of social media                         | 323 (19.2)    | 489 (29.0)        | 591 (35.1)        | 140 (8.3)         | 108 (6.4)         | 34 (2.0)  |
| Faith in god                                | 844 (50.1)    | 308 (18.3)        | 358 (21.2)        | 74 (4.4)          | 67 (4.0)          | 34 (2.0)  |
| Watching movies                             | 515 (30.6)    | 534 (31.7)        | 436 (25.9)        | 107 (6.4)         | 58 (3.4)          | 53 (2.1)  |
| Internet gaming                             | 913 (54.2)    | 311 (18.5)        | 269 (16.0)        | 57 (3.4)          | 50 (3.0)          | 85 (5.0)  |
| Playing indoor games (without using the gadgets) | 813 (48.2)    | 417 (24.7)        | 227 (13.5)        | 69 (4.1)          | 54 (3.2)          | 105 (6.2) |
| Sexual activity                              | 945 (56.1)    | 241 (14.3)        | 165 (9.8)         | 109 (6.5)         | 112 (6.6)         | 113 (6.7) |
| Shopping                                    | 477 (28.3)    | 196 (11.6)        | 61 (3.6)          | 188 (11.2)        | 707 (42.0)        | 56 (3.3)  |
| Spending                                    | 377 (22.4)    | 160 (9.5)         | 60 (3.6)          | 370 (22.0)        | 681 (40.4)        | 37 (2.2)  |
| Reading books                               | 599 (35.5)    | 529 (31.4)        | 264 (15.7)        | 133 (7.9)         | 114 (6.8)         | 46 (2.7)  |
| Drawing/painting                            | 1018 (60.4)   | 252 (15.0)        | 211 (12.5)        | 23 (1.4)          | 33 (2.0)          | 148 (8.8) |
| Cooking                                     | 596 (35.4)    | 461 (27.4)        | 449 (26.6)        | 72 (4.3)          | 42 (2.5)          | 65 (3.9)  |
| Cleaning                                    | 380 (22.6)    | 603 (35.8)        | 505 (30.0)        | 118 (7.0)         | 52 (3.1)          | 27 (1.6)  |
Table 5: Stress due to coronavirus disease-19 infection

| Variable                                                                 | Frequency (%) |
|--------------------------------------------------------------------------|---------------|
| Feared getting infected more severely with corona virus                   | 648 (38.5)    |
| Feeling pessimism or hopelessness                                         | 393 (23.3)    |
| Absence of emotional response - feeling numb/no happiness or sadness     | 324 (19.2)    |
| Feeling exhausted                                                         | 409 (24.3)    |
| Reduced awareness or being in a daze/feeling confused/unable to think clearly | 311 (18.5) |
| Feeling detached from others                                              | 404 (24.0)    |
| Always wore mask and protective equipment even in open spaces             | 639 (37.9)    |
| Invest majority of free time reading or watching corona virus-related information | 649 (38.5) |
| Anxiety when dealing with febrile patients/family members                 | 653 (38.8)    |
| Avoided corona virus related information                                   | 350 (20.8)    |
| Had anxiety/palpitations                                                 | 325 (19.3)    |
| Felt irritated/anxious on self or others                                  | 526 (31.2)    |
| Had trouble falling asleep/frequent awakening                             | 467 (27.7)    |
| Uncertainty about frequent modification of infection control procedures   | 540 (32.0)    |
| Poor concentration and felt indecisive                                    | 409 (24.3)    |
| Affraid to go to home because of fear of infecting family                | 402 (23.9)    |
| Deteriorating work performance                                            | 325 (19.3)    |
| Reluctant to work or consider resignation after discharge                 | 163 (9.7)     |
| Depressed mood - feeling low most part of the day                         | 276 (16.4)    |
| Stigmatization and rejection in neighborhood because of hospital work/being kept in quarantined facility | 173 (10.3) |

Table 6: The association between day of response of lockdown with reported perceived stress, sadness, anxiety, and mental well-being during lockdown

| Variables                        | Total PSS score, r (P) | Total GAD score, r (P)* | Total PHQ-9 score, r (P)* | Total well-being score, r (P) |
|----------------------------------|------------------------|-------------------------|---------------------------|-----------------------------|
| Total GAD score                  | 0.528***               |                          |                           |                             |
| Total PHQ-9 score                | 0.321***               | 0.448***                 |                           |                             |
| Total well-being score           | -0.469***              | -0.481***                | -0.391***                 | -0.006 (0.810)              |
| Days of response of lockdown     | 0.062 (0.011)*         | 0.031 (0.197)            | 0.053 (0.029)*            |                             |

*Spearman correlation coefficient. GAD – Generalized anxiety disorder; PSS – Perceived stress scale; PHQ – Patient health questionnaire.

were 10.5% and 38.2%, respectively. A comparison of our findings with those of the National Mental Health Survey (NMHS)\[23\] shows that psychiatric morbidity of common mental illnesses may be higher in our study (40.5%) than the estimated prevalence of 10% in the NMHS.\[24\] It can be argued that the significantly higher prevalence of psychiatric morbidity in the present study compared to the NMHS may be due to the use of different sampling methods and use screening instruments (whereas NMHS employed Mini International Neuropsychiatric Interview), but the screening instruments have been found to have high sensitivity and specificity against the diagnosis made by mental health professionals.\[25,26\] Thus, the difference in the prevalence rates cannot be completely attributed to the difference in the methodology. Hence, it is possible that lockdown period has led to a significant increase in the mental morbidity of mostly milder intensity in the general public. A web-based survey from China, which evaluated the psychological problems among the Chinese people (n = 1074) close to the COVID-19 epidemic peak and subsequent lockdown, reported anxiety (mild/moderate/severe as evident from Beck’s Anxiety Inventory) in 29% of participants and depression (mild/moderate/severe as evident from Beck’s Depression Inventory) in 37% of participants, and poor mental well-being in one-third of its participants.\[27\] The prevalence of anxiety found in the present study is comparable to the previous study from China, but the prevalence rate of depression is lower. The lower rate of depression in the present survey, compared to the study from China, could be due to the difference in the timing of the study, in terms of the number of COVID-19 cases in the country. The present survey was done at the beginning of the epidemic in the country, compared to the survey from China, which was done, close to the peak of epidemic. The association of higher prevalence of depression, close to the peak of the epidemic, can be understood by the fact that the COVID-19 was associated with higher mortality rate in China, compared to current statistics from India. In the present study too, the association of depression and longer duration of lockdown was seen, which could be an indicator of increase in prevalence of depression with an increase in the number of cases of COVID-19 infection. The prevalence of mild-to-moderate anxiety and depression, in 40.5% of the participants in the present survey indicate that the pandemic and the lockdown is having a big toll on the mental health of people in the country and suggest an urgent need to address the same. The Indian Psychiatric Society took a lead in this direction, in the early stages of the lockdown, by providing free mental health aid to the people desirous of seeking mental health care.
In the present survey, 47.1% of the participants were HCWs and when the prevalence of psychiatric morbidity was compared between the HCWs, when the mild depression (i.e., PHQ-9 score of 5-9) was also included as an indicator of depression. However, when the cut-off of ≥ 10 was used for depression, there was no significant different between the 2 groups. and non-HCWs, it was seen that the prevalence of depression to be significantly higher among the non-HCWs. Existing literature on the mental health problems faced by the HCWs in China during the COVID-19 crisis suggests a significant proportion of HCWs (36.9%) suffered from subthreshold mental health disturbances (as assessed by PHQ-9, GAD-7, Insomnia Severity Index)[28] and about 22.4%–50% of HCWs reported experiencing depression, anxiety, significant distress and insomnia.[29] Our findings are comparable to these studies among HCWs, if mild anxiety disorders and mild depression are taken into account.

In the present study, in general, majority of the participants reported positive impact of the lockdown on the relationship dimension in terms of relationship with parents, children, spouse, colleagues, and neighbors. The improved relationship could be attributed to the availability of more free time, less work pressure and possible fulfillment of long desired free time. Findings of the present study are supported by many available websites/blogs, which have reported positive aspects of lockdown such as improvement in air quality/healing of nature,[30] making people realize value of re-connecting with families,[31] and improvement in love/dating and family relationships.[32] However, the improved relationship dimensions could also be attributed to the fact that, when everyone is fighting a common enemy, the interpersonal relationship issues are forgotten, which is possibly reflected as improved relationships.[33,34] Another explanation for the improved relationship could be a fear of death, which often makes people perceive themselves as weak, and hence, have less initiative to fight with others.[35]

However, despite improvement in the interpersonal dimension, there was increase in the prevalence of negative emotions such as sadness, loneliness, anxiety, frustration, and fear and apprehension in about one-third to nearly half of the participants. These findings again support the possible increase in the prevalence of depression and anxiety, in the wake of the pandemic. When asked about the COVID-19 infection per se, about one-fourth to one-third of the participants reported presence of symptoms related to possible COVID-19 infection to be stressful. Some of the other reported areas for which a significant proportion of participants reported significant stress were fear of getting infected with COVID-19 infection, always wore masks and protective equipment even in open spaces, invested majority of their time reading or watching COVID related facts, had anxiety when dealing with febrile patients/family members, feelings of pessimism or hopelessness, feeling detached from others, feeling exhausted and had trouble falling asleep/frequent awakenings, avoiding COVID-19-related information, having anxiety/palpitations, deterioration in the work performance and some experiencing stigma and rejection due to their profession related to HCWs or due to being under quarantine. All these findings reflect the fear of infection of contracting COVID-19. While fear of contracting COVID-19 can be considered as justified, considering the worldwide mortality and infection rates, but these could also be attributed to the issues such as media hype and prevailing myths related to COVID-19 infection.

This survey has certain limitations. Despite attempts to circulate widely in all possible social media platforms, wider participation was expected. Accordingly, it can be said that the response rate for the survey was low. About half of the participants were doctors, which suggest that the survey did not have the desired snowballing effect, as much as it was expected. A majority of the participants were postgraduates, which was possibly again influenced by the higher proportion of participants being doctors. The survey was limited to those, who had access to a smart phone device and it can be said that the study participants may not be representative of people from various strata of the country. However, considering the situation, this was the possible best methodology to reach to the people to understand the psychological impact. These limitations suggest that the findings may not be generalizable to every strata of the society.

CONCLUSIONS

To conclude, the present survey suggests that more than two-fifth of the people are experiencing anxiety and depression, due to lockdown and the prevailing COVID-19 pandemic. This finding suggests that there is a need of expanding the mental health services to everyone in the society during this pandemic situation.

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Conflicts of interest

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