



Original Research Article

Psychological impact of COVID-19 Pandemic: An internet based survey

Akhilesh Jain¹, Naman Jain², Manish Kumar Goyal³, Kuldeep Singh Yadav^{4,*},
Neelam Yadav⁴, Pradhyumn Kumar⁵

¹Dept. of Psychiatry, ESIC Model Hospital, Jaipur, Rajasthan, India

²Amity University, Noida, Uttar Pradesh, India

³JLN Medical College, Ajmer, Rajasthan, India

⁴ESIC Model Hospital, Jaipur, Rajasthan, India

⁵SMS Medical College, Jaipur, Rajasthan, India



ARTICLE INFO

Article history:

Received 31-01-2022

Accepted 14-04-2022

Available online 31-07-2023

Keywords:

COVID-19

Mental health

ABSTRACT

Introduction & Objectives: COVID-19 Pandemic has caused tremendous turmoil across the world. Disease and measures to control it can cause fear and stress in many individuals, which in turn may lead to various mental health issues. This study was planned to find out various psychological issues in general public during lockdown period.

Materials and Methods: This was an online internet based survey using a self-designed questionnaire, including socio-demographic profile, clinical profile, and questions about various psychological symptoms.

Results: Repeated thoughts about corona were significantly higher in person with current psychiatric conditions. Sadness was reported significantly higher in non-medical person than the health care workers. Sadness was reported more by female participants and person with current psychiatric illness. Similarly person with current psychiatric illness reported more disturbed sleep, excess worries, and dysfunctions in life.

Conclusion: Major concern about future along with higher reporting of symptom profile suggestive of depression, anxiety, obsessive compulsive disorder, substance craving, and health related anxiety signifies that during Covid-19 period, people are at higher risk of developing mental health issues.

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](#), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

1. Introduction

Corona Virus Disease or COVID19 is a viral disease that started spreading from Wuhan, China.¹ Since its origin, there has been wide spread of the disease across the world. World Health Organization² has declared COVID-19 as pandemic. Deteriorating health conditions in other countries due to Covid-19 has prompted India to invoke nationwide lockdown in March 2020.³ Locking down forces people to stay at their home in order to curtail the viral spread. People can't go to their work regardless of its importance.

* Corresponding author.

E-mail address: dr.kuldeepyadav29@gmail.com (K. S. Yadav).

Lock down may also impose a sense of financial insecurity to general public. Fear of disease, isolation, restrictions on social connectedness and financial crisis may lead to poor mental health that can range from poor adjustment/coping, exacerbation/relapse of preexisting psychiatric illnesses, to emergence of new psychiatric disorders.

Psychiatric fallouts include, anxiety related issues that may take form of Generalized Anxiety Disorder(GAD), panic attacks with concern of losing control or impending doom and getting house bound, fear of death, depression, insomnia, preoccupation about getting infected with COVID-19 at first sneeze, flare-up of OCD regarding

contamination with associated compulsive washing or needlessly compulsive hoarding of groceries.

Some might cope, in maladaptive way, by use of alcohol and other substances. Once the pandemic is over, few of those affected might suffer PTSD with flashbacks and nightmares. Enduring personality changes might also result.

All this emphasize the pivotal role psychiatry in this crisis. Psychiatrists are in fact in a position to offer a balanced perspective to improve the knowledge, attitude and practices about the illness as well as addressing the generalized anxiety and apprehension.⁴

There are not many research studies available^{5–7} that can guide us to assess the impact, this pandemic would have on mental health of the people.

This study is planned to evaluate various psychological symptom likely to take place during this pandemic among health care personnel and general population. This may guide health authorities in assessment and proper management of mental conditions in current scenario and when lock down revokes.

2. Materials and Methods

This was a cross-sectional observational study conducted via online survey after taking permission from ethical committee and online informed consent. The survey was started during the period of lock down and lasted for ten days. A self-designed questionnaire was floated across the country through different social platforms. The survey covered almost every part of the country. As such no exclusion criteria were defined except the age of participants which should have been above eighteen years. Total 672 responses were received at the end of the survey.

2.1. Tools

A self-designed internet-based questionnaire was prepared consisting of five parts was introduced. Part I and part II included general introduction and consent respectively. Socio-demographic profile was included in Part III. Part IV explored the information about any current or past psychiatric or medical illnesses whereas part V comprised of questions regarding common psychological symptoms sine qua non for various psychiatric illnesses such as Anxiety, Depression, Obsessive Compulsive Disorders (OCD), Hypochondriasis, Substance Use Disorder with responses to be given in yes or no.

2.2. Statistical analysis

All data collected were entered into Microsoft excel 2007 worksheet in the form of master chart. These data were classified and analyzed as per the aims and objectives. The data on sample characteristics was described in the form of tables and graphs whenever it was applicable. Qualitative data was expressed in terms of percentage and proportions.

Inferential statistics- Chi square test was used to find out association of various factors. The “Microsoft Excel”, and “Medcalc 12.2.1.0 version” software was used for analysis of the Data.

3. Results

Out of total 679 subjects who attempted the survey, 672 consented and completed the questionnaire.

Survey included independent psychological symptoms. Table 1 shows that nearly half of them were between age ranges of 25-44 years. Male participants constituted 3/4th of the pool. Most of the subjects were married (82.3%), and only 15.2 % were unmarried. Nuclear family predominated the family structure constituting 53.5% of study population followed by joint family (46.55%). Most of the participants were post graduates (70.4%) and graduates (28.3%). More than half of the study subjects were either government and private sector employees. Large number (43.3%) of participants was working for health services at the time of survey. Most of the participants (94.9%) didn't have any past or present psychiatric illnesses however approximately quarter of them had one or more chronic medical illnesses.

Table 2 depicts various psychological symptoms reported by participants. Almost all of them (99.6%) were aware about current corona pandemic. Uncertainty was present in 46.9% participants, followed by loss of pleasure in 34.7%.

Nearly 15% of the participants had corona related thoughts and similar percentage also felt it hard to control these thoughts. Almost 1/4 of the total subjects felt distressed by these thoughts. Sadness (27.5%) and decreased energy level (22.8%) was reported by approximately 1/4th of the participants. Symptoms such as sleep disturbances and poor concentration were informed by 20.7 % and 19.3 % participants respectively, whereas change in appetite and undue worries were present in 16.2% and 17.1 % study subjects respectively. Among 10.4 % participants who reported consuming alcohol or other substance of abuse, 2.4% reported craving as well. Fear of having been infected with the disease was present in 4.5 % responders. Adverse impact caused by reported symptoms on social, personal and occupational life was reported by 13.2 percent individuals.

Table 3 describes association between clinical symptoms and participants profile. In the present study, repeated corona thoughts and dreams were more commonly reported by non-health worker group (16.01%) than the health workers (14.09%); females (19.53%) as compared to males (13.72%) and participants living in nuclear family (16.43%); more in participants between age of 35 years to 64 years in comparison to younger age and older age(>65 years); in participants who were undergoing treatment for any psychiatric illness (34.78%) in comparison to participants who were not under any treatment for any psychiatric illness(14.48%). On application of chi-square

Table 1: Socio-demographic profile

		Number (%)	Total (%)
Age in years	18-24	39(5.8)	
	25-34	170(25.3)	
	35-44	202(30.0)	
	45-54	156(23.2)	672(100)
	55-64	79(11.8)	
	65-75	22(3.3)	
	>75	4(.5)	
Gender	Male	503(74.9)	
	Female	169(25.1)	672(100)
Marital status	Married or live in	553(82.3)	
	Unmarried	102(15.2)	
	Seperated	5(0.7)	672(100)
	Widow or widower	5(0.7)	
	Divorcee	7(1)	
Family	Joint	312(46.5)	
	Nuclear	359(53.5)	671(100)
Education	Upto class 10	9(1.3)	
	Graduate	190(28.3)	672(100)
	Postgraduate	473(70.4)	
Occupation	Government	224(33.3)	
	Private	194(28.9)	
	Business	103(16.1)	
	Home maker	37(5.5)	672(100)
	Student	41(6.1)	
	Retired	28(4.2)	
	Unemployed	10(1.5)	
	Others	35(5.2)	
Works in health services	Yes	291(43.3)	
	No	381(56.7)	672(100)
History of past Psychiatric illness	Yes	34(5.1)	671
	No	637(94.9)	
Current psychiatric illness	Yes	23(3.4)	672
	No	649(96.6)	
Suffering from chronic medical illnesses	Yes	175(26.1)	670
	No	495(73.9)	

Table 2: Clinical variables

	Yes	No	Total n(%)
Knowledge about corona	669(99.6)	3(0.4)	672(100)
Repeated thoughts and dreams about corona	102(15.2)	570(84.8)	672(100)
Feel distressed by corona thoughts	164(24.4)	508(75.6)	672(100)
Able to stop corona related thoughts	573(85.3)	99(14.7)	672(100)
Sleep disturbance	139(20.7)	533(79.3)	672(100)
Disturbed appetite	109(16.2)	563(83.8)	672(100)
Sadness	185(27.5)	487(72.5)	672(100)
Decreased energy level	153(22.8)	519(77.2)	672(100)
Loss of pleasures	233(34.7)	439(65.3)	672(100)
Uncertainty	315(46.9)	357(53.1)	672(100)
Fear of getting infected by Corona	30(4.5)	642(95.5)	672(100)
Excess worries	115(17.1)	557(88.9)	672(100)
Tension and tremors	52(7.8)	620(92.2)	672(100)
Poor concentration	130(19.3)	542(80.7)	672(100)
Palpitation, sweating, dryness of mouth	55(8.2)	617(91.8)	672(100)
Substance dependence	70(10.4)	602(89.6)	672(100)
Craving for substance	16(2.4)	656(97.6)	672(100)
Dysfunction in social, personal and work due to above mentioned symptoms.	88(13.2)	581(86.8)	669(100)

test, however significant association was found only in case of participants taking treatment for present psychiatric illness.

Similarly, it was found that more number of non-health workers (30.97%) in comparison to health workers (23.02%), females (36.69%) in comparison to males (24.45%), and participants presently under treatment for any psychiatric illness (78.26%) in contrast to those without any psychiatric treatment history (25.73%), were feeling sad. On applying chi-square test Association of feeling unhappy was found significant with health worker status ($p=0.028$), gender ($p=0.003$) and psychiatric illness treatment history ($p<0.01$). However no significant association was found between feeling unhappy and age and family structure.

In our study we found that health workers (19.93%), male gender (18.89%), participants living in joint family (19.17%) and participants without any present treatment history of any psychiatric illness (19.41%) were less prone to sleep disturbances as compared to non-health workers (21.26%), female gender (26.04%), of joint family (19.17%) and participants with history of Present psychiatric treatment (56.52%) respectively. However significant association was found only between history of Present psychiatric treatment and sleep disturbances ($p<0.01$ HS). In all other, association was found non-significant ($p=0.05$) on applying chi-square test.

Similarly, significant association was observed between excessive worry and current psychiatric treatment ($p<0.01$ HS) where excessive worry was reported more in number by participants taking psychiatry treatment [13 out of 23 (56.52%)] in comparison to those with no such history [104 out of 649(16.02%)]. It was also observed that non-health

workers(19.16%), female gender (18.93%), and nuclear family (17.2%) participants were experiencing excessive worry more commonly in comparison to health workers (14.4%), male gender (16.50%) and joint family participants (16.%) but association, on applying chi-square test, was found non-significant [$p>0.05$].

In the present study, however when considering effects on various aspects of life (personal, family, social, vocational), it was observed that negative effect was observed among healthcare workers [87 out of 291(29.90%)] significantly higher [$p<0.01$ HS] than non-healthcare workers [52 out of 381(13.65%)]. Similarly highly significant association ($p<0.01$ HS) was seen between negative impact on various aspects of life and present treatment of psychiatric illness. Only 12.33% participants (80 out of 649) without present psychiatric treatment experienced negative impact as compared to those taking psychiatric treatment [39.13%(9 out of 23)]. In other cases, on applying chi-square test, no significant associate was observed.

4. Discussion

Survey included independent psychological symptom and not the diagnostic criteria of common psychiatric illnesses considering the complexity in choosing from multiple options in each question while submitting the survey in the absence of clinician which could have caused the participants feeling disinclined to complete the survey. Apart from this, suggesting a diagnosis to the responders itself could lead them to averse from the study considering the stigma great stigma attached to psychiatric diseases in

Table 3:

1	Repeated thoughts about corona			
	No N(%)	Yes N(%)	Total N(%)	2 test;DF;p value
Current psychiatric illness				5.620 at 1 DF; P = 0.018 S
No	555(85.52)	94(14.48)	646(100)	
Yes	15(65.22)	8(34.78)	23(100)	
Total	570(84.82)	102(15.18)	672(100)	
2	Sadness			
	No N(%)	Yes N(%)	Total N(%)	
Health worker				4.832 at 1 DF; P = 0.028 S
No	263(69.03)	118(30.97)	381(100)	
Yes	224(76.98)	67(23.02)	291(100)	
total	487(72.47)	185(27.53)	672(100)	
Gender	No N(%)	Yes N(%)	Total N(%)	8.885 at 1DF; P = 0.003 S
Male	380(75.55)	123(24.45)	503(100)	
Female	107(63.31)	62(36.69)	169(100)	
Total	487(72.57)	185(27.53)	672(100)	
Current psychiatric illness	No N(%)	Yes N(%)	Total N(%)	25.690 at 1DF; P = 0.000 HS
No	482(74.27)	167(25.73)	649(100)	
Yes	5(21.74)	18(78.26)	23(100)	
Total	487(72.47)	185(27.53)	672(100)	
3	Disturbed sleep			
Current psychiatric illness	No N(%)	Yes N(%)	Total N(%)	13.833 at 1DF; P = 0.000 HS
No	523(80.59)	126(19.41)	649(100)	
Yes	10(43.48)	13(56.52)	23(100)	
Total	533(79.32)	139(20.68)	672(100)	
4	Excess worries			
Current psychiatric illness	No N(%)	Yes N(%)	Total N(%)	22.596 at 1DF; P = 0.000 HS
No	545(83.98)	104(16.02)	649(100)	
Yes	10(43.48)	13(56.52)	23(100)	
Total	557(82.89)	115(17.11)	672(100)	
5	Dysfunction in social , personal and work			
Healthworker	No N(%)	Yes N(%)	Total N(%)	15.541 at 1DF; P = 0.000 HS
No	329(86.35)	52(13.65)	381	
Yes	254(87.29)	87(29.90)	291	
Total	583(86.76)	89(13.24)	672	
Current psychiatric illness	No N(%)	Yes N(%)	Total N(%)	11.654 at 1DF; P = 0.000 HS
No	569(87.67)	80(12.33)	649(100)	
Yes	14(60.87)	9(39.13)	23(100)	
Total	583(86.76)	89(13.24)	672(100)	

India.⁸

Most of the participants were young and middle aged males and nearly half of the participants were working in the health sector. This age group tends to use more internet and social sites and much comfortable in answering questions candidly as compared to other age group and females. Health personnel's probably being much acquainted with the knowledge about the disease, its course and outcome participated largely in this survey.

There was a high level of concern in participants about future as nearly half (46.9%) of the them reported

uncertainty. Rapid and widespread nature of the illness, non-availability of definitive treatment, unpredictable period of long home stay due to lock down, staying away from social contacts, financial insecurities, flooding of misinformation on social media, exposure to Covid 19 related news all the time are some of the factors which may have contributed in development of insecurity about future

Significant number of subjects reported uncontrollable corona related thoughts and felt distressed with these thoughts. Twenty four percent of the total subjects were feeling distresses with these thoughts. This signifies greater

propensity of developing obsessive symptoms and warrants further clinical evaluation to establish a clinical diagnosis. Repeated exposure to such news about Covid 19 and its spread, consistent preoccupation with reported symptoms of Corona and apprehension regarding treatment outcome may have predisposed these persons to develop these thoughts. A study conducted on 393 undergraduate students, in 2013, revealed that OC beliefs and OC symptoms significantly predicted Swine Flu fears, while disgust sensitivity significantly mediated the relationship between both OC beliefs and OC symptoms.⁹

Symptom profile suggestive of depression was present in nearly 1/4th of the respondents. They reported loss of pleasure (34.7%), sadness (27.5%), decreased energy level (22.8%), sleep disturbance (20.7%), poor concentration (19.3%), and disturbed appetite (16.2%). These data highlights the uprising of these symptoms as the prevalence of depressive disorder in India is estimated to be 3.3% in a recent study.¹⁰ Further use of a scale that can diagnose and quantify the severity of depression can be helpful in assessing the exact estimate of depression.

A meta-analysis done on suspected or confirmed cases of corona virus infection, reported depressed mood in 32.6%, impaired memory in 34.1%, and insomnia in 41.9% of participants. The same study reported presence of depressed mood in 14%, insomnia in 12.1%, and impaired memory in 18.9% individuals in their post-illness stage.¹¹ A study on general population after Ebola out break revealed that 48% of individuals reported at least 1 symptom of anxiety or depression, with 6% meeting the clinical cutoff definition.¹²

Uncertainty about future prospects, staying at home unwillingly with disturbed routine, spread of fear of disease through various sources, impending financial implications and worrying about job loss plausibly explains occurrence of these psychological symptoms.

Anxiety was also common. Approximately seventeen percent people reported excessive worries and nearly 8% reported palpitation, sweating, tension, and dryness of mouth. These reported symptoms indicates toward higher level of anxiety during pandemic as the prevalence of anxiety disorders in adult population in India as reported in a recent study is 3.3%.¹⁰

The meta-analysis by Jonathan et al.¹¹ reported anxiety in 35.7% in subjects with acute illness and 12.3% in subjects with post-illness stage.

In present study few (4.5%) of the respondents had belief of having been infected with corona infection despite the reassurance by family members. It was established by a study that Health anxiety is a common feature in anxiety disorders, including OCD, panic disorder, and phobias.¹³ This type of feeling is likely to occur in anxious person who has been much exposed to Covid 19 related news. This finding necessitates further evaluation of such person to confirm if they had somatoform disorder.

Many of the subjects (10.4%) reported history of substance dependence. Lock down imposed by government to contain corona infection forced people to stay at home. During the time of survey 2.4% study population reported craving for the substance which may have been due to non-availability of the substance during this lockdown period. Dysfunction in social, personal and occupational life was present in 13.2% individuals due to reported psychological symptoms. The dysfunctioning underlines the fact that many of the study participants would have required psychiatric help after clinical confirmation of their diagnosis.

Attempt to find out any association between clinical symptoms and other variables revealed significant association in few categories.

Persons who had psychiatric illness at the time of survey, reported significantly higher level of repeated thoughts about corona, excess worries, disturbed sleep, sadness, and dysfunction in social, personal, and occupational life. The reported psychological symptoms may have been the manifestation of existing psychiatric illness. Moreover, persons with current psychiatric illness are more likely to have poor adaptability and coping resources to handle the stress of ongoing pandemic predisposing them more vulnerable to develop psychological problems as reported in this study. In a recent study during corona pandemic psychiatric patients demonstrated higher symptoms of PTSD, depression, anxiety, stress and insomnia, worries about physical health, anger and irritability and suicidal ideation as compared to healthy controls.¹⁴

Number of health workers who reported sadness was significantly lower in comparison to other participants. The knowledge and awareness about the illness, habit of seeing sick patients in day to day clinical practice probably make them less vulnerable. On the other hand significantly higher number of health workers reported dysfunction in their social personnel and occupational life. Strict duty schedule during pandemic, long duty hours, exposure to high risk, staying away from family, limited availability of resources are some of the factors may be hold accountable for this finding. Greater number of female participants reported sadness as compared to male. Comparatively lesser accessibility to accurate information about the illness, limited social connectedness in lockdown period, increased household responsibilities may have accounted for this observation. This finding is in line with previous studies reporting higher prevalence of depression in female.¹⁵

5. Conclusion

This internet based survey highlights the importance of mental health assessment of population in this COVID-19 situation. Early assessment and treatment may halt the progression of psychological symptoms into a syndromal psychiatric diagnosis. This study also finds out the

vulnerability of specific population for psychological issues in this pandemic. Mental health experts can plan their strategy accordingly to control the possible surge in mental illnesses during and after the COVID-19 pandemic.

6. Limitations

1. Sample population and its size cannot be clearly defined as survey link could have been forwarded to as many people as possible.
2. Study can't be generalized to whole population.
3. Sample size is not fixed as survey can be forwarded to many people.
4. Subjects may feel difficulty in understanding few questions in absence of clinician at the time of survey.

7. Conflict of Interest

None.

8. Source of Funding

None.

Acknowledgments

None.

References

1. Wang H, Wang Z, Dong Y, Chang R, Xu C, Yu X, et al. Phase-adjusted estimation of the number of Coronavirus Disease 2019 cases in Wuhan, China. *Cell Discov*. 2020;6(1):1–8.
2. World Health Organization; 2020. Available from: https://www.who.int/healthtopics/coronavirus#tab=tab_1.
3. BBC (2020) India's 1.3bn population told to stay at home. (2020). Retrieved April 3rd 2020. Available from: <https://www.bbc.com/news/world-asia-india-52024239>.
4. Banerjee D. The COVID-19 outbreak: crucial role the psychiatrists can play. *Asian J Psychiatr*. 2020;p. 102014. doi:10.1016/j.ajp.2020.102014.
5. Boldog P, Tekeli T, Vizi Z, Dénes A, Bartha FA, &röst G, et al. Risk assessment of novel coronavirus COVID-19 outbreaks outside. *J Clin Med*. 2020;9(2):571. doi:0.3390/jcm9020571.
6. Goyal K, Chauhan P, Chhikara K, Gupta P, Singh MP. Fear of COVID 2019: First suicidal case in India. *Asian journal of psychiatry*. 2020;49:101989. doi:10.1016/j.ajp.2020.101989.
7. Bhat R, Singh VK, Naik N, Kamath R, Mulimani P, Kulkarni N. COVID 2019 Outbreak: The disappointment in Indian Teachers. *Asian Journal of Psychiatry*. 2020;p. 102047–102047.
8. Grover S, Shouan A, Sahoo S. Labels used for persons with severe mental illness and their stigma experience in North India. *Asian J Psychiatry*. 2020;48:101909. doi:10.1016/j.ajp.2019.101909.
9. Brand J, McKay D, Wheaton MG, Abramowitz JS. The relationship between obsessive compulsive beliefs and symptoms, anxiety and disgust sensitivity, and Swine Flu fears. *J Obsessive Compuls Relat Disord*. 2013;2(2):200–6. doi:10.1016/j.jocrd.2013.01.007.
10. India State-Level Disease Burden Initiative Mental Disorders Collaborators. The burden of mental disorders across the states of India: the Global Burden of Disease Study. *Lancet Psychiatry*. 1990;7(2):148–61. doi:10.1016/S2215-0366(19)30475-4.
11. Rogers JP, Chesney E, Oliver D, Pollak TA, McGuire P, Fusar-Poli P, et al. Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic. *Lancet Psychiatry*. 2020;7(7):611–27. doi:10.1016/S2215-0366(20)30203-0.
12. Jalloh MF, Li W, Bunnell RE. Impact of Ebola experiences and risk perceptions on mental health in Sierra Leone. *BMJ Glob Health*. 2015;3:471. doi:10.1136/bmjgh-2017-000471.
13. Taylor S, Asmundson GJG. Treating health anxiety: A cognitive-behavioral approach. New York: Guilford; 2004.
14. Hao F, Tan W, Jiang L, Zhang L, Zhao X, Zou Y, et al. Do psychiatric patients experience more psychiatric symptoms during COVID-19 pandemic and lockdown? A case-control study with service and research implications for immunopsychiatry. *Brain Behav Immun*. 2020;87:100–6. doi:10.1016/j.bbi.2020.04.069.
15. Albert PR. Why is depression more prevalent in women? *J Psychiatry Neurosci*. 2015;40(4):219–21.

Author biography

Akhilesh Jain, HOD

Naman Jain, Student

Manish Kumar Goyal, Senior Resident  <https://orcid.org/0000-0002-0828-3522>

Kuldeep Singh Yadav, Senior Resident  <https://orcid.org/0000-0001-8773-3861>

Neelam Yadav, Model Officer

Pradhyumn Kumar, Intern

Cite this article: Jain A, Jain N, Goyal MK, Yadav KS, Yadav N, Kumar P. Psychological impact of COVID-19 Pandemic: An internet based survey . *Panacea J Med Sci* 2023;13(2):316–322.