

IMPACT OF CORONA VIRUS DISEASE (COVID-19) ON MENTAL HEALTH: A COMPARATIVE STUDY

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ABSTRACT

Background: Corona Virus disease (Covid-19) has been declared a notified disease and public health emergency of global concern. The fast-emerging mental health problems can disturb people's general well-being and have enormous potential to influence the health system; therefore, they need immediate and urgent action and attention leading to this study. **Aims & objectives:** To compare mental health issues among the normal and Covid-19 infected individuals on the sub-scales somatic complaints, obsessive-compulsive, phobias, traumatic stress, anxiety, and anxiety-related disorders. **Materials & Methods:** The participants in this study were a total n= 500 out of which n=250 were noninfected and 250 were covid-19 infected patients, age range from 18 years to 50 years. Data were collected randomly from various Covid-19 hospitals of Jaipur. For non-infected samples data were collected from different parts of Jaipur. Both the participants were administered a personality assessment scale and assessed on the subscales i.e. conversion, somatization, health concerns, cognitive, affective, physiological, obsessive-compulsive, phobias, and Post-trauma stress disorder. Each Subscale consists of eight items (Total Items are seventy-two) **Results:** The present study indicates all scales except conversion, i.e. somatization, health concerns, cognitive, affective, physiological, obsessive-compulsive, phobias, and post-trauma stress disorders have significant differences among the normal and covid-19 infected patients while conversion has a non-significant difference. **Conclusion:** Based on research findings associated with mental health issues of covid-19 infected patients, the further attempt must be encouraged to understand various facets of mental health and appropriate interventions should be introduced by mental health professionals and policymakers at a world level so that a large section of our society can be benefited.

Keyword:- covid-19, anxiety, conversion, phobias, obsessive-compulsive, traumatic stress.

INTRODUCTION

The coronavirus disease (covid-19) is a highly infectious disease caused by the coronavirus which has affected millions of people worldwide and the number is still increasing. It was started in Wuhan city of China. (1) An estimated average mortality rate of this disease is 3.4 % globally. (2,3)

The world health organization declared it a public health emergency of international concern on January 30, 2020. Considering the enormity of the problem beyond the coping capacity of the

community of the affected area and substantial human suffering, covid-19 has been recognized as a notified disaster by the government of India.

In Rajasthan, the first case of Covid-19 was reported in SMS hospital, Jaipur on 29-02-2020. Within the next 3 months, the total number of Covid-19 patients increased to 1249 including 96 health care workers. (4)

We have seen in recent months that routine health services, including mental health care are badly affected in many countries, including India. At the same time, several media are suggesting an increase in mental health problems such as depression, anxiety, post-traumatic stress, insomnia, obsession, and panic attacks among the general public, health workers, as well as people who are kept in isolation (due to infection with coronavirus or contact with infected persons). (5)

The fast-emerging mental health problems can disturb people's general well-being and have enormous potential to influence the health system; therefore, they need immediate and urgent action. There are many risk factors during this pandemic that are attributed to the development of mental illnesses such as female gender (6,7,8) children (9), old age (10) comorbidities (6) family history of mental illness (7) poor socioeconomic status, loneliness (6,11) poor social support (12) unemployment, poor coping skills (13) poor mental health (14)

The present study aims to compare the sub-scales of somatic complaints, obsessive-compulsive, phobias, traumatic stress, anxiety, and anxiety-related disorders among the non-infected (non-covid) individuals and Covid-19 infected individuals.

MATERIALS & METHODS:

The total number of participants in this study was 500. Out of 500 (n= 500), 250 were covid-19 infected person and 250 non-infected people between the age group of 18 to 50 years. The sample was randomly selected from different covid-19 treating hospitals in Jaipur, Rajasthan, and Non-infected persons selected randomly from different parts of Jaipur, Rajasthan. Both the participants were administered a personality assessment scale.

Personality assessment scale: It is a self-administered, objective scale of adult personality use to provide information on the clinical variables. The personality assessment scale comprises 22 overlapping full scales, i.e., 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales.

4 validity scales comprise inconsistency (10 pairs of items), infrequency (8 items), a negative impression (9 items), a positive impression (9 items).

11 clinical scales are somatic complaints (24 items), anxiety (24 items), anxiety-related disorders (24 items), depression (24 items), mania (24 items), paranoia (24 items), schizophrenia (24 items),

borderline features (24 items), antisocial personality (24 items), alcohol problems (12 items), and drug problems (12 items).

5 treatment scales comprise aggression (18 items), suicidal ideation (12 items), stress (18 items), nonsupport (8 items), and treatment rejection.

2 interpersonal scales are dominance (12 items) and warmth (12 items).

Procedure

The participants were administered individually with the help of a personality assessment scale. For that prior permission was obtained from the covid-19 treating hospitals. Covid-19 infected persons were taken to a distraction-free setting and proper social distancing was maintained and rapport was established.

After the informed consent was obtained, then the different assessment tools were administered. The non-infected person is collected from different parts of Jaipur, Rajasthan. Each individual was approached personally to explain the purpose of the study and informed consent was obtained then the assessment tools were administered.

The neurotic scales are sub-scales of somatic complaints i.e., conversion, somatization, and health concerns (eight each, total twenty-four items); subscales of anxiety i.e., cognitive, affective, and somatization (eight each, total twenty-four items); subscale of anxiety-related disorders i.e., obsessive-compulsive, phobias, and traumatic stress (eight each, total twenty-four). Thus, the total item in this study is seventy-two. The subject has to choose one out of the five choices for each statement. The key choices are false (F), slightly true (ST), mainly true (MT), and very true (VT).

Scoring: Scoring was done with the help of a manual.

Statistical analysis:

Statistical analysis was done with the help of SPSS software. The t-test was used to analyze the result. Descriptive statistics Mean and SD are also depicted.

RESULTS :

The present study was calculated with the help of a t-test. The total sample has consisted of 500 of which 250 were non-infected and 250 were covid-19 infected. Differences among non-infected and Covid-19 infected are significant differences on all sub-scales except the conversion was non-significant. (p value= 0.36) (Table 1.)

Our study showed that covid-19 infected patients and non-infected both have mental health issues but Covid-19 infected had significantly more severe problems on all sub-scales except the conversion which was non-significant. (p value= 0.36) Table 1

Table-1 Sub- Scales of somatic complaints, anxiety-related disorders of Normal and Covid infected on Mean, S.D. t-test and P- Significance level.

Sub-Scales (Variables)	Non Infected		Covid- Infected		P
	M	SD	M	SD	
Conversion	10.22	4.52	11.02	4.17	0.36
Somatization	6.58	2.90	12.14	3.00	0.01
Health concerns	6.88	3.06	13.78	3.94	0.01
Cognitive	8.04	3.57	11.12	3.12	0.05
Affective	8.94	2.32	12.14	2.05	0.01
Physiological	7.24	3.65	10.92	4.92	0.05
Obsession	4.34	4.11	10.06	7.90	0.01
Phobia	9.60	3.28	12.86	1.70	0.01
Traumatic- stress	6.60	3.90	11.32	6.41	0.05

Df=98, significant (2-tailed)

DISCUSSION

The focus of the present study was to find out differences among non-infected and covid-19 infected on conversion, somatization, health concerns, cognitive, affective, physiological, obsessive-compulsive, phobias, and traumatic stress.

Our study showed that covid-19 infected patients and non-infected both have mental health issues but

Covid-19 infected had significantly more severe problems on all sub-scales except the conversion which was non-significant. (p value= 0.36) Table 1

In COVID-19 infected individuals the causes of mental health issues may be its association with devastation and death and which lead to a very negative picture globally. There may be various reasons for the negativity about Covid-19 which include Its highly contagious nature of the illness, tedious prevention measures, social distancing, non-availability of definite treatment options, prolonged quarantine, and the risk of serious complications and death. These features of the illness make it scary to be perceived by the Covid-19 infected patients. (15,16)

Further profound psychological responses are triggered by the apprehension of life safety risk either actual or imaginary.

In our study, we found a significant difference on the affective scale. (p=0.01) Table 1 The possible reason behind this increased mental health issues on the affective scale include fear, rage, edginess, mood swings, criticism, and blaming (self and others), frustration, depression, emotional numbness, and inability to cope. a similar observation was also reported by Roy D et al and Kawohl W et al.(5,13)

In our study, we found a significant difference on the cognitive scale. (p=0.05) Table 1. There may be so many reasons for this significant difference as components of cognition are adversely affected e.g. poor concentration, poor memory, inability to make decisions, integrity loss, heightened alertness, perceptual distortions, intrusive and unwelcome memories, reduced self-esteem/ confidence, and denial.

In our study, we observed significant differences on the physiological scale. (p=0.05) Table1. Since physiological functioning such as sleep, relaxation, sexual functioning, symptoms associated with sensory functions might have impaired. This study is in line with Gupta R, et al and Banerjee D et al. (17,18)

Similarly, we found a significant difference on the obsession scale. (p=0.01) Because of obsessive contamination due to cognitive distortions, perceptual distortions, intrusive and unwelcome memories can lead to obsessive ruminations thoughts which can reinforce illness. Our findings are in agreement with Kumar A et al and Kar SK, et al. (19,20)

In our study, we found a significant difference on the somatization scale. ($p=0.01$) There may be many reasons for this significant difference as somatization often occurs in people who are unable to handle stress. Interactions and conversations likely focus on their health problems and their self-image may be largely influenced by beliefs that they are handicapped by their poor health. The media portrayal of COVID-19 has led to a constant state of hyper-vigilance among people, which has led to the development of various somatic symptoms and panic anxiety levels. Similar findings were also observed by Goyal K. et al. (21)

Our study showed that there are significant differences among non-infected and covid-19 infected on scales of the conversion, somatization, health concerns, cognitive, affective, physiological, obsessive-compulsive, phobias, and traumatic stress. These findings are in line with previous investigations carried out in this area. (5,13,15,16,17,18,19,20,21)

CONCLUSION:

In the concluding part, after having found out such associated mental health issues of covid-19 infected patients, there is a need of improvement in intervention part to improve the overall quality of mental health care by the inclusion of various services such as tele-counseling, video-counseling, e-teaching, group therapy, family therapy and improving research and training programmes with more emphasis on early detection, management, and rehabilitation with special attention to the vulnerable population.

REFERENCES:

1. Li Z, Ge J, Yang M, Feng J, Qiao M, Jiang R, Bi J, Zhan G, Xu X, Wang L, Zhou Q, Zhou C, Pan Y, Liu S, Zhang H, Yang J, Zhu B, Hu Y, Hashimoto K, Jia Y, Wang H, Wang R, Liu C, Yang C. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID 19 control. *Brain Behav Immun*. 2020;88:916-9. doi: [10.1016/j.bbi.2020.03.007](https://doi.org/10.1016/j.bbi.2020.03.007), PMID [32169498](https://pubmed.ncbi.nlm.nih.gov/32169498/).
2. Adams JG, Walls RM. Supporting the health care workforce during the COVID-19 global epidemic. *JAMA*. 2020;323(15):1439-40. doi: [10.1001/jama.2020.3972](https://doi.org/10.1001/jama.2020.3972), PMID [32163102](https://pubmed.ncbi.nlm.nih.gov/32163102/).
3. WHO corona virus Disease 2019 (COVID-19) situation [report] [cited Jun 20 2020]. Available

from:

https://www.who.int/docs/defaultsource/coronavirus/e/situation-reports/20200406-sitrep-77-covid-19.pdf?sfvrsn=21d1e632_2. Vol. 77.

4. Bansal A, Jain S, Sharma L, Kumar M, Sharma A. A cross-sectional study to assess the psychosocial impact of COVID-19 pandemic on health-care workers at a tertiary care hospital in India. *Int J Acad Med*. 2020 Jul 1;6(3):197. doi: [10.4103/IJAM.IJAM_89_20](https://doi.org/10.4103/IJAM.IJAM_89_20).
5. Roy D, Tripathy S, Kar SK, Sharma N, Verma SK, Kaushal V. Study of knowledge, attitude, anxiety and perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian J Psychiatr*. 2020;51:102083. doi: [10.1016/j.ajp.2020.102083](https://doi.org/10.1016/j.ajp.2020.102083).
6. Maunder R, Hunter J, Vincent L, Bennett J, Peladeau N, Leszcz M, Sadavoy J, Verhaeghe LM, Steinberg R, Mazzulli T. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *CMAJ*. 2003;168(10):1245-51. PMID [12743065](https://pubmed.ncbi.nlm.nih.gov/12743065/).
7. Horesh D, Kapel Lev-Ari R, Hasson-Ohayon I. Risk factors for psychological distress during the COVID-19 pandemic in Israel: loneliness, age, gender, and health status play an important role [published online ahead of print, Jul 13, 2020]. *Br J Health Psychol*. 2020;25(4):925-33. doi: [10.1111/bjhp.12455](https://doi.org/10.1111/bjhp.12455), PMID [32656926](https://pubmed.ncbi.nlm.nih.gov/32656926/).
8. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, Wu J, Du H, Chen T, Li R, Tan H, Kang L, Yao L, Huang M, Wang H, Wang G, Liu Z, Hu S. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open*. 2020;3(3):e203976. doi: [10.1001/jamanetworkopen.2020.3976](https://doi.org/10.1001/jamanetworkopen.2020.3976), PMID [32202646](https://pubmed.ncbi.nlm.nih.gov/32202646/).
9. Fegert JM, Vitiello B, Plener PL, Clemens V. Challenges and burden of the coronavirus 2019 (COVID 19) pandemic for child and adolescent mental health: A narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child Adolesc Psychiatry Ment Health*. 2020;14:20. doi: [10.1186/s13034-020-00329-3](https://doi.org/10.1186/s13034-020-00329-3), PMID [32419840](https://pubmed.ncbi.nlm.nih.gov/32419840/).
10. Webb L. COVID-19 lockdown: A perfect storm for older people's mental health [published online ahead of print, Apr 30, 2020]. *J Psychiatr Ment Health Nurs*. 2021;28(2):300. doi: [10.1111/jpm.12644](https://doi.org/10.1111/jpm.12644), PMID [32352621](https://pubmed.ncbi.nlm.nih.gov/32352621/).

11. Nursalam N, Sukartini T, Priyantini D, Mafula D, Efendi F. Risk factors for psychological impact and social stigma among people facing COVID 19: A systematic review. *Syst Rev Pharm.* 2020;11:10228.
12. Coronavirus COVID 19 disease. Register: Mental Health and Psychosocial Support Society [cited Aug 08, 2020]. Available from: <https://pressto.amu.edu.pl/index.php/sr/article/view/22506>.
13. Kawohl W, Nordt C. COVID-19, unemployment, and suicide. *Lancet Psychiatry.* 2020;7(5):389-90. doi: [10.1016/S2215-0366\(20\)30141-3](https://doi.org/10.1016/S2215-0366(20)30141-3), PMID [32353269](https://pubmed.ncbi.nlm.nih.gov/32353269/).
14. Kavoor AR. COVID-19 in People with Mental Illness: challenges and Vulnerabilities. *Asian J Psychiatr.* 2020;51:102051. doi: [10.1016/j.ajp.2020.102051](https://doi.org/10.1016/j.ajp.2020.102051).
15. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, Ng CH. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry.* 2020;7(3):228-9. doi: [10.1016/S2215-0366\(20\)30046-8](https://doi.org/10.1016/S2215-0366(20)30046-8), PMID [32032543](https://pubmed.ncbi.nlm.nih.gov/32032543/).
16. Onyeaka HK, Zahid S, Patel RS. The unaddressed behavioral health aspect during the coronavirus pandemic. *Cureus.* 2020;12(3):e7351. Published. doi: [10.7759/cureus.7351](https://doi.org/10.7759/cureus.7351), PMID [32328363](https://pubmed.ncbi.nlm.nih.gov/32328363/).
17. Gupta R, Grover S, Basu A, Krishnan V, Tripathi A, Subramanyam A, Nischal A, Hussain A, Mehra A, Ambekar A, Saha G, Mishra KK, Bathla M, Jagiwala M, Manjunatha N, Nebhinani N, Gaur N, Kumar N, Dalal PK, Kumar P, Midha PK, Daga R, Tikka SK, Praharaj SK, Goyal SK, Kanchan S, Sarkar S, Das S, Sarkhel S, Padhy SK, Sahoo S, Satyanarayana Rao TS, Dubey V, Menon V, Chhabra V, Lahan V, Avasthi A. Changes in sleep pattern and sleep quality during COVID 19 lockdown. *Indian J Psychiatry.* 2020;62(4):370-8. doi: [10.4103/psychiatry.IndianJPsychiatry_523_20](https://doi.org/10.4103/psychiatry.IndianJPsychiatry_523_20), PMID [33165382](https://pubmed.ncbi.nlm.nih.gov/33165382/).
18. Banerjee D, Rao TSS. Sexuality, sexual well being, and intimacy during COVID 19 pandemic: an advocacy perspective. *Indian J Psychiatry.* 2020;62(4):418-26. doi: [10.4103/psychiatry.IndianJPsychiatry_484_20](https://doi.org/10.4103/psychiatry.IndianJPsychiatry_484_20), PMID [33165372](https://pubmed.ncbi.nlm.nih.gov/33165372/).
19. Kumar A, Somani A. Dealing with corona virus anxiety and OCD. *Asian J Psychiatr.* 2020;51:102053. doi: [10.1016/j.ajp.2020.102053](https://doi.org/10.1016/j.ajp.2020.102053).
20. Kar SK, Arafat SMY, Sharma P, Dixit A, Marthoenis M, Kabir R. COVID-19 pandemic and addiction: current problems and future concerns. *Asian J Psychiatr.* 2020;51:102064. doi: [10.1016/j.ajp.2020.102064](https://doi.org/10.1016/j.ajp.2020.102064).
21. 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. doi: [10.1016/j.ajp.2020.101989](https://doi.org/10.1016/j.ajp.2020.101989).

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