

A Study of Psychosocial factors among voluntarily tested Individuals during Covid-19 Pandemic in a district of Central India

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Abstract

Background: The public health emergency, caused by COVID-19, has resulted in strong physical and mental exhaustion in community peoples all over the world. This research has been designed to describe the psychosocial factors among voluntarily tested Individuals during Covid19 Pandemic in a district of Central India.

Material and Methods: This was a cross-sectional study, in which a self-administered Telephonic questionnaire was designed to cover the dimensions of interest associated with psychosocial factors during the pandemic.

Result: A total of 311 Individuals participated. Males responded better than females. person living in joint family were found to have good health score in comparison to participants living in nuclear family .Fear of covid19 (44.0%) was the main reason for testing followed by referred by doctor (36.0%), media (10.9%) and motivation by family members (9.0%) respectively. 83.9% were not practicing Yoga and 64.3% of them were having sleep more than 6 hours. Anxiety state had no correlation with psychosomatic manifestations.

Conclusions: The study indicates varying pattern of COVID19 in India. The take away lesson is that people should be encouraged and motivated to continue healthy life style

during pandemics so that the negative impact in their behavior is minimal. Adequate health education is to be imparted to the public to reduce fear of pandemic.

Key Words: COVID-19; pandemic; coronavirus; voluntarily; Health; psychosocial factor

Introduction

In 2019 the emergence of COVID 19 would witness an unprecedented pandemic which would not only change the socioeconomic status of different countries but also challenge the capabilities of human beings for their survival. The pandemic was devastating initially with no previous data to rely on and this pose a big threat to the health of all population who were affected by the pandemic. The challenge was overcome by human efforts with government and public participation that led to control of pandemic in a phased manner.^[1] The first wave created panic worldwide due to lack of knowledge of the disease and its transmission with high mortality in various countries.^[2,3,4,5, 6] The various phases of COVID 19 has affected physical, mental and social well being and brought significant behavioral changes which matched with the severity of the pandemic.^[7,8] The psychosocial and behavioral changes during COVID 19 have been very variable with significant improvement in some factors whereas some factors were still in the same intensity. This prompted various studies in different parts of the world to understand the dynamics of pandemic and the psychosocial behavior of the population during these different phases of pandemic.^[9,10] The study would help policy makers, social workers, counsellors and other stakeholders to understand human behavior and take corrective and preventive actions in future pandemic. Needless to say the human behavior affects all aspects of human existence including socioeconomic and cultural dimensions hence it is matter of interest to all concerns for maintaining good physical and mental health during future pandemics if any. Therefore, this research has been designed with the aim to Study the Psychosocial factors among voluntarily tested Individuals during Covid19 Pandemic. The findings will inform social workers and psychologists about Strategies and interventions that support the community peoples. It includes the following objectives.

- To asses socio-demographic profile of the study participants
- To assess Covid19 positivity rate in study participants.
- To assess the Psychosocial Health of study participants

MATERIALS AND METHODS

Study design- Cross Sectional study.

Study settings- Field practice area of People's College of Medical Sciences and Research Centere, Bhopal (M.P). The study population was selected from urban and semi-urban areas within 20 km radius of Bhopal.

Study period- November 2020 to February 2021 for four months.

Sample size and Sampling technique- Participants selection was done using systematic random sampling from the sampling frame of 1800 and every sixth participant was selected. 311 study participants were recruited for this study. If the selected participants did not consent or not available next participant was included in the study. 10% of the sample sizes were added to the original participants as non response rate to get more reliable study results.

Inclusion criteria and Exclusion criteria

Inclusion- Males and Females in the age group of > 14 years and residents of the study area for more than 6 months.

Exclusion- Age less than <14 years at the time of interview/ Not a resident of study area / those not giving consent to participate in the study.

Study tool- A semi-structured questionnaire was created and employed to gather data on personal and family history, as well as socio-demographic factors. Reasons for Vaccination, Health and Sleep status.

Data collection procedure- The study was carried out following approval by the scientific and ethical committee of PCMS,Bhopal. The purpose of the study was explained to the qualified participants. Telephonic interviews are used to get pertinent data. Following consent, research teams used semi-structured questionnaires to interview study participants. Confidentiality was preserved, and respondents' privacy was honoured.

Variables- Explanatory or independent variables included socio-demographic attributes and the dependent variable was Covid vaccination, health status.

Statistical analyses- Microsoft Excel was used to gather and compile pertinent data. Version 3.1 of the Epidata software was used to enter the data, and SPSS version 16 was used for the analysis. The mean and percentages were the statistical instruments used.

Ethical Approval- Approval for this study was obtained from the relevant ethical committee, ensuring that all research procedures adhered to ethical standards and guidelines for protecting participants' rights and confidentiality.

Result:

Table 1: Socio-demographic profile and positivity among participants (n=311)

Age Group (In Years)	Male		Female		Total	
	No.	%	No.	%	No.	%
<18	13	7.7	9	6.2	22	7.0
18 – 35	74	44.0	79	55.2	153	49.1
36-50	44	26.1	31	21.6	75	21.1
51 – 65	22	13.0	14	9.7	36	25.1
>65	15	8.9	10	6.9	25	8.0
Total	168		143		311	
Age and Gender wise testing & Positivity among Volunteers						
	No. of Testing	No. of Positive	No. of Testing	No. of Positive	No. of Testing	No. of Positive
<18	13	0	9	0	22	0
18 – 35	74	4	79	3	153	7
36-50	44	0	31	1	75	1
51 – 65	22	0	14	0	36	0
>65	15	0	10	0	25	0
Occupation wise testing & Positivity among Volunteers						
Govt Job	22	1	7	0	29	1
Private Job	29	0	24	1	53	1
Self Employed	37	0	3	0	40	0
Farmer	20	1	1	0	21	1
Student	38	1	40	0	78	1
Unemployed	22	1	68	3	90	4

Monthly Income of Family (in thousand INR)						
Income wise testing & Positivity among Volunteers						
<5	28	0	32	1	60	1
6 to 10	1	0	0	0	1	0
11 to 25	11	2	10	0	21	2
26 to 50	64	1	50	1	114	2
51 – 75	52	1	40	2	92	3
>75	12	0	11	0	23	0
Education wise testing & Positivity among Volunteers						
Illiterate	1	0	4	1	5	1
Upto Middle	8	0	8	0	16	0
Upto High School	17	1	13	0	30	1
Upto Intermediate	32	1	26	0	58	1
Graduate and above	110	2	92	3	202	5
Behavior Patten and testing & Positivity among Volunteers						
Smoking Yes	78	1	1	0	79	1
No	90	3	142	4	232	7
Tobacco Chewing Yes	62	1	4	0	66	1
No	106	3	139	4	245	7
Alcoholism Yes	69	2	9	0	78	2
No	99	2	134	4	233	6

Table 2: Self Perceived Health Status before and after Covid Pandemic (n=311)

Self Perceived Health Status Score (1 to 10) [1 for Unhealthy 10 for Healthy]	Male		Female		Total	
	Before	After	Before	After	Before	After
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0

4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	1	1	2	2	3	3
8	24	35	7	24	31	59
9	71	82	83	80	154	162
10	72	50	51	37	123	87

Table 3A: Reason for Testing among study participants (n=311)

Reason	Male		Female		Total	
	No.	%	No.	%	No.	%
Media	22	7	12	3.8	34	10.9
Fear of Covid19	70	22.5	67	21.5	137	44.0
Expert Advice	60	19.2	52	16.7	112	36.0
Counseling	16	5.1	12	3.8	28	9.0
Total	168	54.0	143	45.9	311	100

Table 3B: Health Status before and after Covid Pandemic (n=311)

Self Perceived Health Status score	Male		Female		Total	
	Before (%)	After (%)	Before (%)	After (%)	Before (%)	After (%)
Poor(Score 1 to 4)	0	0	0	0	0	0
Average (Score 5 to 8)	14.8	21.4	6.2	18.1	10.9	19.9
Good (Score 9 to 10)	85.1	78.5	93.7	81.8	89.0	80

In our study, in male Participants before the covid Pandemic 0%, 14.8% and 85.1% and after the covid Pandemic 0%, 21.4% and 78.5% participants were reported poor, average and good health status respectively. In female Participants before the covid Pandemic 0%, 6.2% and 93.7% and after the covid Pandemic 0%, 18.1% and 81.8% participants were reported poor, average and good health status respectively. Overall before the covid Pandemic 0%, 10.9% and 89.0% and after the covid Pandemic 0%, 19.9% and 80%

participants were reported poor, average and good health status respectively. Fear of covid19 (44.0%) was the main reason for testing followed by referred by doctor (36.0%), media (10.9%) and motivation by family members (9.0%) respectively.

Table 4: Sleep status among study participants (n=311)

Factors		Male		Female		Total	
		Sleep ≤ 6 hour	Sleep > 6 hour	Sleep ≤ 6 hour	Sleep > 6 hour	Sleep ≤ 6 hour	Sleep > 6 hour
Duration of Exercise	Nil	11 (6.5%)	20 (11.9%)	14 (9.7%)	21 (14.6%)	25 (8.0%)	41 (13.1%)
	More than 30 Minutes	45 (26.7%)	92 (54.7%)	45 (31.4%)	63 (44.0%)	90 (28.9%)	155 (49.8%)
Yoga	Yes	9(2.8%)	9(2.8%)	13(4.1%)	19(6.1%)	22(7%)	28(9%)
	No	47 (15.1%)	103 (33.1%)	46 (14.7%)	65 (20.9%)	93 (29.9%)	168 (54.0%)
Meditation	Yes	6 (1.9%)	14 (4.5%)	12 (3.8%)	16 (5.1%)	18 (5.7%)	30 (9.6%)
	No	50 (16.0%)	98 (31.5%)	47 (15.1%)	68 (21.8%)	97 (31.1%)	166 (53.3%)

16.0% participants were found to be practicing Yoga regularly and only 54% of them were having sleep more than 6 hours. 83.9% were not practicing Yoga and 64.3% of them were having sleep more than 6 hours. 15.4% participants were found to be practicing Meditation regularly and only 62.5% of them were having sleep more than 6 hours. 84.5% were not practicing Meditation and 63.1% of them were having sleep more than 6 hours. 8.0% participants were above the age of 65 years and 40% of them were having frequent Anxiety state. However in male above 65 year age group 53.5% and in female above 65 year age group 20% were having frequent Anxiety state. 16% participants were found to be practicing Yoga regularly and none of them having frequent Anxiety state. 83.9% were not practicing Yoga and 11.8% of them having frequent Anxiety state. 15.4% participants were found to be practicing Meditation regularly and only 8.3% of them having frequent Anxiety state. 84.5% were not practicing Meditation and 10.2% of them having frequent Anxiety state.

Discussion

We present a study on a recruited population of participants affected during the COVID-19 waves with telephonic retrospective data recovery. Age distribution of study population was found to be comparable to generable population similar to another Indian study.^[11, 12, 13] In our study it has been observed that the participants of lower socioeconomic group having monthly family income of less than ten thousand were having higher anxiety state as compared to other groups having higher monthly income. This may be attributed to financial insecurity in the lower socioeconomic group due to Covid-19 Pandemic and the same has also been observed in a Polish study.^[14,15] (Table 1) The smoking, alcoholism and tobacco chewing habits and higher anxiety state were not found to be correlated in our study though a bidirectional relationship was found in some studies.^[16,17] In this study it was found that persons living in joint families were found to have good health scores in comparison to participants living in nuclear families that can be attributed to interpersonal relationships in view of changing social-cultural scenarios.^[18,19] The self-perceived health status was found to be decreased in the third wave. That can be due to stress and anxiety related with the pandemic. The anxiety state was found to be higher in older age groups as compared to younger age groups. It may be attributed to apprehension of the disease which witnessed high mortality in previous waves.^[20,21,22] In our study we found that the participants who were exercising regularly have reduced state of anxiety as compared to those who were exercising less often or not exercising and this may be attributed to positive effects of exercise on reducing anxiety and stress.^[23] We found that the anxiety state had no correlation with psychosomatic manifestations and this may be due to low prevalence of anxiety state in the participants.^[24,25] We found that higher anxiety state in participants with associated co-morbidities as compared to low anxiety state in participants with no co-morbidities and this may be attributed to apprehension of previous waves of COVID 19 wherein higher morbidity and mortality was observed in persons with associated co-morbidities and having COVID 19 disease.^[26,27] In our study it was observed that the maximum number of volunteers resorted to COVID 19 testing due to fear of disease followed by referral by the doctors, media and advice by friends and family members. This may be due to high mortality observed in previous waves of COVID 19.^[28,29]

Limitation of the study: A few limitations of this study must be considered. This was a single-city study; Due to the COVID-19 outbreak, a survey conducted by online questionnaires may have selection bias. These voluntary online surveys cannot artificially set the male-to-female ratio, and the imbalance between males and females may impact the results. This is a cross-sectional study, and it cannot explain internal causal relationships.

Conclusions: The study indicates varying pattern of COVID19 in India. The anxiety level was found to be low. However it has been observed in the study that the participants who exercised regularly had low anxiety as compare to others. It is also been observed that the anxiety level was higher in the participants from low socio economic background. The take away lesson is that people should be encouraged and motivated to continue healthy life style during pandemics so that the negative impact in their behavior is minimal. Adequate health education is to be imparted to the public to reduce fear of pandemic. It means that future systematic reviews and meta-analyses could be more sensitive at the period of data collecting in particular studies.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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References:

1. Li J, Yang Z, Qiu H, Wang Y, Jian L, Ji J, Li K. Anxiety and depression among general population in China at the peak of the COVID-19 epidemic. *World Psychiatry*. 2020 Jun;19(2):249-250. doi: 10.1002/wps.20758. PMID: 32394560; PMCID: PMC7214959.
2. McCracken LM, Badinlou F, Buhrman M, Brocki KC. Psychological impact of COVID-19 in the Swedish population: Depression, anxiety, and insomnia and their

- associations to risk and vulnerability factors. *Eur Psychiatry*. 2020 Aug 26;63(1):e81. doi: 10.1192/j.eurpsy.2020.81. PMID: 32843115; PMCID: PMC7503043.
3. Patton GC, Raniti M, Reavley N. Rediscovering the mental health of populations. *World Psychiatry*. 2021 Jun;20(2):151-152. doi: 10.1002/wps.20842. PMID: 34002509; PMCID: PMC8129848.
4. Krishnan RA, Ravindran RM, Vincy VS, Arun P, Shinu KS, Jithesh V, et al. Analysis of daily COVID-19 death bulletin data during first two waves of the COVID-19 pandemic in Thiruvananthapuram district, Kerala, India. *J Family Med Prim Care* 2022;11:6190-6.
5. Tendulkar P., Pandey P., Panda P. K., Bhadoria A. S., Kulshreshtha P., Mishra M., et al. . (2023). Comparative study between the first and second wave of COVID-19 deaths in India: a single center study. *Cureus* 15:e37472. doi: 10.7759/cureus.37472, PMID: - DOI - PMC - PubMed
6. Chavda V.P., Patel A.B., Vaghasiya D.D. SARS-CoV-2 variants and vulnerability at the global level. *J. Med. Virol.* 2022;94:2986–3005. doi: 10.1002/jmv.27717. - DOI - PMC - PubMed
7. Hossain MM, et al. Epidemiology of mental health problems in COVID-19: A review. *F1000Research*. 2020;9:636. doi: 10.12688/f1000research.24457.1. - DOI - PMC - PubMed
8. Das S. Mental Health and Psychosocial Aspects of COVID-19 in India: The Challenges and Responses. *Journal of Health Management*. 2020;22(2):197-205. doi:10.1177/0972063420935544
9. Joshi, A. COVID-19 pandemic in India: through psycho-social lens. *J. Soc. Econ. Dev.* 23 (Suppl 2), 414–437 (2021). <https://doi.org/10.1007/s40847-020-00136-8>
10. Kamble S., Joshi A., Kamble R., Kumari S., Kamble S., Joshi A., Kamble R., Kumari S. Influence of COVID-19 Pandemic on Psychological Status: An Elaborate Review. *Cureus*. 2022;14:e29820. doi: 10.7759/cureus.29820. - DOI - PMC - PubMed
11. Rathod D, Kargiwar K, Patel M, Kumar V, Shalia K, Singhal P. Risk factors associated with Covid-19 Patients in India: A single centre retrospective cohort study. *J Assoc Physicians India* 2023;71:43-50.

12. AlBahrani S, AlAhmadi N, Hamdan S, Elsheikh N, Osman A, Almuthen S, et al. Clinical presentation and outcome of hospitalized patients with COVID-19 in the first and second waves in Saudi Arabia. *Int J Infect Dis* 2022;118:104-8.
13. Thakur I, Chatterjee A, Ghosh AK, Chatterjee SS, Saha S, Panja T, et al. A comparative study between first three waves of COVID-19 pandemic with respect to risk factors, initial clinic-demographic profile, severity and outcome. *J Family Med Prim Care* 2024;13:2455-61.
14. Parra-Mujica F, Johnson E, Reed H, Cookson R, Johnson M. Understanding the relationship between income and mental health among 16-to 24-year-olds: Analysis of 10 waves (2009–2020) of Understanding Society to enable modelling of income interventions. *PLoS ONE*. 2023;18(2):e0279845. doi: 10.1371/journal.pone.0279845 - [DOI](#) - [PMC](#) - [PubMed](#)
15. Naseer S, Khalid S, Parveen S, Abbass K, Song H, Achim MV. COVID-19 outbreak: impact on global economy. *Front Public Health*. 2022;10:1009393. doi: 10.3389/fpubh.2022.1009393. - [DOI](#) - [PMC](#) - [PubMed](#)
16. Dubey M.J., Ghosh R., Chatterjee S., Biswas P., Chatterjee S., Dubey S. COVID-19 and addiction. *Diabetes Metab. Syndr. Clin. Res. Rev.* 2020;14:817–823. doi: 10.1016/j.dsx.2020.06.008. - [DOI](#) - [PMC](#) - [PubMed](#)
17. Loui HF, Li J, Jackson NJ, Wisk LE, Buhr RG. Tobacco consumption behavior change during the COVID-19 pandemic is associated with perceived COVID threat. *Res Sq [Preprint]*. 2023 Jul 6;rs.3.rs-3143401. doi: 10.21203/rs.3.rs-3143401/v1. PMID: 37461647; PMCID: PMC10350210.
18. Panchal DR. Mental health and psychological well-being among adolescents of joint and nuclear family. *Int J Technol Res Eng*. 2013;7(4):431–4.
19. Lodhi, F.S., Rabbani, U., Khan, A.A. *et al.* Factors associated with quality of life among joint and nuclear families: a population-based study. *BMC Public Health* **21**, 234 (2021). <https://doi.org/10.1186/s12889-021-10265-2>
20. Nigam JA, Barker RM, Cunningham TR, Swanson NG, Chosewood LC. Vital signs: health worker-perceived working conditions and symptoms of poor mental health - quality of worklife survey, united states, 2018-2022. *MMWR Morb Mortal Wkly Rep*. 2023 Nov 03;72(44):1197–205. doi: 10.15585/mmwr.mm7244e1. doi: 10.15585/mmwr.mm7244e1. - [DOI](#) - [DOI](#) - [PMC](#) - [PubMed](#)

21. Sharma, Suresh; Joseph, Jaison¹; Dhandapani, Manju²; Varghese, Abin³; Radha, K.⁴; Mathews, Elezebeth⁵; Varkey, Biji P.⁶. COVID-19 and Psychological Distress among the General Population of India: Meta-Analysis of Observational Studies. *Indian Journal of Community Medicine* 47(2):p 160-165, Apr–Jun 2022. | DOI: 10.4103/ijcm.ijcm_1365_21
22. Chandra A, Sreeganga SD, Ramaprasad A. Mental healthcare systems research during COVID-19: Lessons for shifting the paradigm post COVID-19. *Urban Governance*. 2024 Mar 1;4(1):5-15.
23. Wanjau M.N., Möller H., Haigh F., Milat A., Hayek R., Lucas P., Veerman J.L. Physical Activity and Depression and Anxiety Disorders: A Systematic Review of Reviews and Assessment of Causality. *AJPM Focus*. 2023;2:100074. doi: 10.1016/J.FOCUS.2023.100074. - [DOI](#) - [PMC](#) - [PubMed](#)
24. Rehman U, Shahnawaz MG, Khan NH et al (2021) Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Ment Health J* 57:42–48. <https://doi.org/10.1007/s10597-020-00664-x>
25. Johns G, Samuel V, Freemantle L et al (2022) The global prevalence of depression and anxiety during the covid-19 pandemic: Systematic review and meta-analysis. *J Affect Disord* 298:431–441. <https://doi.org/10.1016/j.jad.2021.11.026>
26. Saraswathi I, Saikarthik J, Senthil Kumar K, Madhan Srinivasan K, Ardhanaari M, Gunapriya R. Impact of COVID-19 outbreak on the mental in a COVID-19 treating medical college: a prospective longitudinal study. *PeerJ*. (2020) 8:e10164. 10.7717/peerj.10164 - [DOI](#) - [PMC](#) - [PubMed](#)
27. Sahu DP, Pradhan SK, Sahoo DP, Patra S, Singh AK, Patro BK. Fear and anxiety among COVID-19 screening clinic beneficiaries of a tertiary care hospital of Eastern India. *Asian J Psychiatr*. (2021) 57:102543. 10.1016/j.ajp.2020.102543 - [DOI](#) - [PMC](#) - [PubMed](#)

28. Krishnamoorthy Y, Nagarajan R, Saya GK, Menon V. Prevalence of psychological morbidities among general population, healthcare workers and COVID-19 patients amidst the COVID-19 pandemic: a systematic review and meta-analysis. *Psychiatry Res.* 2020;293:113382. doi: 10.1016/j.psychres.2020.113382. - [DOI](#) - [PMC](#) - [PubMed](#)

28.Konduru L, Das N, Kothari-Speakman G, Behura AK. Experiencing the COVID-19 pandemic as a healthcare provider in rural Dhanbad, India: an interpretative phenomenological analysis. *PLoS ONE.* 2022;17:e0273573. doi: 10.1371/journal.pone.0273573. - [DOI](#) - [PMC](#) - [PubMed](#)