Original Article

High Fear & Stress in the Quarantine Population of COVID-19 in Southern Rajasthan : A Survey

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Background : The advent of the COVID-19 pandemic has caused a significant psychological impact on the General Public, Health Care Workers, Elderly, High-risk groups, etc. Higher fear is likely among the quarantine population.

Aim of this study : To evaluate the fear and stress of individuals in quarantine; to determine the possible factors that are influencing the Psychological reactions of the individuals in quarantine compared to the general population; to provide a basis for future Government policies.

Methods : A semi-structured questionnaire that included a pre-tested, 7-item Fear of COVID-19 Scale (FCV-19S) was used for data collection. A total of 245 responses were received. Through random sampling, 50 participants each were chosen from the general and quarantine populations. p-value <0.05 was considered significant.

Results : Individuals in quarantine had a greater fear of COVID-19 compared to the general population (p=0.0059). Symptomatic fears like clammy hands (p=0.032), sleep disturbance (p=0.00026) and heart palpitations (p=0.000034) were commoner in the quarantine population. The younger age group in the quarantine population was comparatively more affected by News and Social media (p=0.00018). Getting a negative screening test resulted in lesser fear both in the quarantine (p=0.017) and general populations (p=0.002).

Conclusion : The individuals under quarantine have greater fear possibly due to stressors like transmitting the infection to family, working on the frontlines, being in high-risk groups, losing jobs, and exposure to social media. However, negative screening tests were shown to reduce the fear.

COVID-19 is a new respiratory infection outbreak that started in China in December, 2019. As of 4th May, 2020, a total of 42,533 cases and 1373 deaths were reported in India and 3,435,894 cases and 239,604 deaths all around the world[1]. By 12th November, 2021, the total number of confirmed COVID cases in India rose up to 34, 414, 186 and the total deaths reached to 462, 690[2]. The epidemic brought not only the risk of death from the viral infection but also unbearable Psychological pressure to people in China and the rest of the world. There have been reports on the Psychological impact of the COVID-19 pandemic on the Frontline Workers[3], Students[4], Health Care Workers[5], Elderly[6], etc.

Quarantine is the separation and restriction of movement of people who have potentially been exposed to a contagious disease to ascertain if they become unwell, hence reducing the risk of them infecting others. This definition differs from isolation, which is the

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> **Editor's Comment :**
> - COVID-19 exacerbated fears Worldwide which is higher in who quarantine.
> - The stressors which contributed to increase fear were losing jobs, economic crisis, transimitting infection to family members,social stigma high risk for future/ life threatening, and these people need counselling/ psychological support.

separation of people who have been diagnosed with a contagious disease from people who are not sick[7].

The Fear of COVID-19 Scale (FCV-19S) is a reliable and valid tool to assess fear as a Psychological reaction to the COVID-19 pandemic which is proven by studies in multiple Countries[8]. Fear of COVID-19 Scale is a seven-item, unidimensional scale with robust psychometric properties. It has been proven that the English version of the COVID-19S is a sound unidimensional scale with robust psychometric properties that can be used with confidence among English-speaking populations[9,10]. Moreover, total scores on the FCV-19S are comparable across the Country, Gender and Age which suggests that it is a good Psychometric instrument to be used in assessing and allaying fears of COVID-19 among individuals[8,11]. However, no detailed study comparing the mental health status of the population under quarantine with the normal population has been conducted to date.

The purpose of our study is :

(1) To evaluate the fear and stress of individuals in quarantine.

(2) To determine the possible factors that are influencing the Psychological reactions of the individuals in quarantine compared to the general population.

(3) To provide a basis for future Government policies.

Materials and Methods: This analytical research study was conducted at RNT Medical College, Udaipur (Rajasthan), for which the data was collected during May - June 2020. The study protocol was approved by the Institutional Ethical Committee. [RNT/STAT/IEC/2020/426 Dated18/05/2020]

A cross-sectional survey was conducted, using a semi-structured, pre-tested questionnaire that obtained Socio-demographic information (like gender, age, residence, educational status, occupation), medical history and information regarding the COVID screening test (RT-PCR). Moreover, a previously validated and standardized instrument, the 7-item Fear of COVID-19 Scale (FCV-19S) was used to evaluate the levels of fear[8,12,9]. The FCV-19S includes seven items that can be subdivided into 4 items based on emotional fear reactions and 3 items based on symptomatic expressions of fear. Respondents report their symptoms using a 5-item Likert rating scale that ranges from 1 (*strongly disagree)* to 5 (*strongly agree*), such that the total score ranges from 7 to 35[11].

The questionnaire along with the consent form was distributed through digital media and the data was collected via google forms. Appropriate ethical approval procedures were followed while taking consent from subjects and also in conducting the research. A total of 245 responses were received. Using the inclusion and exclusion criteria, the respondents were subdivided into quarantine and general. The inclusion and exclusion criteria comprised of :

Inclusion criteria : Age between 18 & 60 years. The quarantine population comprised individuals who had stayed under quarantine due to history of recent travel or history of contact with a COVID-19 patient or history of contact with a COVID-19 suspected patient. The general population comprised of individuals who had not stayed under quarantine.

Exclusion criteria : The participants with pre-existing or previously diagnosed mental health disorders or history of treatment for any mood/anxiety disorder or symptoms of upper respiratory tract infection or a positive screening test for COVID-19 were excluded from the study.

Statistical Analysis : *Slovin's formula* [N / (1 + Ne^2)] was applied to calculate the sample size for the

quarantine population in the institute. Taking the confidence level as 95% the resulting sample size for the quarantine population was 50 with a margin of error of 10%. After implementing the inclusion and exclusion criteria, 50 participants were selected in the quarantine population through random sampling and for effective comparison, 50 participants were similarly selected in the general population. The collected data were analyzed with SPSS v22.0 software (IBM Corp, Armonk, NY). The means and Standard Deviation were calculated and compared using a two-tailed t-test. p-value < 0.05 was considered statistically significant.

RESULTS

Table 1 — *Demographic profile*			
Demographic		General (n= 50)	Quarantine (n= 50)
Sex	Male	30 (60%)	37 (74%)
	Female	20 (40%)	13 (26%)
Age	18 – 30 Years *	34 (68%)	33 (66%)
	31 – 44 Years	14 (28%)	13 (26%)
	45 – 60 Years	2 (4%)	4 (8%)
Education	Undergraduate	27 (54%)	21 (42%)
	Postgraduate	13 (26%)	17 (34%)
	Others	10 (20%)	12 (24%)
Occupation	Health Care Workers	19 (38%)	43 (86%)
	Others	31 (62%)	7 (14%)
Screening test done	Yes	16 (32%)	34 (68%)
	No	34 (68%)	16 (32%)

* Most of the respondents were between the age of 18 and 30 years and majority were males. Among the sample of the quarantine population, 86% were Health Care Workers (Table 1).

The quarantine population reported to have higher rates of symptomatic fear - clammy hands, sleep disturbance, Heart palpitations. Moreover, news and Social media had a significantly higher impact on the fear of COVID-19 among the quarantine population. There was no significant difference in the average scores between the quarantine population and the general population with regards to being afraid of COVID-19 and losing life to COVID-19 (Table 2).

Overall, there was a significant difference (p=0.0059) in the fear of COVID-19 between the quarantine (14.96 ± 5.510) and the general population (12.48 ± 2.908) on the FCV-19S.

Both males and females in the quarantine population had higher fear compared to the males and females in the general population, p=0.032 and p=0.022 respectively (p < 0.05) (Table 3).

In both the general and the quarantine populations, the females showed higher levels of fear (13.35 ± 2.54 & 17.23 ± 6.56 respectively) compared to the males (11.9 ± 3.03 & 14.16 ± 4.95 respectively). However, the results were not significant.

The 2 ends of the age groups (18 - 30 years and 45

Table 2 — *Average score of individual items of the FCV-19S*				
Question	Category	Average Score	SD	p value
I am most afraid of COVID-19	Quarantine	2.52	1.07	0.57
	General	2.64	1.08	
It makes me uncomfortable to think about COVID-19	Quarantine	2.54	1.15	0.04
	General	2.12	0.96	
My hands become clammy when I think of COVID-19	Quarantine	1.66	0.85	0.03
	General	1.36	0.48	
I am afraid of losing my life because of COVID-19	Quarantine	1.82	0.83	0.90
	General	1.84	0.91	
When watching news and stories about COVID-19 on social media, I become nervous or anxious	Quarantine	2.68	1.2	0.002
	General	2.02	0.91	
I cannot sleep because I'm worrying about getting COVID-19	Quarantine	1.72	0.83	<0.001
	General	1.22	0.42	
My heart races or palpitates when I think about getting COVID-19	Quarantine	2.02	1.09	<0.001
	General	1.28	0.49	

- 60 years) showed higher fear in the quarantine population as compared to the general population (p=0.000969, p=0.0048). Whereas the 31- 44 years group showed no difference in the levels of fear between the general population and the quarantine population (p = 0.24). In addition to that, on comparing the scores for the question - "When watching news and stories about COVID-19 on Social media, I become nervous and anxious" in the 18-30 years age group, the quarantine population was more affected by news and social media compared to the general population (2.71±1.159 *versus* 2.0 ± 0.862, p = 0.00018).

The Postgraduates and Undergraduates in the quarantine population had higher levels of fear compared to the general population (p = 0.036, p = 0.020) while those classified as "others" (which included respondents who have done diploma course or attended high school only) had no difference in the level of fear between the quarantine and the general population (p = 0.94). Similarly, the Health Care Workers and other occupational categories showed greater fear in the quarantine population (p = 0.037, p = 0.029). The respondents who had not taken a screening test for COVID-19 had higher levels of fear in the quarantine population compared to those in the general population (p = 0.0000302) (Table 4).

On comparing respondents within the same population, those who had taken a screening test for COVID-19 showed lesser fear both in the quarantine and the general population. Since our study did not include COVID-19 positive patients, those respondents who took a screening test and received negative results eventually had significantly less fear of COVID-19 (p=0.017, p=0.002)(Table 5).

DISCUSSION

The main goal of this study is to compare the psychological reaction and fear arising from the COVID-19 outbreak between the general population and the population that stayed in quarantine and explore different factors that are influencing their levels of fear. This study indicates that the average score in terms of fear of COVID-19 was higher in the quarantine population (14.96 ± 5.51) compared to the general population (12.48 ± 2.908).

Reports indicate that various factors like unpredictability, uncertainty, seriousness of the disease, misinformation and Social isolation play a role in contributing to stress and mental morbidity[13]. Similarly, studies on the Psychological impact of the quarantine suggested that not being able to see friends and family members, worry of infecting their family members and confinement also play a role in the psychological effects of the quarantine population[14].

Table 3 — *Average score comparison of the same sex group between the quarantine population and the general population*				
	Male		Female	
Category	Quarantine	General	Quarantine	General
Count (%)	37 (74%)	30 (60%)	13 (26%)	20 (40%)
Average	14.16	11.9	17.23	13.35
SD	4.95	3.03	6.56	2.54
p value	0.03	0.02		

Table 4 — *Average score comparison based on demographics between the general and the quarantine population*					
Average Scores	Quarantine	SD Q	General	SD G	p value
Age Groups :					
18 – 30 years	16.24	5.3504	12.74	2.49	< 0.001
31 – 44 years	10.77	4.418	12.57	3.48	0.21
45 – 60 years	18.00	2.449	7.50	0.707	0.004
Education :					
Undergraduate	16.00	5.723	12.08	3.353	0.03
Postgraduate	15.81	5.785	12.81	2.632	0.02
Others	12.00	3.766	12.10	3.213	0.94
Occupation :					
Healthcare Workers	14.77	5.433	11.89	3.381	0.03
Others	16.14	6.283	12.84	2.570	0.02
Screening Test Done :					
Yes	13.71	5.541	10.69	3.572	0.05
No	17.63	4.530	13.32	2.114	< 0.001

Table 5 — *Screening test comparison within the same population*				
	Screening Test Done	Average	SD	p value
General	Yes	10.697	3.572	0.002
	No	13.32	2.114	
Quarantine	Yes	13.71	5.541	0.01
	No	17.63	4.530	

When considering the fear of COVID-19 in relation to the various demographic factors, while some studies showed higher levels of fear and a greater Psychological impact on females[15], others did not show a significant difference in the Psychological impact between males and females[4]. In our study we did not find a significant difference between the fears of the males and females within the same population. This can be due to the difference between the number of males and females both in the quarantine (males 74% females 26%) and the general population (males 60%, females 40%).

However, when we compared the males and females in the general population with the males and females in the quarantine population respectively, significantly higher levels of fear were seen in the quarantine population for both males (p = 0.032) and females (p = 0.022).

On comparing different age groups, we found that age ranges depicted a variation in the level of fear between the quarantine and the general population. While the age groups of 18-30 years (p=0.000969) and 45-60 years (p=0.004) had a much higher level of fear in the quarantine population, there wasn't a significant difference in the level of fear in the age group of 31-44 years. This is supported by a previous study which states that the younger population are much more exposed to Social media than the middle aged and the elderly which can contribute to a greater Psychological impact[16]. In our study this is explained by comparing the results of the 18-30 years age group's average score for the question - "When watching news and stories about COVID-19 on Social media, I become nervous or anxious". This had a significantly higher average value (p = 0.00018) in the quarantine population compared to the general population. It is suggested that young people can easily trigger stress as they tend to collect information from social media[17]. The quarantine population were Health Care Workers and their higher levels of fear can be attributed to seeing their patients die, worry about their own safety, exhaustion due to increased duration of work and fear of other colleagues who have tested positive for COVID-19[4]. Along with this, it is reported that the Social disconnectedness and perceived isolation can result in higher levels of anxiety and depression in the elderly[6]. The elderly, are at a heightened risk of the Psychosocial outcomes of the COVID-19 pandemic[18], which was also observed in our study.

The educational groups (Undergraduates and Postgraduates) reported having higher fears in the quarantine population. This stems from their awareness about the gradually increasing distances between the people resulting from the quarantine, the effect of the virus on their studies and future employment[4].

Occupationally, both Health Care Workers (p=0.037) and individuals from other occupations (p=0.029) had significantly higher levels of fear when staying under quarantine. The Psychological impacts on the Health Care Workers are largely supported by various studies that highlight that the Health Care Workers are afraid due to multiple reasons. Some of them include the high risk of the infection and inadequate protection from contamination, frustration, isolation, lack of contact with family[5] and the fear of infecting their families or seeing their patients die[3].

Similarly, studies during the SARS outbreak report: acute stress in the quarantine population can be attributed to getting back in quarantine after resuming work as a Health Care Workers on the frontlines and the duration of quarantine[19,14]. The participants from other occupational categories who were under quarantine also showed higher fears which might be related to the future employment opportunities[3], economic crisis[20], and the stigma associated with COVID-19.

Getting a screening test has been attributed to lesser fear both within the quarantine (p = 0.017) and the general population (p = 0.002). Similarly, when we compared respondents between the quarantine and the general population based on whether or not they have taken a screening test for COVID-19, there was a significantly higher fear in the quarantine population (p = 0.0000302) who had not yet taken a screening test for COVID-19. But there was no significant difference in the fear of the respondents who had already taken the screening test and eventually tested negative. A screening test that confirms the negative status of the infection is helpful in reducing the stress and fear levels. Similar to this, previous studies in China found that fabricated or false reports about COVID-19 infection resulted in worse Psychological outcomes[21].

Our study suggests that the quarantine population has greater fears and anxiety compared to the normal population due to COVID-19 related stressors. These include close contact with a positive or a suspected patient, working on the frontlines, economic stressors and being in the high risk age groups. The symptomatic fear like disturbance in sleep, heart palpitations and clammy hands were found to be of significant intensity in the quarantine population compared to the general population.

News and Social media play a major role in the Psychological reaction of the younger individuals; measures to censor the News and Social media platforms regarding COVID-19 related information should be taken. Increasing the number of screening tests can help in flattening the curve of the infection and at the same time, it can help in reducing the stress

and fear among the individuals. Since isolation and quarantine can be fearful, proper counselling and support should be provided to those staying in quarantine. The availability of proper protective equipment and scales to evaluate the mental health of Health Care Workers with appropriate counselling and therapy can be helpful. High risk groups such as the elderly should be screened for mental health problems, provided Psychosocial support and Psychoeducation.

Limitations : The FCV-19S is based on Likert-scale which provides 5 choices to the respondents and it is likely that people avoid choosing the "extreme" options on the scale, because of the negative implications involved.

However, the scale is generalizable and has proven reliability and validity[7].

Conclusion : The emergence of COVID-19 has exacerbated fears Worldwide which is even higher in those who are staying in quarantine due to a history of travel or contact with suspected or positive patients. There are stressors which have contributed to increased fear and anxiety in the quarantine population. These stressors include situations like losing jobs, economic crisis, transmitting infection to family members, being in the high risk age group, working on the frontlines, exposure to media and societal stigma. However, negative screening test results have reduced anxiety and fear.

The mental health of the individuals in quarantine is significantly affected in the COVID-19 pandemic compared to the general population and they require attention, help and support from their families and the society. The Government should work towards providing timely Psychological services to those staying in quarantine.

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