

Psychological impact and stressors of being quarantined following exposure to Covid -19 –A mixed methods study

Authors, qualification & designation

Amrita N Shamanewadi¹, Dr.Prathap Kumar J², Dr.Padmalatha K³

1. MBBS, MD (Community Medicine), PG Diploma in Family Medicine, Associate Professor, Department of Community Medicine, Sapthagiri Institute medical sciences and research centre, Bengaluru , India

2. MBBS, MD , DNB(Anatomy), Assistant professor, Department of Anatomy, Chikkamangaluru Institute of Medical sciences, Chikkamangaluru, India

3. MBBS, MD ,DNB(Anatomy), Professor, Department of Anatomy, ESIC Medical College and PGIMSR, Bengaluru , India

Address for correspondence

Dr. Amrita N Shamanewadi, Associate Professor, Department of Community Medicine, Sapthagiri Institute medical sciences and research centre, Chikkasandra, Hessarghata main road, Bengaluru , India,

Mob - +919449229007 , Email: docamrita83@gmail.com

Abstract

Background: In the covid-19 era when it started quarantine is often an unpleasant experience for those who undergo it. The expected psychosocial and emotional reactions to the pandemic and psychological impact and stressors of being quarantined following exposure to Covid -19 observed in the general population may be significantly different in different populations due to their socio-cultural characteristics and historical contexts, which obviously impact on people's behaviors and attitudes. **Objectives:** 1.To assess the psychological impact of being quarantined following exposure to Covid-19.2.To understand the various stressors of being quarantined. **Material and Methods:** A two phase explanatory mixed methods study was conducted in Bengaluru rural district. All the people who were quarantined in the quarantine ward of a medical college were taken as study subjects. Quantitative data was collected in phase 1 and in phase 2 in-depth interviews were conducted to understand their psychological impact. The data collected was entered in MS excel and was analysed. Transcripts were prepared within a week of conducting the in depth interview and descriptive content analysis was performed manually to generate categories and themes. **Results:** A total of 107 people who were quarantined in a medical college were taken for quantitative data.15 subjects who were quarantined in a tertiary care hospital were interviewed, out of which 8 were females and 7 were males.Among the people who were interviewed all the people felt that they experienced extreme boredom, being away from loved ones, frustration and fear of turning covid-19 positive.**Conclusion:** The psychological impact of quarantine is wide-ranging, substantial, and can be long lasting.

Key words: Quarantine, psychological impact, stressors

Introduction:

The separation and restriction of movement of people who have potentially have been exposed to a contagious disease to ascertain if they become unwell, so as to decrease the risk of them infecting other individuals is termed as quarantine. [1] The separation of people who have been diagnosed with a contagious disease from other individuals who are not sick is termed as isolation. However, the two terms are often used interchangeably, especially in communication with the public. [2]

Quarantine is often an unpleasant experience for those who undergo it. Separation from loved ones, the loss of freedom, uncertainty over disease status, and boredom can, on occasion, create dramatic effects. Suicide has been reported [3], substantial anger generated, and lawsuits brought [4] following the imposition of quarantine in previous outbreaks. The potential benefits of mandatory mass quarantine need to be weighed carefully against the possible psychological costs. [5]

Successful use of quarantine as a public health measure requires us to reduce, as far as possible, the negative effects associated with it. [6]

The expected psychosocial and emotional reactions to the pandemic and psychological impact and stressors of being quarantined following exposure to Covid -19 observed in the general population may be significantly different in the Chinese and Indian populations due to their socio-cultural characteristics and historical contexts, which obviously impact on people's behaviors and attitudes. Furthermore, the organization of public health system is different in India compared to China and other countries, also due to financial constraints.

Objectives:

1. To assess the psychological impact of being quarantined following exposure to Covid-19.
2. To understand the various stressors of being quarantined.

Material and methods:**Study Design:**

A two phase explanatory mixed methods study.

- In phase I: quantitative data was collected. It was a cross sectional study
- Phase II: qualitative data was collected (In depth interview of people quarantined in institution, home or hotel).

Setting:

General setting: The study was conducted in the Bengaluru rural district of the state of Karnataka with a population of 66.8 million. Hoskote Taluka is one of the 4 talukas of Bengaluru rural district. The other 3 districts are Nelamangala, Devanahalli and Doddabalapura.

Study population:

The people who were quarantined (following either history of contact with a covid patients, history of recent travel) at institutions and those who gave consent were taken as study population.

Study Duration: 2 months

Study Site: Study was conducted in a medical college of Bangalore rural district.

Sample size:

Phase 1: All the people who were quarantined in the quarantine ward of a medical college were taken

Phase 2: In depth interview was taken till the level of saturation was attained.

Data Collection

- **Phase 1:** Basic Socio demographic data was collected with the help of a pre designed pretested semi-structured schedule. For assessing the psychological impact of quarantine validated scale named Impact of Event scale- Revised (IES-R) was used.
- **Phase 2:** In-depth interviews were conducted face to face in language in which the subjects were comfortable and audio recorded using 'voice recorder' mobile app after obtaining consent. Three participants did not give consent for recording, when notes were taken. Interview schedules with probes were used to interview the subjects. The interview schedule focused on areas pertaining to psychosocial factors of the being quarantined. The interviews were conducted in the wards where the people were quarantined. Eight people were interviewed, out of which 8 were females and 7 were males.

Interviews lasted for an average of 29 minutes (range 20- 45).

Data analysis:

In phase 1: The data collected was entered in MS excel and intrusion symptoms, avoidance symptoms, hyper-arousal symptoms and overall symptoms were assessed based on the scores of impact of event scale.

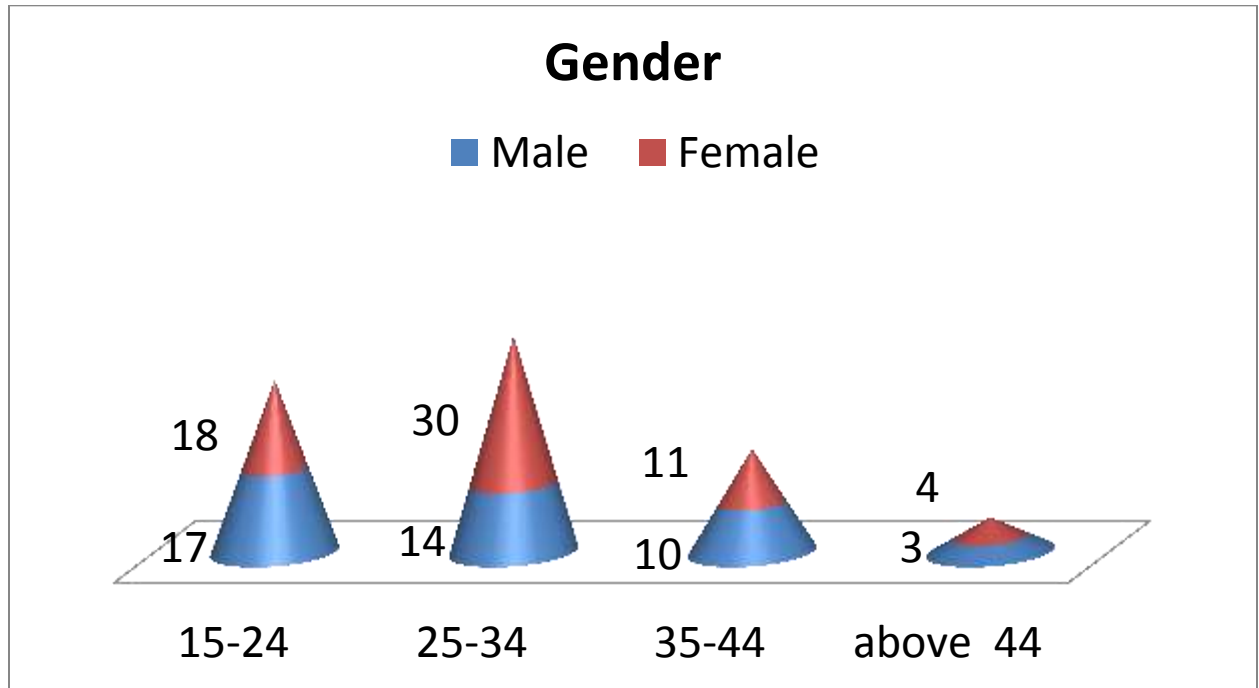
In Phase 2: Transcripts were prepared within a week of conducting the in depth interview and descriptive content analysis was performed manually to generate categories and themes.

Ethics approval

Ethics Issues: Ethics approval was obtained from the Institutional Ethics Committee of the MVJ Medical College and research hospital, Hoskote, Bengaluru, India. For the qualitative data, written informed consent for conducting in depth interview and audio recording was obtained from all the participants included in the study.

Results:

- In phase 1: A total of 107 people who were quarantined in a medical college were taken.
- In Phase 2: 15 subjects who were quarantined in a tertiary care hospital were interviewed, out of which 8 were females and 7 were males.
- The mean age of the study population was 29 years ± 7.8 .
- Majority of study population was in age group of 25-34 years.

Figure no.1: Age and Gender wise distribution of the study population**Table no. 1– Interpretation of the scores of impact event scale**

| Subscales | Value | Mean |
|---------------------------------------|-------|-------|
| Intrusion subscale | 585 | 0.68 |
| Avoidance subscale | 633 | 0.73 |
| Hyperarousal subscale | 350 | 0.54 |
| Overall total scores of the responses | 1568 | 14.65 |

Interpretation of the score:

The study subjects had, No intrusion symptoms, No avoidance symptoms, No hyper-arousal symptoms, few overall symptoms – suggested that there was no post traumatic stress disorder.

Qualitative results

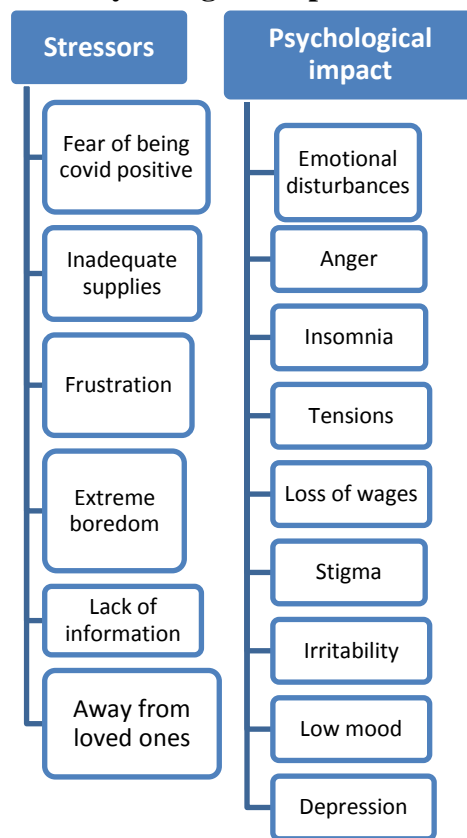
The stressors and the psychological impact which people had after quarantined are described below:

Quarantine is one of the most important measures and spending time in quarantine can take a serious mental toll. People were observed to commonly experience: fear of being infected, sadness, insomnia, depressive symptoms, extreme boredom, frustration, anger, irritation. The themes and codes are depicted in Figure number 2. The narrative description is given below.

- When asked about their stress during quarantine period one female interview said “When I was quarantined for 14 days in a hospital, I was very scared thinking about the fact that I can get infected with corona virus. During the period of quarantine in the hospital I felt there was extreme boredom as we were not allowed to go out anywhere and had to be within the 4 walls”.
- Another person said “it was very frustrating to be quarantined; it was very hard to be away from our family members for 14 days, I missed my loved ones a lot and was feeling very helpless as I could not even meet them during the whole period of quarantine.”
- “I know for preventing the spread of the disease to others one of the measures is to be quarantined as I had travelled from London, but the period of quarantine was very tough and in those 14 days I had become very irritable and used to be tensed most of the time thinking what if I get infected from corona virus, because of that I could not sleep most of the nights.” said by a male person.
- One more said “More than getting worried about getting infected with corona virus, I was thinking that if I become covid positive than all my near and dear ones will be away from me and they can’t even come to meet me and my neighbours will keep me away and I won’t be allowed to enter my own apartment because of the stigma people have about corona virus” “Being quarantined alone in a place for 14 days was really torturous, I really did not know what to do and it was difficult to get things we needed and I could not go out to buy whatever I wanted also, had to depend on the delivery person and I was feeling really left out as even the delivery person used to drop the things at my door step and I had to collect it later” as said by a male subject.

With regard to wages, one person said that “It is very stressful to be quarantined as my company is not giving salary for my quarantine period so I am losing 14 days of salary which will be a very big financial loss to me and my family. Although schools are not functioning and only online classes but I have to pay my kids fees, so with 14 days of loss it is very difficult to bear my responsibilities.”

One female subject said “ I am really getting very bored being quarantined as my child is also quarantined and it is very difficult to be alone and the place I am quarantined there is no TV also, so I am getting extremely bored and sometimes I am feeling very depressed and not in a mood to have food also. I am not getting proper sleep also in the night times. I Hope the quarantine gets over soon and also hope to be tested negative.

Figure 2: Stressors and Psychological impact of being quarantined**Discussion:**

This is the one of the very few studies from India to explore the psychological impact of being quarantined following exposure to covid-19 using mixed methods approach. In our study among the people who were interviewed all the people felt that they experienced extreme boredom, being away from loved ones, frustration and fear of turning covid-19 positive. Whereas 3 people felt that there was stigma associated with -19 and that they had to lose their wages because of the quarantine. Very few people felt that they were depressed when they were quarantined. The study subjects had no post traumatic stress disorder.

People quarantined because of being in close contact with those who potentially have SARS reported various negative responses during the quarantine period: over 20% (230 of 1057) reported fear, 18% (187) reported nervousness, 18% (186) reported sadness, and 10% (101) reported guilt. Few reported positive feelings: 5% (48) reported feelings of happiness and 4% (43) reported feelings of relief.[7]

Low mood (660 [73%] of 903) and irritability (512 [57%] of 903) stand out as having high prevalence.[8]

In the present study: Stressors and Psychological impact of being quarantined is depicted in the Figure 2.

A study comparing post-traumatic stress symptoms in parents and children quarantined with those not quarantined found that the mean post-traumatic stress scores were four times higher in children who had been quarantined than in those who were not quarantined. [9]

In one study compared psychological outcomes during quarantine with later outcomes and found that during quarantine, 7% (126 of 1656) showed anxiety symptoms and 17% (275) showed feelings of anger, whereas 4–6 months after quarantine these symptoms had reduced to 3% (anxiety) and 6% (anger). [10]

A study of hospital staffs, who might have come into contact with SARS found that immediately after the quarantine period (9 days) ended, having been quarantined was the factor most predictive of symptoms of acute stress disorder. In the same study, quarantined staffs were significantly more likely to report exhaustion, detachment from others, anxiety when dealing with febrile patients, irritability, insomnia, poor concentration and indecisiveness, deteriorating work performance, and reluctance to work or consideration of resignation. [11]

In another study, the effect of being quarantined was a predictor of posttraumatic stress symptoms in hospital employees even 3 years later. [12]

General education about the disease and the rationale for quarantine and public health information provided to the general public can be beneficial to reduce stigmatisation, whereas more detailed information targeted at schools and workplaces might also be useful. It might also be that media reporting contributes to stigmatising attitudes in the general public; the media is a powerful influence on public attitudes and dramatic headlines and fear mongering have been shown to contribute to stigmatising attitudes in the past (eg: during the SARS outbreak). [13]

In a qualitative study done in Toronto on health care workers [14]

3 major themes concerning psychosocial effects were derived: loss, duty, and conflict. The participants had felt physical and social isolation in the study. In addition to the physical and social isolation, health care workers experienced stigma as a result of their exposure to SARS, which is similar to our study findings.

In a rapid review done it was observed that multiple aspects of quarantine can increase psychological distress in both the general public and healthcare workers, but strategies can minimize these stressors. [15]

Other qualitative surveys which were done on quarantined people reported the symptoms like general psychological symptoms [16], emotional disturbance [17], depression [18], irritability and insomnia [19] which were almost similar to our study results.

Most reviewed studies reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger. Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Some researchers have suggested long-lasting effects. In situations where quarantine is deemed necessary, officials should quarantine individuals for no longer than required, provide clear rationale for quarantine and information about protocols, and ensure sufficient supplies are provided. Appeals to altruism by reminding the public about the benefits of quarantine to wider society can be favourable.

Conclusion:

The psychological impact of quarantine is wide-ranging, substantial, and can be long lasting. This is not to suggest that quarantine should not be used; the psychological effects of not using quarantine and allowing disease to spread might be worse.[20]

However, depriving people of their liberty for the wider public good is often contentious and needs to be handled carefully. If quarantine is essential, then our results suggest that officials should take every measure to ensure that this experience is as tolerable as possible for people. This can be achieved by: telling people what is happening and why, explaining how long it will continue, providing meaningful activities for them to do while in quarantine, providing clear communication, ensuring basic supplies (such as food, water, and medical supplies) are available, and reinforcing the sense of altruism that people should, rightly, be feeling. Health officials charged with implementing quarantine, who by definition are in employment and usually with reasonable job security, should also remember that not everyone is in the same situation. If the quarantine experience is negative, the results of this Review suggest there can be long-term consequences that affect not just the people quarantined but also the health-care system that administered the quarantine and the politicians and public health officials who mandated it.

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