Vulnerability to Psychological Issue among the COVID-19 Quarantine in Manipur: A Preliminary Study

Miranda Yendrembam[1*], Pampak Khumukcham[2], Athokpam Ranita Devi[3], Henry Konjengbam[1], Sanjenbam Yaiphaba Meitei[1] and Arundhati Devi Maibam[4]

[1]*Department of Anthropology, Manipur University, Imphal, Manipur, India*

[2]*Department of Clinical Psychology, Regional Institute of Medical Sciences, Imphal, Manipur, India*

[3]*National Mental Health Programme (NMHP), Directorate of Health Services, Manipur, India*

[4]*Department of Anthropology, DM College of Sciences, Imphal, Manipur, India*

[*]*Corresponding e-mail:* miranda.yendrembam@gmail.com

ABSTRACT

Objective: *Quarantine is one of the essential intervention measures to curtail the further spread of infectious diseases especially in the wake of the COVID-19 outbreak, it has been adopted as an effective way as with earlier experiences like the Severe Acute Respiratory Syndrome (SARS) in 2003. However, psychological issues among these individuals undergoing quarantine become more vulnerable as they have either been exposed or contacted with infected individuals. The study has been taken to understand the psychological issues and their different components among the quarantine of the COVID-19 pandemic.* ***Materials and Methods:*** *A cross-sectional study was conducted through telephonic interviews among quarantine individuals before undertaking the COVID-19 RT-PCR (Real-Time Reverse Transcriptase-Polymerase Chain Reaction) test. A total of 100 individuals (61 males and 39 females) aged above 18 years was participated in the study after taking consent. General Health Questionnaire-28 (GHQ-28) is used to determine mental health. Receiver Operator Characteristics (ROC) analysis is used to determine the main components leading to psychological problems among quarantine individuals. And spearman rank correlation was calculated to determine the correlation between a history of mental illness and psychological problems.* ***Results:*** *The rate of psychological issues among the individuals under quarantine is found to be 27%. Females (35.89) are found to be more affected than males (21.31). In ROC analysis of males, the Area Under the Curve (AUC) value of somatic symptoms, anxiety/insomnia, severe depression, and social dysfunction are found to be 0.925, 0.914, 0.682, and 0.421, respectively. Among females, the AUC value of somatic symptoms, anxiety/insomnia, severe depression, and social dysfunction are found to be 0.856, 0.714, 0.493, and 0.701, respectively. Spearman rank correlation (r) is found to be 0.32.* ***Conclusion:*** *Females are more prone to psychological issues. Among the four subscales that lead to psychological issues, somatic symptoms and anxiety/insomnia are more accurately predictive. And there is a moderate correlation between the history of mental illness and psychological problems. The study has implied that the mental health aspect needs to be acknowledged in dealing with the pandemic with special regard to the people undergoing quarantine.*

Keywords: Quarantine, Psychological issues, COVID-19, Manipur

INTRODUCTION

The outbreak of COVID-19 had its bearing across the globe with subsequent nationwide lockdowns. Countries completely or partially closed borders while international and domestic flight movements were being curtailed. A strict standard operating procedure like social distancing, isolation, quarantine was adopted by a majority of the countries to prevent further widespread of the infection and other complications associated with it because the medicinal remedy was not available and hence isolation and quarantine were mainly taken up like in the previous potential pandemic like situations [1]. Isolation is the process of separation of a sick individual who is infected whereas quarantine is also the separation who had the exposure to a contagious disease to screen and check if they develop any form of symptoms.

Research evidence has shown that isolation and quarantine be effective to measure to contain the contagious disease by early screening and detection in earlier experiences like the Severe Acute Respiratory Syndrome (SARS) in 2003; Equine influenza in 2008; and Swine Flu in 2009 [2]. The general public was ushering with fear, anxiety, and worry with the uncertainty associated with the pandemic after the declaration of COVID-19 as a public health emergency [3]. People of all age groups were affected by the confinement and getting adjusted to the "New Normal" [4]. The psychological challenges that had arisen out of it were inevitable with the apprehension of one contracting the disease or the fear/worry of loved ones getting affected [5]. The quarantined experience was consequently bound to be more stressful as they are most likely to be affected.

The impact on mental health among the people going through quarantine is one aspect that needs to be addressed. High levels of stress due to the very idea of contracting the disease and later preoccupation with the anticipated experience of stigma and discrimination contributed to causing Depression and Anxiety among the quarantine [6]. Literature studies have elucidated that acute stress disorder and other psychological disorders quarantined individuals who included health care workers. Aggravation of pre-existing mental health conditions or other medical issues was observed [7]. Young people were more prone to develop high levels of stressful reactions [8,9]. A recent study in India has substantiated that severe stress reactions (46%) followed by anxiety and depression while assessing the psychological impact during the quarantine period of COVID-19 infected persons [1]. The present study aims to explore the risk for developing mental health problems by assessing the four components of mental health problems- somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression. The study also attempts to ascertain the correlation of mental health history with vulnerability to psychiatric health issues among the quarantine before undertaking the COVID-19 test in Manipur.

MATERIALS AND METHODS

The present study is a preliminary study where the respondents were recruited through telephone interviews among the quarantined individuals from April to June 2020 before undertaking the COVID-19 test. The interview was taken in addition to the routine call made as a part of the Psychological Support Team of National Health Mission, Manipur while the individuals were staying at the various quarantine centres opened up by the Government of Manipur (as one of the measures to tackle the COVID-19 crisis) with the aid of local authorities in the state. The data collection was initiated when the Indian Government had partially lifted lockdown in April 2020 to allow inter-state movement for persons who were stranded in other states in a graded manner with strict Standard Operating Procedure (SOP). Prior permission for the study was taken from the Department of Health and Family Welfare, Government of Manipur, as the case allotment was under their discretion. The Institutional Ethics Committee of Manipur University had approved the study, under reference no. MU/IHEC/2020/001. As of June 2020, 15,767 individuals who are isolated or quarantined have been given counselling [10]. A total of 100 (70 males and 30 females) individuals aged above 18 years were included in the study who were willing and had given consent. The sample size was estimated using EpiInfo software considering the number of individuals given counsel as the population size with 50% expected frequency of detection and 8% acceptable margin of error, giving confidence level at 90% [11]. The impact on mental health was determined by using General Health Questionnaire-28(GHQ 28) as a screening tool to assess those who are likely to be at risk for developing mental health problems. It is a 28-item test along with four sub-scales which indicates somatic symptoms (items 1-7); anxiety/insomnia (items 8-14); social dysfunction (items 15-21) and severe depression (items 22-28) and a total score of 28 and above would indicate the presence of psychological issues or poor psychological wellbeing [12]. Relevant statistical analysis was done using IBM SPSS Statistics Version 26. The prevalence rate among the sample was ascertained. Receiver Operator Characteristic (ROC) analysis was used to predict the main contributors among these components leading to psychiatric problems. While Spearman rank correlation was used to find the relationship between the history of mental illness and psychiatric problems among the sample using IBM SPSS Statistics Version 26.

RESULTS

Table 1 indicates the prevalence of psychological problems among quarantined individuals before undertaking the COVID-19 RT-PCR test. Out of the total sample, 27% were vulnerable to develop psychiatric issues amongst the vulnerable group, the females were observed to be at greater risk with a 35.9% prevalence rate which is higher than

their male counterparts (21.3%). Moreover, there is no statistically significant difference between the gender-wise prevalence of psychological problems.

Table 1 Prevalence of psychiatric problems among the quarantined individuals

Psychiatric Problems	Male		Female		Total		Chi-Square	p-value
	Frequency	%	Frequency	%	Frequency	%		
Yes	13	21.3	14	35.9	27	27.0		
No	48	78.7	25	64.1	73	73.0	2.57	0.109053
Total	61	100.0	39	100.0	100	100.0		

Table 2 illustrates the Receiver Operating Characteristic (ROC) analysis which predicts the main components out of the four subscales namely, somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression that contribute more leading to psychological problems. ROC analysis reveals that among the males, somatic symptoms and anxiety/ insomnia have AUC values of 0.92 and 0.91 followed by severe depression (AUC-0.68) and social dysfunction (AUC-0.42) which implies that males were experiencing greater symptoms of somatic complaints and anxiety issues. Whereas for females, the AUC value for the four subscales that is, somatic symptoms=0.856, anxiety=0.714, and for social dysfunction=0.701 and the lowest value of 0.493 for severe depression (AUC values considered less when compared to the males).

Furthermore, results have also indicated that the spearman rank correlation is 0.32 which was found to be significant (p>0.01) between the individuals having a history of mental illness and the risk for developing psychological problems.

Table 2 Receiver Operator Characteristic (ROC) analysis to determine the main components leading to psychiatric problems

Area under the ROC curve (Male)			
Test result variables (s)	**Area**	**p-value**	**95% CI**
Severed Depression	0.682	0.046*	(0.51-0.85)
Social Dysfunction	0.421	0.383	(0.24-0.60)
Anxiety	0.914	0.000*	(0.83-0.99)
Somatic Symptoms	0.925	0.000*	(0.84-1.00)
Area under the ROC curve (Female)			
Test result variables (s)	**Area**	**p-value**	**95% CI**
Severed Depression	0.493	0.942	(0.28-0.69)
Social Dysfunction	0.701	0.039*	(0.53-0.87)
Anxiety	0.714	0.028*	(0.55-0.87)
Somatic Symptoms	0.856	0.000*	(0.73-0.98)

*AUC (Area under Curve) AUC greater than 0.9 has higher accuracy in predictive analysis, while 0.7-0.9 indicates moderate accuracy and a value of 0.5-0.7 indicates low accuracy

DISCUSSION

The study is a preliminary approach to address the mental health facet amongst the people undergoing quarantine. Out of the total sample, 27% had mental health issues which are indicative of the quarantine had an impact on them which somehow aligns with a recent study that the quarantine period has led people to experience psychological distress in the form of depression, anxiety, and stress [13,14]. Psychological distress during such trying times becomes inevitable with the very various restrictions imposed due to the pandemic. A phenomenon affecting people across the globe, a situation causing a threat to the very existence of humanity. Psychological issues in the form of anxiety, depression,

post-traumatic stress disorder, aggravation of pre-existing mental health conditions have been evident in studies in the context of mental health with the advent of a pandemic; while the rest of 73% were at lower risk [5,15].

Women were found to be more at risk than their male counterparts amongst the 27% at risk because their mental health is affected more adversely due to a lot of socio-cultural factors and does not only pertain to just biological underlying and also less representative of females in the study could be a factor. However, gender differences are bound to increase especially for working women and single parents with an increase of parental stress due to the online mode of education especially for taking care of children with special needs like Autism, ADHD, etc [16,17]. Their multiple roles as a home-maker (a traditional role) requiring them to look after other family members and also handling the various demands of the job enhances workload because with the added constraint put on due to the quarantine, limited resources and support; feelings of worry, overwhelming and insecurity can be an issue [18].

The administration of GHQ and its four components which are somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression, leading to psychiatric problems has implied that out of the total sample males were more vulnerable to develop psychological issues with somatic issues with an AUC value of 0.925 which could be attributed to the fear of long term health consequences due to the diseases. It is closely followed by anxiety/insomnia with an AUC value of 0.914 arising due to the tension of financial implications arising out of the economic recession and depressions and a consequent sense of powerlessness because of the confinement [19]. Women are also affected with somatic symptoms more than the other components with an AUC value of 0.856, the demands of multiple roles in life and the worry/fear of loved ones getting infected with women being emotionally more vulnerable have manifested into somatic concerns [20]. Somatic symptoms and anxiety/insomnia are more evident irrespective of gender due to the natural stress responses of the body when faced with a public health emergency of international concern [4].

There is a significant relationship between persons having a history of mental health illness and the risk for developing psychiatric problems. Fear of contamination of the disease, confinements, restrictions in the form of social distancing, marked changes in the established daily routine has only made individuals feel helpless and out of control which has only caused to be a stressor for a relapse of symptoms in any degree [21,22].

Limitation of the Study

The study was based only on the geographical location of Manipur and the small size of the sample could lead to constraints in generalization. A thorough investigation covering the majority of the Indian states and all the facets of mental health issues like coping strategies could be incorporated among individuals going through quarantine as well as isolation.

Significance of the Study

Manipur as a part of India has faced a pandemic for the very first time and it becomes important to document the psychological issues people experience when undergoing quarantine as it was a major step taken to curtail further spread of the infectious disease in April 2020. Establishing such research findings would aid in bringing about greater mental health awareness and various approaches could be adopted in policy framing by various stakeholders in the future.

CONCLUSION

Considering the pandemic situation due to COVID-19, the uncertainty factor has aroused nothing but fear, worry, and anxiety amongst the people around the globe. It has become more of a mental health concern. With the various interventions taken to curtail the disease, quarantine has been implemented on a larger scale, even though for all the right reasons, the effect on mental health cannot be undermined. The study has helped to highlight the impact on mental health that people go through while putting up in quarantine amidst the pandemic. For a small developing state like Manipur, where it has been taking every possible step to curtail and contain the pandemic in its best way possible, it becomes imperative to acknowledge the mental health aspect since dealing with the COVID-19 has been more of a psychological challenge. It calls for an approach and interventions where the needs of psychological distress are handled with utmost importance along with providing a conducive environment where every basic amenity is available with easy access to any healthcare concern. With the right kind of measures, the stress that individuals experience could be perhaps lessened to further prevent any deterioration of mental health issues.

DECLARATIONS

REFERENCES

[1] Upadhyay, Raja, Bhupendra Singh, and Upendra Singh. "Psychological impact of quarantine period on asymptomatic individuals with COVID-19." *Social Sciences & Humanities Open,* Vol. 2, No. 1, 2020, p. 100061.

[2] Krumkamp, Ralf, et al. "Impact of public health interventions in controlling the spread of SARS: Modelling of intervention scenarios." *International Journal of Hygiene and Environmental Health,* Vol. 212, No. 1, 2009, pp. 67-75.

[3] World Health Organization. "Mental health and psychosocial considerations during the COVID-19 outbreak." No. WHO/2019-nCoV/MentalHealth/2020.1. World Health Organization, 2020.

[4] Department of Clinical Psychology. "Resource material: Online training of psychologists for providing brief and basic telephonic psychological support in the context of COVID19." National Institute of Mental Health and Neuroscience, 2020.

[5] Wang, Yenan, et al. "Study on the public psychological states and its related factors during the outbreak of Coronavirus disease 2019 (COVID-19) in some regions of China." *Psychology, Health & Medicine,* Vol. 26, No. 1, 2021, pp. 13-22.

[6] Alkhamees, Abdulmajeed A., et al. "Psychological distress in quarantine designated facility during COVID-19 pandemic in Saudi Arabia." *Risk Management and Healthcare Policy,* Vol. 13, 2020, pp. 3103-20.

[7] Brooks, Samantha K., et al. "The psychological impact of quarantine and how to reduce it: Rapid review of the evidence." *The Lancet,* Vol. 395, No. 10227, 2020, pp. 912-20.

[8] Antunez, Zayra, and Eugenia V. Vinet. "Depression Anxiety Stress Scales (DASS-21): Validation of the abbreviated version in Chilean university students." *Psychological Therapy,* Vol. 30, No. 3, 2012, pp. 49-55.

[9] Martin I. "Academic stress in university students." *Notes of Psychology*, Vol. 25, 2007, pp. 87-99.

[10] State Psychological Support Team Covid-19, Directorate of Health Services, Manipur, India. 2020.

[11] Dean, A. G., et al. "Epi Info™, a database and statistics program for public health professionals." *CDC, Atlanta, GA, USA,* 2011.

[12] Sterling, Michele. "General health questionnaire-28 (GHQ-28)." *Journal of Physiotherapy,* Vol. 57, No. 4, 2011, p. 259.

[13] Burke, Tom, et al. "Increased psychological distress during COVID-19 and quarantine in Ireland: A national survey." *Journal of Clinical Medicine,* Vol. 9, No. 11, 2020, p. 3481.

[14] Reynolds, Diane L., et al. "Understanding, compliance and psychological impact of the SARS quarantine experience." *Epidemiology & Infection,* Vol. 136, No. 7, 2008, pp. 997-1007.

[15] Li, Zhenyu, et al. "Vicarious traumatization in the general public, members, and non-members of medical teams

aiding in COVID-19 control." *Brain, Behavior, and Immunity,* Vol. 88, 2020, pp. 916-19.

[16] Almeida, Marcela, et al. "The impact of the COVID-19 pandemic on women's mental health." *Archives of Women's Mental Health,* Vol. 23, 2020, pp. 741-48.

[17] Mihashi, Mutsuko, et al. "Predictive factors of psychological disorder development during recovery following SARS outbreak." *Health Psychology,* Vol. 28, No. 1, 2009, pp. 91-100.

[18] Maiti, T., and B. Rai. "Women mental health during COVID 19 and lock down: A brief narrative and introspection." *Clinical Psychiatry,* Vol. 6, No. 3, 2020, p. 71.

[19] White, Alan. "Men and COVID-19: The aftermath." *Postgraduate Medicine,* Vol. 132, No. sup4, 2020, pp. 18-27.

[20] Chatterjee, Seshadri Sekhar, C. Malathesh Barikar, and Abir Mukherjee. "Impact of COVID-19 pandemic on pre-existing mental health problems." *Asian Journal of Psychiatry,* Vol. 51, 2020, p. 102071.

[21] Neelam, Kishen, et al. "Pandemics and pre-existing mental illness: A systematic review and meta-analysis." *Brain, Behavior, & Immunity-Health,* Vol. 10, 2020, p. 100177.

[22] Gonzalez-Sanguino, Clara, et al. "Mental health consequences during the initial stage of the 2020 Coronavirus pandemic (COVID-19) in Spain." *Brain, Behavior, and Immunity,* Vol. 87, 2020, pp. 172-76.