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# Delayed Mental Health Impacts of COVID-19 and Confinement Strategy: Distillates of a Prospective Study from North Kashmir

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

**Background:** Since December 2019, the Covid-19 pandemic has pushed mankind into a whirlpool of fear, anxiety, and uncertainty. There has been a 'Covidization'of medical literature. Despite abundant studies on immediate mental health impacts, there is a dearth of literature on work related to delayed impacts of Covid-19 on mental health. This facet of delayed mental health impacts needs characterization and quantification, for, putting in place a framework of working guidelines to tackle such mental health issues in case of any future health catastrophes
**Aim:** To gauge the delayed mental health impacts on the inmates who were discharged from a confinement facility in Kashmir. The interactions were conducted on mobile phones.
**Methods:** A primary care physician and his associates, who were actively involved in the care of inmates at the confinement facility, followed up the consenting inmates at 6-8 weeks after discharge by way of mobile call interactions. Questionnaire-based thematic queries were put to the participants and responses were recorded. This confinement facility was an isolation–quarantine 'Covid Care' Centre of Associated Hospital, Government Medical College, Baramulla in North Kashmir for most months of the year 2020.
**Results:** The data was collected, collated and analyzed. Various qualitative and quantitative inferences were generated. Certain suggestions/ recommendations were also presented.

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## 1. INTRODUCTION

Coronavirus is an enveloped RNA virus, causing many acute and chronic infections in mammals and birds. Electron microscopy depicts that their most noticeable feature is the presence of certain surface projections, appearing as a fringe of widely spaced, club-shaped spikes. The 'halo' of these spikes gave the viral particle the appearance of 'solar corona', hence the adoption of the name – 'Corona Virus [1]. In humans, Covid-19, the coronavirus disease is caused by a novel strain of β Corona Viruses which stand designated as Sars-CoV-2 i.e. Severe Acute Respiratory Syndrome [2].

In December 2019, cases of atypical, rapidly progressing, and complex viral pneumonia was observed in patients from Wuhan city of Hubei province in China [3]. Soon these cases of complicated viral pneumonia engulfed China in an epidemic proportion. Within a few weeks new territories were affected across the globe. The magnitude of this illness (Covid-19) was such that on 30 January 2020 World Health Organization declared it as an international public health emergency. In March 2020 based on the available inputs WHO declared Covid-19 as a "Pandemic". By 11 of July 2020 i.e. around six months down the timeline, WHO put out figures wherein the number of confirmed cases was upwards of 12 million (12,322,395) and mortality was more than half a million (556,335).

From the administrators' and health professionals' perspective, pandemics remain a 'Medical Phenomenon'. Diagnostics, control and prevention measures like quarantine-isolation (confinement), formulation of treatment guidelines and protocols etc. remain the primary focus. Concurrently, pandemics push the public into a milieu of :- anxious thoughts, panic, mass hysteria, insomnia, obsessive disorders, Xenophobia, domestic violence, substance abuse and above all stigma. Such factors are the denominators of many psychological issues which contribute to various short-term and delayed mental health impacts. [4,5] Poor quality of life and 'Social Dysfunction' are amongst the prominent features of these mental health impacts [6].

Major traumatic events like the threat of personal death/ injury or death of a loved one may predispose patients to develop anxiety. The reaction may occur shortly after trauma, mostly within 24-48 hours, when it is labeled 'Acute Stress Disorder. The reaction can be delayed with symptom onset anytime beyond one month, when it is categorized as the entity- 'Post Traumatic Stress Disorder: PTSD'. Patients with both such syndromes experience symptoms of detachment and loss of emotional responsivity [7].

Patients with stress disorders are at the risk of developing other disorders related to anxiety, mood disorders and substance abuse. Even in the United States of America such disorders contribute to the global burden of mental impacts. Between 5-10% of Americans will at some time in their life satisfy the criteria for PTSD. A gender difference with greater prevalence in females is also observed for PTSD [8].

Psychiatrists believe people staying at home for days together with 'covid trauma' and without keeping themselves busy can have repercussions on their mental health. Five types of illnesses can crop up during this period depression, anxiety, dissociative disorders and obsessive-compulsive disorders; whereas post-traumatic stress disorder has also been witnessed in some patients [9].

Trauma generally refers to an event that is perceived to be severe enough to pose a threat to one's own or another persons' physical or psychological integrity. Consequently, many hospitalized patients may be considered to have suffered trauma, but most people exposed to traumatic events do not go on to develop a mental disorder [10]. They are surprisingly resilient in the face of adversity. However, many people who have suffered traumatic events become severely distressed and some go on to develop a mental disorder. This premise is to be explored in our clinical research work (study).

## 2. METHODOLOGY

This study was conducted on the Covid-19, RT PCR positive patients who were managed and periodically discharged during the period May-July 2020, from the 'confinementfacility' of the Covid Care Centre controlled by the associated hospital of Government Medical College, Baramulla, (J & K- UT).The mode of interaction

was mobile calls within the period 15 June to 15 Aug 2020.This corresponded to the period when these patients (participants) were recovering in their homes, 6-8 weeks after their discharge.

These inmates had consented to be a part of a prospective study, 'questionnaire' and 'mobile call interaction' based ; related to immediate and delayed mental health impacts of covid-19, wherein confinement strategy was one of the denominators. Given the raging pandemic a provisional emergency authorization was obtained from the medical superintendent of the hospital for executing this clinical project work in March 2020.

In the current study we planned to gauge the delayed mental health impacts on the participants from their replies to 14 question constructs derived from a few thematic areas included in the study questionnaire –Annexure I.

The data (n=301) was collected and subjected to statistical analysis. Patients with any previous psychiatric illness, age less than 18 years and inmates discharged before one week of stay were excluded from this study. Owing to the longitudinal nature of this prospective study we are supposed to follow the participants after another 10 weeks to characterize and quantify them for genuine long-term impacts.

## 3. RESULTS

301 participants consented to be part of the study. The sex distribution was 196 males and 105 females. The age of the inmates ranged from 18-82 years. The rural-urban distribution of the cohort was 206 rural and 95 urban participants. Age-specific distribution of the participants was: 46 in the 18-20 years age group, 195 in 21-40 years. age group, 50 in 41-60 years age group and 10 in >60 years age group. No participant failed to respond/interact and no mortality was reported in the cohort during the period relevant to our study. The overall assessment is depicted in Fig. 1.

## 4. DISCUSSION

Quarantine-isolation, a form of 'confinement' with administrative authorization was intense emotional stress on the inmates as it kept them away from their near and dears [11]. Without prejudice to the medico epidemiological benefits of 'confinement', around 78% of participants (235 of 301) on their follow up during mobile calling at around six weeks, have confirmed immense relief after discharge from confinement. Whereas around 22% of respondents were still jittery. This leads us to infer that susceptibles amongst such patientpopulations remain liable to chronic anxiety and depression and deserve our attention and care [12].

Around of participants 73% (220 of 301) confirmed that while at home their sphere of social acceptance has been indented, because their neighbors and friends were avoiding previously practiced mutually pleasurable activities [13,14]. Unfortunately, during that period there was a constraint on the internet speed in Kashmir, whereby, the public had a deficit in receiving the flow of knowledge regarding Covid 19 [15]. 'Misinfodemics' prevalent viz a vis Covid-19 during those days may also have contributed to this 'social dysfunction' [16].

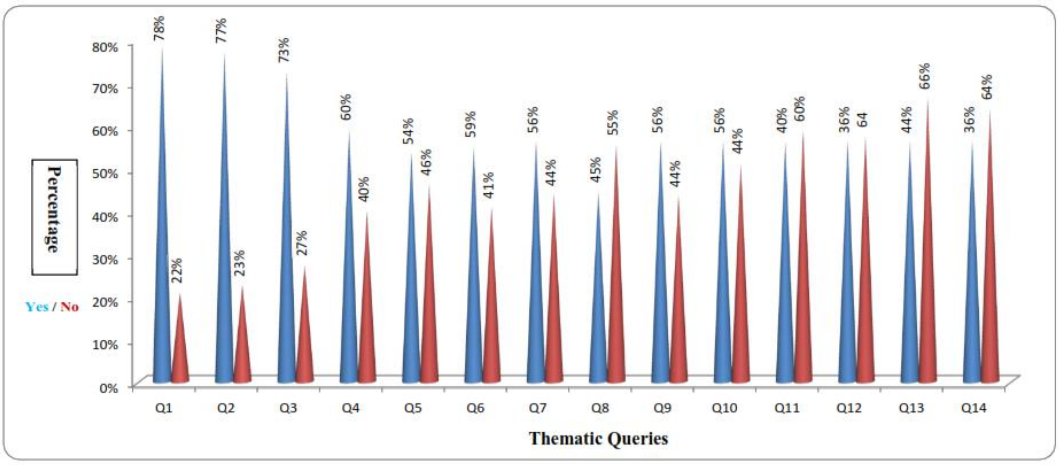


**Fig. 1. Depicting the individual percentage responses to thematic queries**

Around 40% of participants felt that back home their children were interacting normally. However around 60% (181 of 301) felt their children/ siblings were avoiding the activities which were previously cherished. A feature of 'gaps' in social support was evidenced which contributed to chronic anxiety and depression [17]. Moderating influences of social support during tough times were compromised. Nearly half of the respondents (56%) confirmed that they had clear physical symptoms in the form of heart-pounding, breathing trouble, sweating, restlessness etc which might be due to autonomic responses against emotional upheaval [18].

There is a famous clinical dictum in psychiatry 'Traumatic events can resonate'.[19,20] What distills out from these results and inferences is that over the last six to eight weeks since discharge from 'confinement facilities,' the persisting stress-centric milieu was still simmering amongst the respondents thereby acting as a major precipitant for mental imbalances. This is also corroborated by literature evidence [21,22,23].

Prolonged stress emanating from trauma or bizarre life events constitutes the entity – "Post Traumatic Stress Disorder" comprising of three major diagnostic constructs i.e., 'Hyper arousal', 'Re-experiencing'& 'Avoidance'. Hyperarousal is characterized by anxiety, irritability and insomnia. Re-experiencing is suggested by spontaneous intense imagery, flashbacks, etc and avoidance is characterized by difficulty in recalling stressful events at will [24].

Despite being in the confines of their homes, nearly half of the respondents i.e. 54% (163 of 301) were not able to suppress thoughts about their stay in confinement facilities and the covid pandemic in general. Whereby, they were trapped in a vicious circle of anxiety and mental disturbances. Fortunately, another half i.e. 46% (138 of 301) escaped this ordeal. A noticeable void in the emotional domain was noted in around 59% (178 of 301) participants who reported that they were 'numb' i.e. detached from people and activities previously preferred. Interventions are needed as major depressive disorders, panic disorders, other anxiety disorders and substance abuse/ dependence disorders may be a natural sequel for such patients and may require treatment in their own right [25,26,27].

A sizeable chunk of respondents i.e., 45% (135 of 301) were getting 'nightmares' i.e., getting trapped involuntarily in memories of the stay in the confinement centers. Another big proportion of respondents i.e. 56% (169 of 301) felt upset and charged up when someone coming for socializing raked up the issue of experiences during the quarantine-isolation period. This suggested conscious attempts on the part of participants to avoid thinking about their recent confinement experiences [28].

Constructs extrapolated from the queries presented in our questionnaire (Annexure 1) lead us to assert that a subtle form of PTSD is visible in our cohort at around six weeks. We propose the descriptive term 'Post Traumatic Stress State'; because going by clinical prudence six weeks appears too short an interval for the label of PTSD [29]. However, as part of our prospective longitudinal study, we are supposed to again interact with these respondents after another ten weeks to delineate the numbers coming out of this 'Post Traumatic Stress State' as also the persistors, who may need some interventions and further follow up and may more rationally be classified as PTSD cases [30].

Around 56% (169 of 301) respondents were entangled in recurring thoughts of guilt for not following precautions, getting infected with the COVID-19 virus, and landing in quarantine-isolation facilities. Such thoughts labeled in literature as 'survivor guilt' can become promoters and propellers of anxious states [31]. Nearly 40% of participants affirmed that they suffered from some pattern of sleeping difficulties, amongst them; one-third required medications. Literature evidence points out that upto 90% of people with PTSD or its variants report sleep disturbances such as nightmares and insomnia. In various studies examining the various physiological basis for sleep disturbances in PTSD, both the macro-level and micro-level factors have been implicated. Frequent nightmares that are the hallmark of PTSD are believed to occur in rapid eye movement (REM) sleep. However, it is unclear why some survivors develop PTSD and others do not. Nearly one-third of respondents (36%) had intense negative feelings like poor concentration, shame, guilt, etc [32].

A nagging concern was prevalent in around 77% (232 of 301) respondents regarding avoiding social contact for curbing the spread of the virus

[33]. Approximately 44% (132 of 301) participants felt that their activities of daily living were affected because they had difficulties in experiencing positive feelings. Some had to take counsel/consult and medications for certain negative mental health impacts observed during these six weeks. However, magnitude did not attain a level that could lead to any suicidal ideation/thoughts [34]. Back home, from the confinement facilities around one-third of male participants (36%) observed an increase in smoking.

## 5. CONCLUSION

During pandemic times in addition to the medical care, we need to address the mental health needs of the inmates in confinement facilities. Such care needs to be extended to this cohort while they reach their homes and during their further stay. Based on certain conceptual distillates derived from our study the following recommendations may be considered:-

There is a pressing need for the creation of a 'counsel and care collegium' comprising of an independent cadre of psychiatric nurses, general physicians, clinical psychologists, psychiatrists, and community volunteers including teachers. For implementing this care concept, a digital network needs to be provided for issue-based 'virtual discussions' with designated teams at higher centers like medical colleges and institutes.

Patients returning home from facilities should follow a proper schedule of activities to keep themselves engaged like exercise, meditation, prayers, yoga, etc. Adequate sleep and proper diet should be given importance in their recovery schedules. Whenever needed Covid related authentic information should be sought from Government websites and WHO sources. Deliverance of the virtual mode of moral education by the faith leaders at the community level should be encouraged. Strict implementation of anti-hoarding laws for essential items like medicine and health care delivery devices like portable oxygen sources should be ensured.

## CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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## ANNEXURE -I QUESTIONNAIRE
## (Queries for Telephonic Interaction)

1. Do you have a distinct feeling of relief after leaving quarantine facility? ☐Yes ☐No
2. Do you feel depressed because of fear that you might spread the disease to others? ☐Yes ☐ No
3. Do you feel any change in the behavior of neighbors and friends towards you? ☐Yes ☐No
4. Do you feel your kids are avoiding the activities they enjoyed with you in the past? ☐Yes ☐ No
5. Despite efforts to the contrary, you are not able to suppress thoughts about the Pandemic? ☐ Yes ☐No
6. You have a definite feeling of numbness or being detached from people, activities or surroundings? ☐Yes ☐No
7. Do you feel guilty and are unable to stop blaming yourself for landing up in the quarantine? ☐ Yes ☐No
8. You have tried hard not to think about the COVID-19 Pandemic, but are getting nightmares? ☐Yes ☐No
9. Do you get very upset when someone reminds you about your experiences regarding stay in facility? ☐Yes ☐No
10. Do you feel any physical symptoms e.g heart pounds, negativity, trouble breathing, restlessness ☐Yes ☐No
11. Do you feel difficulty in falling or staying asleep? ☐Yes ☐No
12. Do you have intense negative feelings like fear, horror, anger, guilt or shame? ☐Yes ☐No
13. Do you feel difficulty experiencing positive feelings? ☐Yes ☐No
14. Have you observed increased smoking or need of any other drug? ☐Yes ☐No



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