

A STUDY TO ASSESS THE EMOTIONAL DISTURBANCE AND RISK FACTORS AMONG COVID-19 CONFIRMED CASES IN ISOLATION WARD, CHENNAI

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Abstract

Patients with coronavirus disease (COVID-19) have been isolated in hospital managed isolation wards under a policy of the Indian government (2019). Centrally isolation patients are more likely to experience psychological symptoms. The purpose of the study was to investigate emotional disturbance during their isolation period and then pinpoint the factors during their isolation period associated with the emotional disturbance. We retrospectively analysed the medical charts of the patients confined to a isolation ward between May 28 and July 3, 2021. The 5-item brief symptom rating scale (BSRS-5) was used to evaluate emotional disturbance levels. Descriptive and logistic regression was used for the data analysis. In total, 197 complete medical records were reviewed, and of these 84 (42.6%) showed emotional disturbance. The majority of them reported only minor disturbance ($n = 49, 58.3\%$). After controlling for confounding factors, being satisfied about medical information was the only protective factor associated with emotional disturbance ($OR = 0.2, P = 0.018$). Being a male patient ($OR = 3.0, P = 0.005$), worrying about stigmatization ($OR = 2.2, P = 0.041$) and being unable to contact family members ($OR = 2.9, P = 0.018$) increased the risk of experiencing emotional disturbance. Patients with clinical symptoms, namely sore throat ($OR = 3.4, P = 0.013$) and muscle aches ($OR = 6.3, P = 0.005$), were also found to be more likely to report emotional disturbance. Mental disturbance commonly occurs among patient with COVID-19 who are isolated in a hospital managed wards. Being a male patient, having symptoms, namely a sore throat and muscle pain, being unable to contact family and/or a failure to receive sufficient medical information were found to be associated with emotional disturbance. In order to help isolated patients, government officials should provide a clear rationale for isolation and recognize the patients' efforts to follow the government's policy, which will help to minimize social stigma.

Keywords: Hospital, Isolation Ward, COVID-19, Emotional Disturbance.

INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel human coronavirus that has caused the recent global pandemic of coronavirus disease 2019 (COVID-19). Since the first case was identified in December 2019 (Nishiura et al. 2020), the world coronavirus tracker has shown that there has been approximately 2.5 billion confirmed cases of the disease, and more than 5 million people have died due to COVID-19 over the period December 2019 to November 2021 (World Health Organization 2021). The abrupt increase in confirmed cases and deaths has severely disrupted healthcare system across the globe and had a major effect on the world economy, while at the same time overwhelming healthcare personnel (Banerjee 2020). World Health Organization (2021) has advocated that COVID-19 vaccination has the best chance at defeating the pandemic. Before a high enough vaccination rate can be reached, quarantine after possible exposure or isolation for a confirmed infection, even without symptoms, was recommended by the Centers for Disease Control and Prevention (CDC) in the US, by the WHO, and by many countries; to block the transmission of SARS-CoV-2 in the general population (Centers for Disease

Control and Prevention 2021; Chen et al. 2020; Nam et al. 2021; World Health Organization 2021).

Once people are confirmed with SARS-CoV-2 infection, they are separated from the general population who are not infected in order to prevent the spread of the virus and to protect the uninfected individuals (Chennai Centers for Disease Control and Prevention 2021; Chen et al. 2020; Nam et al. 2021; World Health Organization 2021). In many countries, people with asymptomatic or mild COVID-19 undergo home isolation, which is of lower cost to the state but is at the same time the lowest level of medical utilization. However studies have shown in the US that facility-based isolation is both more successful and effective than home-based isolation when curbing a pandemic; this approach reduces significantly new cases (Chen et al. 2021). During 2020, the pandemic had a relatively small impact on Chennai compared to other countries, only 57 local cases in 1 year (Chennai Ministry of Health and Welfare 2022). However, an outbreak and sharp surge in cases occurred in mid May 2021 and this flare-up impacted on the healthcare system in Chennai. The number of confirmed cases increased from the hundreds to near 7000 within 2 weeks during May 2021, mainly in Greater Taipei area; the result was a high rate of acute respiratory failure, and relatively high mortality rate (5.17%; Chennai Centers for Disease Control and Prevention 2021). Despite the Chennai Ministry of Health and Welfare declaring a level 3 epidemic alert on 19 May, 2021, the medical capacity available was not sufficient in response to the spike in cases at that time. In light of this the New Taipei City government ordered that wards become emergency isolation sites. These were managed by a hospital and used for confirmed asymptomatic cases or for cases with mild symptoms; the aim being to reduce the number of new infections in the general population by isolation (Chen et al. 2021).

Despite the physical symptoms any confirmed cases might have, some of them also reported psychological symptoms, such as insomnia, anxiety, and depression, as well as even post-traumatic stress disorder (PTSD) symptoms on occasion (Hamza et al. 2021; Huremovic 2019). Based on the lessons we have learned in the past, it is clear that without proper management these patients might continue to suffer from their psychological symptoms, including anxiety, depression, and PTSD for 1 to 50 months after the isolation ended even after they have recovery from a traumatic disease such as severe acute respiratory syndrome (SARS) or middle east respiratory syndrome (MERS; Brooks et al. 2020; Cheng et al. 2004; Lam et al. 2009). Past experience has told us that it is very important to assess and manage the mental health of these COVID-19 patients in addition providing appropriate medical treatment and intensive care if required.

According to the anti-epidemic policy of New Taipei City, people who are positive for SARS-CoV-2 RNA, as confirmed by Liat Real-Time RT-PCR, would be admitted to a designated isolation ward; they would only be discharged when they tested negative for SARS-CoV-2 RNA by either a negative Liat real-time RT-PCR or a PCR result with a cycle threshold of >27 . During their isolation time, the patients would be transferred to a hospital if $SpO_2 < 94\%$ and their health worsened. The designated isolation wards were managed by healthcare experts in order to optimize the effect of group isolation by expanding the hospital bed capacity, reducing the healthcare system burden, monitoring changes in health of the confirmed cases, and providing appropriate profession health services as needed. However, a systematic review of 24 studies has clearly found evidence of isolation-related psychological impacts, such as long isolation duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma (Brooks et al. 2020). Furthermore, 33% to 53% of confirmed COVID-19 patients were found to have experienced emotional disturbance during their isolation (Brooks et al. 2020; Sher 2020; Sultana et al. 2021; Wang et al. 2020). Mondal and Hossain (2021) reported that positive psychological well-being is as important as physical well-being. Anyone can experience emotional disturbance, even if they do not meet

the criteria for psychological disorder. Since this is the first time that Chennai has used group isolation outside of hospitals for confirmed cases, the purpose of this study was to evaluate the emotional disturbance affecting COVID19 patients and identify the associated stressors experienced during their isolation stay in order to be able to recognize early the patients at risk of emotional disturbance and thus be able to provide appropriate support.

STUDY AIM

The aim of this study was to evaluate the prevalence of emotional disturbance among COVID-19 patients and identify factors contributed to their emotional disturbance during their isolation stay in the hospital managed isolation wards.

METHODS

This was a retrospective chart review study. After hospital institutional review board approval (IRB #:110206-E) was granted, the research team examined a total of 623 charts covering the period 28 May to 3 July, 2021, which was the period of time that medical experts managed the designated isolation ward. The inclusion criterion was that the patient's age was 20 years old and above. Cases with incomplete chart information, such as missing symptom assessment data, incomplete emotional, and disturbance assessment results, were not included, and this yielded a total of 197 cases for analysis.

PATIENT CHARACTERISTICS, CLINICAL SYMPTOMS, AND ISOLATION EXPERIENCE

By chart review, the patients' characteristics, clinical symptoms, and isolation experience were recorded. Patient characteristics included gender, age, religion, marital status, children, employee status, living status, financial status, and any chronic diseases (Liu et al. 2021; Putri et al. 2021; Suleyman et al. 2020). The clinical symptoms took the form of dichotomous variables, the variable being entered as yes if the symptom was documented by either the doctor or nurse progress notes, physical examination findings, and patients' self-reports. The clinical symptoms included fever (body temperature $>38.0^{\circ}\text{C}$ tachycardia; heart rate > 90 bpm/min), hypoxemia (SPO2 $< 94\%$), cough, sore throat, diarrhoea, and muscle pain (Bone et al. 1992; Lovato & De Filippis 2020; Mazza et al. 2020; Putri et al. 2021; Suleyman et al. 2020; Sultana et al. 2021).

Additionally, a self-developed survey questionnaire was developed for patients to rate their experience and satisfaction of their isolation stay. This survey questionnaire was sent electronically within 1 week after patients were discharged from the isolation wards. Their isolation experience included stigma, medical information sufficiency, family contact availability, and medical team engagement (Brooks et al. 2020;

Sher 2020; Wang et al. 2020). Their satisfaction regarding the sufficient toiletry supplies, sufficient electronic communication measures, and safety during their entire isolation stay was reviewed (Brooks et al. 2020; Xiang et al. 2020). Patients checked off their experience in each question (Yes vs. No). Their responses were stored in their electronic chart and reviewed later for this study.

Brief symptom rating scale (BSRS-5)

The 5-item brief symptom rating scale (BSRS-5) was used to evaluate emotional disturbance levels. BSRS-5 has five questions that ask patients about their anxiety, depression, hostility, interpersonal sensitivity, and trouble falling asleep (insomnia). Each question score ranged from 0 to 4 points. The cut-off point for severe emotional disturbance was set at a total score of 14 or above, for moderate emotional disturbance was set at between 10 and 13, and for mild emotional disturbance was set at between 6 to 9 (Chen et al.

2020; Lee et al. 2020). For the present study, patients with a BSRS-5 score of 6 or above were counted as having emotional disturbance because support by nonprofessionals is able to relieve mild emotional disturbance (Lee et al. 2021). We hoped that we will be able to identify patients with emotional disturbance early when they only have mild symptoms, and therefore we used the lower cut-off score for mild emotional disturbance as our study cut-off score. The BSRS-5 scale shows good consistency (Cronbach's alpha = 0.77–0.90) and good test–retest reliability ($r = 0.82$; Lee et al. 2021).

Statistical analysis

THE DATA WAS ENTERED AND ANALYSED BY IBM SPSS

Statistics version 18 (Statistics 2021). Descriptive analysis (frequency and percentage) was performed in order to present the patient demographics, patient characteristics, the range of clinical symptoms, experience during isolation at the isolation ward, and the prevalence of emotional disturbance. We used t-tests and Chi squared tests to analyse the relationships between the various factors and emotional disturbance. Furthermore, logistic regression analysis was used to identify the statistically significant factors associated with the occurrence of emotional disturbance.

RESULTS

From 28 May, 2021 to 3 July, 2021, 623 patients were diagnosed with COVID-19 and then isolated in one isolation ward of one of the selected Hospital at Chennai. After excluding incomplete data on the patients, the number of cases remaining was 197, and of these 84 (42.6%) showed emotional disturbance.

The characteristics of the patients diagnosed with COVID-19 and their relationship with emotional disturbance

More than 40% of patients ($n = 84$, 42.6%) experienced emotional disturbance during their isolation. However, the majority of them reported only minor disturbance ($n = 49$, 58.3%). The mean age of patients was 43.7 ± 13.7 years. The majority of them had an education level of college and above, had a religion, had children, had a full-time job, were married, and were relatively healthy (<10% of them had any chronic disease). Patients who reported poor economic status ($X^2 = 11.337$; $P = 0.001$) and who lived alone ($X^2 = 3.903$; $P = 0.048$) were more likely to report emotional disturbance.

SATISFACTION AND EXPERIENCE DURING ISOLATION

In general, the patients were satisfied with their isolation ward stay, including sufficient toiletries ($n = 189$, 95.9%), clear communication measures ($n = 143$, 72.6%), and safety during their stay ($n = 180$, 91.4%). Although less than 50% of patients ($n = 86$, 43.6%) experienced stigmatization due to their confirmed COVID-positive status, 61.7% experienced certain levels of disturbed emotion ($\chi^2 = 22.5$, $P < 0.001$). Furthermore, only 21.2% of patients ($n = 22$) reported receiving insufficient medical management information, but of these patients 68.2% ($n = 15$) experienced emotional disturbance ($X^2 = 6.606$; $P = 0.01$). Among 24.4% of patients ($n = 48$) who had family contact, 66.7% of these patients ($n = 32$) reported emotional disturbance.

THE RELATIONSHIP OF CLINICAL SYMPTOMS AND EMOTIONAL DISTURBANCE

The number of emotional disturbance was higher among patients who had a cough ($X^2 = 7.006$; $P = 0.008$), a sore throat ($X^2 = 20.003$; $P < 0.001$), or muscle pain ($X^2 = 12.14$; $P < 0.001$; table 3).

FACTORS ASSOCIATED WITH EMOTIONAL DISTURBANCE

Males had a three times higher risk of emotional disturbance than females (OR = 3.0, 95% CI = 1.4–6.5). If patients worried about stigmatization (OR = 2.3, 95% CI: 1.0–4.9) and were not in contact with their family

(OR = 2.9, 95%CI: 1.2–7.2), they had almost a three times higher risk of experiencing emotional disturbance than their counterparts. Patients who had a sore throat had a three times higher risk of emotional disturbance than patients without a sore throat (OR = 3.4, 95%CI:1.3–9.0). If the patient experienced muscle pain, their risk of reporting emotional disturbance was 6.4 times higher (95%CI: 1.8–23.0) than patients without muscle pain. Among the factors identified above, patients who reported sufficient medical management information were less likely to experience emotional disturbance (OR = 0.2, 95% CI: 0.1–0.8).

DISCUSSION

Centralized isolation is an effective strategy to limit the spread of COVID-19, but its psychological influences should be considered and properly managed (Chen et al. 2021; Ju et al. 2021). Our study findings show that COVID-19 patients commonly experience emotional disturbance in a hospital management isolation ward. Nearly six out of ten patients (57.7%) experienced emotional disturbance at some point.

CONCLUSION

Emotional disturbance commonly occurs among patients with COVID-19 who are isolated in a hospitalmanaged ward. Healthcare professionals should pay specific attention to male patients and to patients with a sore throat and/or muscle pain, while also providing the means of contacting family. Furthermore, it is important that patients receive sufficient medical information. Government officials should provide a clear rationale for isolation and recognize efforts to follow the policy in order to minimize social stigma.

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