



CORONAVIRUS DISEASE (COVID-19): PSYCHOLOGICAL, BEHAVIORAL, INTERPERSONAL EFFECTS AND CLINICAL IMPLICATIONS FOR HEALTH SYSTEMS

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ABSTRACT

The outbreak of Corona virus (COVID-19) in Wuhan, China, which began in December 2019, evolved to become a global pandemic. Also poses a serious threat to the psychological well-being of individuals and has resulted in significant behavioral changes. The severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) pandemic represents an extraordinary medical challenge that has already had massive economic and societal impacts. In contrast to the severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) corona virus outbreaks, every respiratory physician and intensivists are likely to encounter patients infected with SARS-CoV-2 and need a good understanding of the management of the associated disease, COVID-19. We are facing the first wave of the SARS-CoV-2 pandemic, but the infectivity of the virus and the lack of population immunity suggest future waves are possible. We aimed to describe the psychological, behavioral, interpersonal effect & clinical implications for health system.

KEYWORDS: COVID -19, Psychological behavioral, Interpersonal Effect, Clinical Implications.

INTRODUCTION

COVID-19 is the infectious disease caused by the most recently discovered corona virus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. COVID-19 is now a pandemic affecting many countries globally. The most common symptoms of COVID-19 are fever, dry cough, and tiredness. Other symptoms that are less common and may affect some patients include aches and pains, nasal congestion, headache, conjunctivitis, sore throat, diarrhea, loss of taste or smell or a rash on skin or discoloration of fingers or toes. These symptoms are usually mild and begin gradually. Some people become infected but only have very mild symptoms. People can catch COVID-19 from others who have the virus. The disease spreads primarily from person to person through small droplets from the nose or mouth, which are expelled when a person with COVID-19 coughs, sneezes, or speaks. These droplets are relatively heavy, do not travel far and quickly sink to the ground. People can catch COVID-19 if they breathe in these droplets from a person infected with the virus. This is why it is important to stay at least 1 meter) away from others. These droplets can land on objects and surfaces around the person such as tables, doorknobs and handrails. People can become infected by touching these objects or

surfaces, then touching their eyes, nose or mouth. This is why it is important to wash your hands regularly with soap and water or clean with alcohol-based hand rub.

Psychological impact of COVID – 19

The corona virus pandemic is an epidemiological and psychological crisis. The enormity of living in isolation, changes in our daily lives, job loss, financial hardship and grief over the death of loved ones has the potential to affect the mental health and well-being of many. Even in this time of physical distancing, it's critical to seek social support and connection with others. It's also important to know the signs of anxiety, panic attacks, depression and suicide so you can easily identify them, not just among your family, friends and neighbors, but for yourself. People all over the planet are losing their jobs because companies cannot afford to keep paying them amidst the corona virus crisis. They are losing their financial security, which results in experiencing high levels of stress in their daily life, which is now filled with uncertainty about our future. The experience of such fear and uncertainty on a global level can make us prone to all sorts of mental issues like mood problems, trouble sleeping, panic-like symptoms and many more. We do not know how long it will last, and in the process of it, we are losing our social networks, our relationship,

struggling to make sense of our identity without our usual daily interactions. We are forced to use technology not only as a means to escape but also as one of the few ways to stay connected with our friends and loved ones. All of these events are also making us feel less productive as a member of society, and the fact that it is all happening so fast is a big threat to our mental health.

The first section of our questionnaire which explored the psychological impact of the ongoing pandemic, underlined some interesting results, as outlined in Table 1. While two-thirds (64.3%) of our participants were apprehensive of leaving their homes because of the corona virus, comparatively more (83.8%) felt fearful if a family member went outside. A large fraction of our participants (88.8%) feared visiting crowded places such

as markets and departmental stores, and felt safer inside their homes (58%). Almost all of our participants (95.3%) unanimously agreed that the government should isolate the infected patients in separate hospitals while also expressing their (71%) under-confidence in the current infection control measures. It is concerning that the ongoing pandemic has made two-thirds (62.5%) of our participants feel anxious on a daily basis. A huge majority (82.8%) deemed fake news surfacing on the social media as a possible reason for the panic which ensued after the outbreak. While around three-fourths (71.5%) of the respondents realized the gravity of the situation, the remaining (28.5%) still believed the situation was not as bad as it was being portrayed.

Table 1 – Psychological impact of COVID -19.

STATEMENTS	YES	NO
I fear leaving my house because of COVID-19.	257(64.3%)	143(35.8%)
I fear visiting crowded places i.e. markets and departmental stores.	355(88.8%)	45(11.3%)
I fear for the safety of my health even when I'm at home.	168(42.0%)	232(58.0%)
I fear for the health of my family members.	378(94.5%)	22(5.5%)
I feel anxious when a family member goes outside the house.	335(83.8%)	65(16.3%)
I feel anxious on a daily basis because of COVID-19.	250(62.5%)	150(37.5%)
I feel that the government should isolate COVID-19 patients to specific hospitals.	381(95.3%)	19(4.8%)
I feel under-confident with the current infection control measures.	284(71%)	116(29.0%)
I feel fake news surfacing through social media regarding COVID-19 is causing panic.	331(82.8%)	69(17.3%)
I feel the situation is not as bad as it is being portrayed.	114(28.5%)	286(71.5%)

Behavioral impact of COVID -19

COVID-19 is the biggest global event—and challenge—of our lifetimes. As such, it is changing human attitudes and behaviors today and forcing organizations to respond. However, the need to respond won't end when the virus's immediate threat eventually recedes. Imagine it's September. Things are back to normal. We can meet face to face, Travel is possible, But things have changed. COVID-19 has forever changed the experience of being a customer, employee, citizen, human. Expect to see behavior change at scale for some time to come. What will have changed in the way we think? How will that affect the way we design, communicate, build and run the experiences that people need and want? The answers to these questions will lie in the way people react and how individuals, families and social groups—all sources of creative innovation—hack new ways to live. Our second section of the questionnaire dealt with the behavioral impact of COVID-19, as demonstrated in Table 2. Only a small fraction of our participants had pretended to be sick (14.8%) to avoid going to their workplace/educational institute or considered quitting or applying for a leave (24.8%) because of COVID-19. It is reassuring that more than three-fourths of our participants had incorporated changes in their behavior to ensure their safety. In addition, more than three-fourths participants had limited their physical contact with people (86.5%), avoided/reduced their visits to healthcare facilities (74.5%), had recently cancelled their plans such as family reunions, social gatherings, traveling or meetings (84.5%) and washed their hands

more frequently (87%). However, fewer participants had reduced/avoided going to prayer places (63.5%), carried a hand sanitizer with them (56.8%), or wore a mask (44.3%). Since watching/listening/reading the current news increased anxiety levels, around one-third (35%) of our participants had started to avoid it. Notably, half of our participants (54.5%) had purchased groceries out of fear of them running out.

Table 2- Behavioral impact of COVID -19.

STATEMENTS	YES	NO
I have thought of quitting or applying for leave at the workplace/educational institute because of COVID-19.	99 (24.8%)	301(75.2%)
I have pretended to be sick to avoid going to the workplace/educational institute	59(14.8%)	341(85.2%)
I have limited my physical contact with people.	346(86.5%)	54(13.5%)
I have recently avoided/ reduced using healthcare facilities.	298(74.5%)	102(25.5%)
I have recently avoided/ reduced going to prayer places.	254(63.5%)	146(36.5%)
I have recently started to avoid watching, reading or listening to news because it made me anxious.	140(35.0%)	260(65.0%)
I have recently cancelled my plans i.e. family reunions, social gatherings, travelling or meetings because of COVID-19.	338(84.5%)	62(15.5%)
I have recently purchased groceries out of fear of them running out.	218(54.5%)	182(45.5%)
I wash my hands more frequently.	348(87%)	52(13.0%)
I carry a hand sanitizer all the time.	227(56.8%)	173(43.3%)
I have started wearing a mask because of COVID-19.	177(44.3%)	223(55.8%)

Interpersonal impact of COVID -19

Females and males responded to a female confederate who behaved either nonassertive, assertively, or aggressively in role-played situations involving refusals and requests for behavior change. Responses to no assertion were pleasant but did not allow the no asserter to achieve immediate goals. Responses to aggression did allow the aggressor to achieve goals, but were unpleasant. Responses to assertion allowed for the achievement of immediate goals and were generally pleasant. However, responses to assertion did have more negative effects than expected. Refusals were easier to resist than behavior change requests. There were no consistent differences in the way females and males responded. The concept of aggression has always been a subject of study in the most varied field of research. Aggressive behaviors can consist in a defensive or reactive aggression, and a proactive or appetitive aggression. Aggression is something inherent in the human being, it can have a twofold density, that is, turn into socially acceptable conduct or generate violent behavior aimed at producing suffering in others. By focusing on the first aspect, as a life force, may be useful the Winnicottian reflection that affirmed when a child rebels against authority can be considered as aggressive, however in that way he manifests an impulse of necessary and precious independence to the growth process.

Clinical Implications for Health System

Healthcare, like any industry, faces a quandary of simultaneously needing both standardization and personalization. There are standards of care for a reason: they ensure that people get treatments shown to be safe and effective. Also, without a certain level of standardization, costs would be even more out of control and organizations wouldn't be very efficient. But personalization is increasingly possible, especially related to prevention and treatment. Innovations like genome sequencing allow doctors to know your personal health on a level of detail like never before, while technologies like activity monitors enable you to track your own health, fitness and nutrition metrics. These

advancements are exciting but not universally available, and they can only take us so far within a system that still isn't quite ready to handle personalization at scale. SARS-CoV-2 is a positive-sense, very long single-stranded RNA virus that shares a part of its genome sequence with SARS-CoV. Like SARS-CoV, it uses angiotensin-converting enzyme 2 (ACE-2) receptor (present in many compartments, including the hepatic-biliary tract) to enter the target cells. A preliminary study suggested that ACE-2 receptor is particularly present in cholangiocytes, but SARS-CoV-2 infection does not cause bile duct injury, and bile duct markers are not severely altered in infected patients. A liver biopsy from a patient with COVID-19 showed micro vesicular liver steadies, mild lobular and portal activity, a picture resembling drug-induced liver injury (DILI). Though some drugs used to treat COVID-19 patients are associated with DILI, the altered liver test findings were largely present already on admission, so the DILI hypothesis is weak. The mechanism of liver injury is still unclear, but the most likely one relates to the liver being affected by the immunological reaction and severe inflammation due to the viral infection. Patients with liver injury reveal higher inflammatory markers, such as C-protein reaction, procalcitonin and lymphopenia. They also have fever more frequently, and liver damage is more common in patients with severe pneumonia, which may be associated with an explosion of inflammatory cytokines.

The incidence of elevated alanine aminotransferase and aspartate aminotransferase transaminases associated with mild cholestasis in COVID-19 patients ranges from 14 to 53%, peaking within the first two weeks after admission. Whether patients with prior liver disease are more prone to SARS-CoV-2 infection is not yet clear. Patients with liver cirrhosis might be more susceptible to this infection because of their systemic immunocompromised status. According to a recent meta-analysis, the overall prevalence of chronic liver disease among patients with COVID-19 disease was 3%, and the main causes of chronic liver disease were hepatitis B virus (HBV) or hepatitis C virus (HCV) infections. The impact of SARS-

CoV-2 infection on patients with pre-existing liver conditions, such as chronic viral hepatitis, is even trickier to establish. In patients with chronic liver disease, the addition of a further cause of liver injury—be it virus-directed or immune-mediated—might be expected to impair liver function, especially in the case of advanced liver disease. For instance, experience gained from SARS-CoV in 2003 showed that concomitant infection with HBV could lead to severe hepatitis. But if the liver damage induced by COVID-19 is immunologically driven, as mentioned earlier, then the immunocompromised status of cirrhotic patients or cancer patients might be more protective than harmful. In a large cohort study on COVID-19 cases in China, 21 individuals (2.1%) had pre-existing HBV, but no data were provided on this specific group's outcome. Extracting data from seven studies, outcomes were not worse in 42 patients with chronic liver disease and COVID-19, as the mortality rate was 0–2%. A single case of acute chronic liver failure secondary to SARS-CoV-2 infection in a decompensated alcoholic cirrhotic patient was recently reported. The patient responded to empirical antibiotic therapy and supportive care, completely recovering to his prior liver status. Another important point to consider is that some drugs used against COVID-19 are biological agents (e.g. tocilizumab, baricitinib) that might reactivate HBV infection in inactive HBV carriers, or patients with occult HBV, thus causing liver function impairment. Strict monitoring of liver and virological tests are, therefore, warranted and antiviral prophylaxis could be indicated in particular clinical settings. Drug-to-drug interactions should be checked before starting COVID-19 treatments, especially in patients with advanced liver disease taking many types of medication, including antiviral agents. A useful tool is available for this purpose: www.covid19-druginteractions.org. In patients with liver injury infected with SARS-CoV-2, hepatotoxic drugs should be used with caution, and liver function should be closely monitored to prevent it from deteriorating. Overall, the reported data are not yet enough for us to know the risk of infection in patients with existing chronic liver disease, or the impact of COVID-19 on their liver status and outcomes. Meanwhile, according to EASL-ESCMID position paper, adequate care should be assured—especially for patients with decompensated liver disease—using telemedicine if possible. A Chinese study showed that the risk of SARS-CoV-2 infection and its potential complications in this population can be reduced by applying a simple approach, based on preventive messages and precautions sent to outpatients via We Chat, or adopted for decompensated cirrhotic inpatients.

Patients with liver cancer are another special population often coming to the hospital for treatment and monitoring, who may be at higher risk of contracting COVID-19, especially if they are receiving chemotherapy or immunotherapy. The SARS-CoV-2 infection rate in cancer patients treated at a tertiary institution in Wuhan was 0.79% (12 of 1524 patients),

higher than the reported cumulative incidence in the community during the same period. Less than half of these infected patients were being actively treated for their cancer. Even with such small numbers, older patients and those with non-small cell lung carcinoma showed a higher risk of contracting COVID-19. Cancer patients generally had worse outcomes than other patients, with a mortality rate in the range of 5–20%, liver cancer being under-represented in the current literature.

CONCLUSION

This study highlighted the increased anxiety levels that an individual experienced on a regular basis regarding their health, the health of their peers, certain avoidance behaviors as a result of the disease, and behavioral changes of the concerned population. Besides calling attention to this worrisome situation, we also tried to list possible solutions to avert any future distress that may ensue as a result. The current COVID-19 pandemic is causing widespread concern, depression and anxiety among the people all over the world. The mental problems caused by COVID-19 lockdown impacted the psychological wellbeing of individuals from the entire community including students, casual labors, healthcare professionals and the general population. The elders, females, students, people living in stress condition, healthcare professionals at front-line, and those who are with underlying chronic conditions are at a higher risk. The respondents under study were following precautionary measures to avoid COVID-19 as per WHO and state guidelines on pandemic that is physical distancing and staying home as the only feasible therapy to. Hopefully, our study will help the concerned authorities to take measures in order to alleviate the psychological, behavioral, interpersonal & clinical implications for health systems of COVID-19.

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