

Caring for COVID-19 Patients: Nurses' Mental and Emotional Impact and Management

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Abstract

The purpose of this qualitative study is to examine frontline healthcare nursing personnel's lived experiences of caring for patients with COVID-19 in greater New York City metropolitan area hospitals during the novel coronavirus pandemic, focusing on the perceptions and management of their emotional and mental well-being. Interpretive phenomenological analysis was the approach chosen to explore the experiences of eight registered nurses and nurse practitioners through in-depth interviewing.

The study found the following themes:

1. Caring for COVID-19 patients primarily resulted in feelings of (a.) fear and anxiety (b.) anger and frustration and (c.) sadness, depression, and grief.
2. Social support and mental health professionals were common strategies in managing most nursing personnel's emotional and mental well-being. Since research is limited regarding U.S. healthcare workers' emotional and mental impact while caring for COVID-19 patients, further research is warranted.

INTRODUCTION

In December 2019, multiple severe pneumonia cases of unknown cause were reported in Wuhan, Hubei province, China (Lauer et al., 2020). The cases were identified as caused by a novel human coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which caused coronavirus disease 2019 (COVID-19; Lauer et al., 2020). On March 11, 2020, World Health Organization (WHO) announced that the cases of COVID-19 outside China had increased 13-fold and the number of affected countries had tripled; at that time, there were over 118,000 cases in 114 countries and 4,291 deaths due to COVID-19. The WHO announcement also served to declare this situation a pandemic (WHO, 2020).

The virus is believed to have arrived in the United States in January 2020 (Sommer et al., 2020). Due to the high transmission rate of the disease, COVID-19 and its ability to cause severe respiratory decline, U.S. intensivists were concerned that hospitals across the country would become overwhelmed and increase the usage of critical care resources (Sommer et al., 2020). Another concern was the

possibility of deaths due to COVID-19. In February 17, 2020, WHO reported that the disease resulted in more deaths (1871) than severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) combined (1632; Mahase, 2020). The greater New York metropolitan area indeed experienced the dire consequences predicted by intensivists. In New York City alone, there were at least 223,078 COVID-19 cases, with 22,739 deaths as of July 10, 2020 (NYT, 2020).

Historically, pandemics have been known to cause a multitude of impacts, including economic and behavioral changes (Madhav, 2018). The novel coronavirus (SARS-CoV-2) pandemic has profoundly impacted individuals' lives throughout the globe on various levels. Impacts are expected to be both short and long term (McKibbin & Fernando, 2020). One such impact involves individual overall health. Literature focused on the outbreak of SARS over a decade ago suggested that healthcare workers are not only at risk of contracting the disease but also at higher risk of developing anxiety, depression, stress during these types of outbreaks (Wu et al., 2005). The SARS and MERS

outbreaks did not considerably impact the United States as COVID-19 did. Furthermore, the impacts on well-being during pandemics are often neglected and underestimated since focus often tends to be on prevention, containment, and treatment of the disease (Ornell et al., 2020). Pfefferbaum and North (2020) posit that during the COVID-19 pandemic, healthcare professionals are particularly vulnerable to emotional distress. Therefore, it is beneficial to study the emotional and mental impacts of U.S. healthcare professionals who cared for patients with COVID-19 in the hardest hit areas of the country to determine their perceptions and management of emotional and mental well-being.

AIMS OF THE PRESENT STUDY

The purpose of this interpretive phenomenological analysis (IPA) study is to examine frontline healthcare nursing personnel's lived experiences of caring for patients with COVID-19 in greater New York City metropolitan area hospitals during the novel coronavirus pandemic, focusing on the perceptions and management of their emotional and mental well-being. The central research question that guided this study, which is part of a larger investigation, is: How do nursing personnel who care for patients with COVID-19 in the greater New York City metropolitan area during the pandemic, perceive and manage the impacts on their emotional and mental well-being?

METHOD

The approach chosen for this qualitative inquiry was IPA, since the purpose was to examine how participants made sense of a major life experience, with a focus on in-depth participant description and interpretation of this experience (Smith et al., 2013). For this study, the shared experience involved caring for COVID-19 patients in the hospital setting in the greater New York metropolitan area. IPA served as an effective tool for gathering data as it permits the researcher to gain a thick, rich description of each participant's unique experience by requesting them detail the events. The researcher then completes an examination and analysis of each experience, eventually exploring convergence and divergence among the collective experiences (Smith et al., 2013).

Participant Recruitment and Selection

Sample size in IPA is relatively small by design. The focus lies on a small number of participant experiences, with quality taking precedence over quantity (Smith et al., 2013).

Though there is "no right answer" regarding sample size, Smith et al. recommend three to six for student projects (p. 51). Since I have conducted IPAs in the past and was committed to the work involved in conducting a larger study, I sought a sample size of up to 15, which aligns with other published IPA studies that involved "samples of one, four, nine, fifteen and more" (Smith & Osborn, 2008, p. 56). The purposive participant selection criteria were: (a.) Frontline hospital nursing personnel who have experienced impacts on their emotional and/or mental well-being while caring for COVID-19 patients; (b.) Individuals who cared for COVID-19 positive patients in US hospitals, located in the greater New York City metropolitan area; (c.) Individuals who have had close contact with COVID-19 patients during their hospital work shifts in the greater New York City metropolitan area.

Upon receiving IRB approval, 171 potential participants were contacted via a professional networking Internet source, explaining the study and seeking participation. These potential participants worked at hospitals in the greater New York metropolitan area that was deemed a U.S. COVID-19 hot spot, an area of high concentration of positive COVID-19 cases. There are 66 hospitals in New York City alone, which includes the Bronx, Brooklyn, Manhattan, Queens and Staten Island (NYS Health Profiles, n.d.). This number of hospitals is more than some U.S. states have in their entire state. The study's delimitations were more outreaching, however, as New York Metro – Long Island hospitals were also included in the search for potential participants, which has 29 hospitals (NYS Health Profiles, n.d.). Recruitment stretched to northern New Jersey hospital workers since this area is part of the New York metropolitan area and in March 2020, regarded as the "heart of the outbreak in the United States" (Warren, 2020, para. 1). Potential participants' occupations ranged from physicians, resident physicians, physician assistants, nurse practitioners (NPs), nurses, respiratory technologists, and radiologic technologists. Of those, 24 responded with interest to participate and then received a consent form and a greater explanation of the study. The 24 consisted of nurses, NPs, respiratory therapists, and resident physicians. Another of the 171, a radiologic technologist, responded affirming eligibility but declining participation, stating inability to rehash the experience, as it might be too stressful at this time. Eight individuals from eight different hospitals agreed to participate and consented to be interviewed (see Appendix A). All were either nurses or NPs, which led to changing the research question from a focus on health care professionals

to nursing personnel. Since qualitative research involves an iterative approach that is evolutionary in nature, this change was both acceptable and warranted (Agee, 2009). Included in the consent was the assurance of the right to decline to answer any question or to end the interview at any time. They were also given a helpline number to call if they felt distress following the interviews, with the advice of alternatively calling a preferred health provider.

Data Collection

In-depth, semi-structured interviews were conducted on eight participants via Zoom, FaceTime, or telephone. The individuals were reminded of their rights as participants at this time. Seven participants were also retold that the interview would be audio recorded. The remaining participant had consented to the study with the agreement that there would be no audio recording of the interview.

Though bracketing is a requirement in descriptive phenomenology approaches, IPA also involves some bracketing of the researcher's foreknowledge at certain times during the study (Smith et al., 2013). Bracketing took place during data collection so the participant experience remained the sole focus. The first round of interviews took place between May 22 and June 11, 2020, ranging in length from 37 minutes, 11 seconds to 94 minutes, 34 seconds, with an average time of approximately 70 minutes, 43 seconds. Seven participants also took part in a second interview, which occurred between June 22 and July 3, 2020. The purpose of the second interview was to clarify, further explore, and interpret experiences shared from interview one. The second interviews averaged nearly 36 minutes in length. To ensure data accuracy and credibility, member checking was accomplished. All participants were asked to review their information and narrative account in order to confirm its credibility (Creswell & Miller, 2000). An audit trail documented the study's progression through keeping a research log. Memoing involved writing reflectively throughout the study and note taking during and after the interviews. Interviews were transcribed and uploaded to Dedoose, a qualitative analysis tool.

Data Analysis

Per recommendations from Smith et al. (2013), each transcript was read multiple times; the audio recording was also listened to, when applicable. Each participant's data were coded before moving on to the next participant's data in order to retain the idiographic intent of the method before

seeking nomothetic commonalities. Initial coding of the interviews resulted in recognition of the significant impact on emotional and mental health. After this first stage of coding, a search for cross-case and cross-code patterns was accomplished. This second level of coding resulted in the emergence of the following categories, listed in order of prevalence: Emotional/Mental, Preparedness, Physical, Support, Change, and Social. The final step of data analysis involved seeking commonalities across categories, leading to recurrent themes that collectively answered this study's central research question. These themes served as the results of this study.

RESULTS

With respect to the central research question, two major themes emerged:

1. Caring for COVID-19 patients primarily resulted in feelings of (a.) fear and anxiety (b.) anger and frustration and (c.) sadness, depression, and grief.
2. Social support and mental health professionals were common strategies in managing most nursing personnel's emotional and mental well-being.

Theme One

Participants' greatest impact when caring for the patients involved emotional and mental strain. Caring for COVID-19 patients primarily resulted in feelings of fear and anxiety, anger and frustration, and sadness, depression, and grief. The following paragraphs explicate the participant experiences regarding these impacts.

Fear and Anxiety

The primary emotion expressed was fear. Marie explained that she had "a lot of fear and anxiety that I was going to catch COVID," explaining that "80 percent" of her coworkers contracted COVID-19. Nearly all participants echoed this fear of contracting the disease, which Sarah referred to as resulting in feeling "in shock" at times. She would ask herself, "Is this the day I get it...if I did get it, would I have to be intubated?" The fear of infecting loved ones was also prevalent. Rose voiced her concerns, "I was afraid...I have a family to come back to." Working in the hospital caused other fears. As Tess feared: "What will happen to our unit? Will I get deployed? Anxiety swelled and we desired for someone to give us all the answers right away." Tess was not alone in her fears of deployment, as other participants worried about their perceived fitness to

care for such acutely ill patients and the lack of knowledge about the novel disease. The volume of patients to care for exacerbated their anxiety.

Several participants, including Simon, Sarah, Gloria, and Courtney experienced sleep disturbances. Frequently, Courtney would get out of bed and log on to the medical record through her work phone to make sure she did something for a patient or if she couldn't get a particular patient out of her head, she would get up and log on to see what was happening to them, if they were still alive, or if their condition worsened. Sarah's account was strikingly similar. She shared that she experienced "vivid dreams, back and forth, back and forth" where she worried "whether we're doing the right thing, whether we were doing right by the patients. Kind of like my duty to the patients. Was it enough that we were doing for them?" Sarah connected these dreams to being "scared." Simon, when describing comparable nightmares about patients where there was "just nothing to save the patient, not be able to be there for them," attributed the dreams to despair and helplessness, the latter a common term voiced by various participant interviews. Simon's nightmares were atypical for him as he expounded, "the dream doesn't end when I wake up...usually you wake up and it's gone." Esther relayed "anxiety dreams" about passing medications and not completing the morning administrations until late in the day: "Oh my God, I didn't even give my 10 o'clock meds till 4:00 in the evening." Cindy and Gloria also described sleep disturbances due to anxiety; with Gloria stating that she "was up for days" in the early weeks of caring for the patients. Simon also had long stretches without sleep, revealing that he has not slept a full night "since COVID" and that he would toss and turn for hours and "was sort of delirious from lack of sleep."

Nurses relayed a fear of causing nosocomial infections by "tracking COVID from room to room." Other fears involved changes that were nearly constant, personal protective equipment (PPE) availability, and PPE degree of protection from what Tess called "the enemy," SARS-CoV-2. Some participants' fears led to more overt signs and symptoms. Gloria acknowledged that she suffered from panic attacks. She explained that she feared contracting COVID now and only felt safe when at work "in a controlled environment" where cleanings were frequent and she was protected with full PPE gear. She shared that she experienced "PTSD, which I recognize now because I'm having panic attacks just out in the grocery store...I can't go to the beach, I can't go out." Cindy expounded on her experiences, saying, "My

anxiety was pretty high. A lot of my colleagues had anxiety." She went on to describe "many" experiences of chest tightness during the weeks she cared for COVID-19 patients. This made her even more anxious, she relayed, "because chest tightness is a symptom of COVID." She continued, "I told myself it was probably anxiety, 95% sure it's anxiety. No other symptoms, just feeling chest tightness and just stress." Cindy also revealed that her coworkers also "were complaining of feeling a lot of tension in their chest. And just fear."

Anger and Frustration

Though fear and anxiety were most prevalent in the data, deficiencies in PPE and frequent changes in policies caused participants much anger and frustration. This anger was directed to many sources. First, the federal government was often thought of as unsupportive. Gloria stated, "I'm really angry with our government because I feel that we all saw it happening somewhere else." She was angry and frustrated about the U.S. unpreparedness. She was also "angry with everybody that says that this isn't real. Because so many people just are more concerned about the economy and business and things like that, and it's not real because it's not affecting them." She was frustrated with her current life, saying:

It changed all of us. None of us are going to be the same after this. And like [a fellow nurse] and I joke...they could provide us with free mental health care for the rest of our lives because the things that a lot of us are going through, it's not normal. You know, it's not a normal thing. We are being sent in to do these things without proper protection.

Four additional participants expressed anger, frustration, or mistrust in the federal government due to its response to the pandemic and the PPE shortages in the greater New York Metropolitan area. Five also showed appreciation for those who "that are sticking their necks out for us," with four specifically naming the New York governor as supportive. Only Simon voiced frustration with the governor, comparing him and the mayor of New York City to "two kids at kindergarten" who fight over a toy.

Hospital administrators were also the perceived focus of anger over PPE and other issues by some participants. Initially, some nursing personnel were told not to wear

masks unless they had not received the flu vaccine. Sarah, Cindy, and Marie explained that managers reprimanded nursing personnel for wearing masks early on, unless they did not receive the flu vaccine. Marie is unable to receive the flu vaccine for medical reasons and believed “it was the only thing that saved me [from contracting COVID-19]”. Still, Marie felt that her hospital should have tested employees earlier, saying that “it actually led to someone dying so its only now accessible for us to get tested and I didn’t understand that because we were in the frontlines.” The Centers for Disease Control guidelines kept changing, which resulted in hospital administrators’ changes in policy. Cindy believed that “those people who were forced not to wear a mask got sick and started calling out of work.” However, Cindy “felt livid, especially because there was no testing” and that PPE was unavailable to hospital employees. A nurse acquaintance from another state sent her “hair caps because that was also not available to us. The hospital took all those away.” Cindy felt that the hospital was “actually standing in the way of our health.” She and other participants acquired some PPE from outside sources and gave them away to coworkers. Gloria was angered and frustrated by what seemed hypocritical in hospital policies. She recalled that she was warned of cross contamination while eating and drinking, yet “meanwhile we are wearing the same freaking mask, the same PPE, the same everything for 12 and a half hours straight.”

Masks, gowns, goggles/face shields, hairnets, shoe coverings, germicidal wipes, and body bags were all mentioned as items in short supply. Some nurses wore dietary aprons or no gowns at all at some stages. One participant brought in her shower cap to wear as a hair covering; another explained that an infected patient coughed on her uncovered head. Two participants revealed that bodies were placed in garbage bags when supplies ran out. One shared that she “begged” hospital officials for a body bag after first scouring five different floors in search of one. Rose expressed frustration that hospital officials who were making decisions were unaware of “what’s happening on the floor, or they understand, but then their hands are tied up because upper management is controlling the PPE.” Yet, she said administrators told employees that they had supplies but they did not get them and wondered where they were.

Though many participants expressed anger and frustration towards hospital administration, some others, such as Courtney, felt that hospital leaders “did the best job they could with what [they] had.” Still others admitted to

displaced aggression, where anger was misdirected. Marie spoke of becoming more impatient and angry with family and coworkers. Gloria recalled a conversation she had with her significant other, explaining that her anger over her new “reality” was “misdirected” toward him.

Sadness, Depression, and Grief

The reality the nursing personnel faced also led to feeling of sadness, depression, and grief. Despite results showing that the participants felt a strong call of duty in caring for patients and returning them to health; all were seeing death at greater rates than they ever witnessed previously in their roles. Courtney expressed that this was mentally overwhelming. She explained, that she felt “helpless because I felt like I was doing everything that I could possibly do for these patients. And in many cases, it wasn’t really making a difference on the outcome.” As aforementioned, Simon also felt helpless watching deaths occur at such a rapid pace, as did Tess and Rose. Many disclosed that this led to profound sadness and grief. Gloria admitted she “went through all the stages of grief.” Rose divulged, “These are not pretty deaths... mercifully sometimes they would go unconscious and we would just cry. Find a space and cry and then wash your hands, wipe your tears and go back to the next person.” Tess shared that she often cried at home when first treating COVID-19 patients: “During the first week or two, I would just cry. I would go into the shower and cry.”

Participants frequently experienced sadness because COVID-19 patients were alone so much while hospitalized, and often died alone. Gloria stressed, “We are the only human contact that these people have now.” Nurse and NP participants acknowledged that nurses spent the most time in contact with the patients compared to other hospital employees, going into the patient rooms every hour compared to one hour per shift for an NP, according to Cindy. Still, they limited their time in patients’ rooms to reduce the chance of infection and the staffing could not afford it, particularly prior to getting travel nurses in the hospitals. Rose explained, “We didn’t have enough staff, and [coworkers] were falling sick left and right.” This weighed heavily on participants as they expressed the desire to be able to spend more time with each patient. Nearly every inpatient unit in the participants’ hospitals was turned into COVID-19 units. Gloria was deployed to a COVID-19 unit from a hospital setting that did not involve longer-term care. She purposely chose to work in an area where she did not get to know the patients. This changed with her deployment, since she was now performing bedside care on the same

patient for a long period of time. This resulted in her getting “attached to some of the patients” and suffering overwhelming grief upon their deaths. Other participants shared this feeling of profound grief.

Six of the eight participants admitted they were suffering from depression, with most sleeping more than usual, even though some had slept less in the early stages of pandemic care. Lack of motivation and changes in eating habits were common. Many came home from work and slept; three admitted to being more quiet and withdrawn from family when coming home. The majority of participants felt a sense of aloneness, even by those who were able to come home to family members. Participants' typical home routines of exercising, cooking, or other activities were noted to have lessened. These self-observations often continued even when interviewed a second time weeks later.

Theme Two

The data revealed that social support and mental health professionals were common strategies in managing nursing personnel's emotional and mental well-being while caring for COVID-19 patients. It was evident from the interviews that participants felt that communicating with others who had shared the same experiences was most effective. Courtney admitted, “talking with my colleagues mostly because they understood...my boyfriend as well, and my parents, to some degree. But I think my colleagues who shared similar experiences, talking with them help the most.” Sarah echoed this sentiment as she recalled a difficult period:

I had a big breakdown where I was crying,
that I would have to really talk to somebody.
Not that I'm sad, but I had to talk to
somebody, who would understand me. My
husband understands me, he listens to me, but
he's not in the field. He might not grasp
everything. I really needed to talk to
[colleagues in healthcare], and I'm like,
"Okay, somebody needs to call me. I need to
call somebody."

Rose relayed that not all colleagues would engage in conversation, however. She shared, “when you try and talk about it, nobody wants to talk about it because it's too many emotions that you don't want to.... Most people they're putting a really tight lid on just to get through day to day.”

Career websites were also a social support system for many. Two participants periodically posted their work experiences on these sites, one through video messaging and another by writing, which she deemed therapeutic. Others used the sites to share updates in knowledge of the novel disease, safety tips, and PPE supply information. Colleague support throughout the ordeal was prevalent and greatly appreciated.

Over half the participants relied on mental health professionals to manage the negative impacts of caring during the pandemic. Simon phoned a crisis hotline one night when he felt particularly depressed. He stated that he went through a “pretty dark depression” previously in his life and understood that “anybody with a history has a higher likelihood of going down that side again.” Simon was the sole participant who left his job due to the emotional toll of caring for COVID-19 patients. One participant seeing a psychiatrist mentioned a personal history of “major depressive disorder.” Two others both expressed that they were “lucky” that they had been in therapy prior to the pandemic and were able to feel supported throughout the crisis. One of those needed to also arrange an appointment with a psychiatrist since she was not sleeping and was able to after medication. The other had to increase her virtual sessions to two per week when “it was really, really bad” but she's since returned to weekly sessions. A few additional participants attended virtual sessions that their employer offered, one specifically mentioning 15-minute counseling sessions where she opened up about all she saw. She said, “it was hard to relive it, but it was like one of those wounds that you need to debride and take off all the junk so that it can heal.” Two participants relied on their faith to help manage the emotional and mental strain.

Table 1

Participant Table

Participant Pseudonym	Gender	Age	Role
Cindy	Female	30-39	RN
Courtney	Female	30-39	NP
Gloria	Female	40-49	RN
Marie	Female	40-49	NP
Rose	Female	50-59	NP
Sarah	Female	40-49	RN
Simon	Male	40-49	RN
Tess	Female	30-39	NP

DISCUSSION

The participants' fear of contracting COVID-19 or passing it to family members aligned with a UK survey of approximately 2600 nurses and midwives, where it was a concern of 74% and 92% of respondents, respectively ("Survey," 2020). However, in the current study, three of the eight participants expressed more fear over infecting family than themselves; five of the eight worried about personally contracting it. These fears were exacerbated by PPE insufficiencies and the lack of understanding of this novel disease. PPE and proper bed space shortages also led to fears of spreading the disease to other patients. Anxiety of deployment stemmed not only from fear of contracting the disease but also from lack of confidence in nursing personnel's abilities to care for COVID-19 patients. Though, in many cases, education was prevalent throughout the crisis, participants were learning "on the fly;" this and patient volume caused fears that patient care would suffer.

Stress and anxiety have been mentioned as dominant nurse experiences during previous pandemics, according to Fernandez et al.'s (2020) systematic review of 13 qualitative studies. This was the true for the eight participants as well. However, the current study found that anger and frustration to be nearly as prevalent as fear and anxiety. These impacts were unmentioned in the Fernandez et al. review, despite the

review noting a lack of preparedness on management and health department levels. Rajkumar (2020) mentions anxiety, depression, and stress as common psychological reactions to the COVID-19 pandemic but also does not include anger and frustration. Most of the participants' anger and frustration resulted from perceived lack of preparedness from hospital administrators and federal officials. The latter intensified due to the 2018 U.S. disbanding of the global health security team as a result of reorganization that led to claims of inability to respond to a global crisis (Sun, 2018).

Rajkumar (2020) mentions sleep disturbances due to anxiety, which this study echoes. Yet, the increase in sleep due to possible depression was also evident in the current study. The common lack of motivation, often continuing even during the second interview stage, may also indicate a depressive state. Second interviews took place when participants' units resumed to a more normal state, with some touting COVID-free units. Despite this, the majority of participants expressed lingering effects indicating prolonged anxiety and/or depression.

Another variation from the literature resulting from the study involved Simon's departure from the hospital during the pandemic. He was the only participant to quit his job (though Sarah stopped per diem work at her second job during the pandemic but continued her full-time role). Fernandez et al. (2020) concluded that females were less likely than male health care workers to accept the occupational risks during pandemics. The current study contradicts this former finding, as the sole male participant viewed the occupational risk as too high to continue in the role.

IMPLICATIONS

Lack of pandemic preparedness resulted in multiple emotional and mental impacts on nursing personnel. It is advised that each hospital's administration plans for crises such as this pandemic in the future. Federal officials, too, need to adequately prepare for global health crises. Advanced preparation is essential, particularly regarding equipment, staffing, and knowledge sharing processes and procedures. Hospital administrators need to recognize the potential for long-term impacts on healthcare workers. Providing mental health screening tools, counseling, and relaxation techniques would benefit employees. Communicating support on all levels may lead to improved outcomes.

POTENTIAL LIMITATIONS AND FUTURE RESEARCH

Limitations of the study include the obtaining of nursing personnel only in the study. While other healthcare professionals were invited to take part in the study, only NPs and nurses consented. Thus, a study involving other healthcare professionals would be warranted. Furthermore, the participant pool consisted of only one male nurse. A more balanced male to female study would allow better gender comparison. Additionally, only one U.S. COVID-19 hotspot was represented. Since there is a wide gap in the literature regarding pandemic research in general, and more specifically, COVID-19's impact on healthcare workers, further studies are needed representing all areas of the United States. Finally, this study involved two interviews of seven of eight participants that took place up to four weeks apart. A longitudinal study of a greater number of healthcare workers is justified to determine the long-term impacts.

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