PROVIDING CARE DURING THE COVID-19 PANDEMIC: A CASE STUDY OF NORTH CAROLINA NURSES' EXPERIENCES WITH COVID-19 POSITIVE PATIENT CARE

by

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ABSTRACT

ABIGAIL LEE. Providing Care During The COVID-19 Pandemic: A Case Study Of North Carolina Nurses' Experiences With COVID-19 Positive Patient Care. (Under the direction of DR. ANDREA FREIDUS)

This is a case study of nurses' perceptions providing care in North Carolina during the COVID-19 pandemic. Nurses participated in semi-structured interviews via Zoom about the impact of the pandemic on their working and personal lives. Drawing from affect theory, I examine the various factors that influenced nurses' mental health and subsequent coping mechanisms. Nurses displayed a variety of emotions, and, importantly, they also discuss how their friends, family, patients, and colleagues feel. I argue that discussions of others' feelings are a tool for nurses to introduce and cope with their own feelings towards the pandemic. Ultimately, I use these data to provide programming recommendations to better support Health Care Workers. As the situation is ongoing, additional research and recommendations will be needed.

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HCW	Health Care Worker
WHO	World Health Organization
CDC	Centers for Disease Control

Introduction

Rapid qualitative assessments during complex health emergencies are essential to learning how communities and individuals cope during these stressful events. A rapid qualitative assessment is well suited to the COVID-19 pandemic as the pandemic is an ongoing situation requiring time-sensitive data to effectively guide policy and programming. This line of inquiry is important as healthcare provider burnout has been well-documented, especially during health emergencies (Koh et al., 2011). The COVID-19 pandemic is an unprecedented experience, and it is imperative to gain more knowledge about the feelings and experiences of frontline health workers charged with caring for COVID-19 patients.

This project is a case study focused on the mental health and emotional experiences of nurses providing direct care to COVID-19 patients in North Carolina. I used semistructured qualitative interviews to learn more about what has worked well, what they are concerned about, and how their experiences have impacted their emotional and mental wellbeing. I put special emphasis on healthcare workers' (HCWs) emotional responses and mental health challenges. Using the lens of affect theory, I analyze the interview data to try and capture how emotional responses to the COVID-19 pandemic are similar and different to past epidemics and pandemics.

Focusing on emotions and affect was important to me because I feel very aware of my own emotionality as well as the emotions of those around me during the pandemic, in general, but also during the course of this research. I have always found it difficult to label the emotions that I am feeling, and because of this I feel hyperaware of what others are feeling. I am constantly asking those around me questions to try and understand how they feel, why they feel that way, and why they express emotions in certain ways.

The COVID-19 pandemic brought out an array of emotions and there seemed to be a contrast between people being hyper aware and fearful of interacting with others, versus those who do not believe in the disease. This contrast has only been exacerbated by the development of the COVID-19 vaccines and the rise of new variants of the virus (CDC, 2021d; CDC, 2021e). Therefore, a study on emotions and feelings about the COVID-19 pandemic would add to, and further develop, an already existing corpus of research on emotions surrounding complex health emergencies.

Past research has focused on how HCWs feel during epidemics and pandemics, and rapid qualitative studies have been useful in developing on the ground responses and recommendations. Ebola, MERS, SARS and N1H1 all demonstrated that epidemics and pandemics add to the emotional burdens of HCWs, specifically heightening fear, and anxiety (Khasne et. al., 2020; Khalid et al., 2016). The Ebola epidemic demonstrated HCWs feel additional emotional burdens because they are not allowed to physically interact with patients and others in the community (McMahon, 2016). Furthermore, HCW burnout is also common during complex health emergencies and is already being seen during the COVID-19 pandemic (Koh et al., 2011; Khasne et. al., 2020).

COVID-19 has been a shared global experience, but differences in responses and availability of supplies and staff have led to varying impacts. North Carolina already faces a nursing shortage, and the mental and emotional stress of the novel coronavirus has exacerbated these issues (Brown & Rao, 2020). These additional burdens have left hospitals and clinics understaffed and patients underserved (Brown & Rao, 2020). Below the data I collected, from in-depth, open-ended interviews with six nurses in North Carolina who worked on COVID-19 designated halls, will demonstrate that, during the interviews, the nurses explained they feel fear

and anxiety. Importantly, they also discuss how their friends, family, patients, and colleagues feel. I argue that discussions of others' feelings are a tool for nurses to introduce and cope with their own feelings towards the pandemic. These data are useful in informing policy and programming that need to address the mental health needs of nurses in the hopes of keeping them in their profession. Ultimately, using the information gathered from the interviewees, I provide recommendations for how medical institutions and the public can better support HCWs.

Literature Review

COVID-19

COVID-19 is a new strain of a coronavirus that has infected millions and killed hundreds of thousands (Taylor, 2020). Corona viruses are common illnesses that usually affect the upper respiratory tract and are similar to the common cold (CNN, 2020). COVID-19 is a new type of corona virus, whose "symptoms include cough, fever or chills, shortness of breath or difficulty breathing, muscle or body aches, sore throat, new loss of taste or smell, diarrhea, headache, new fatigue, nausea or vomiting and congestion or runny nose. COVID-19 can be severe, and some cases have caused death" (Sauer, 2021).

The coronavirus pandemic is an ongoing global health crisis that began in December 2019 (Taylor, 2020). The first reported cases of the virus were in Wuhan, China. The virus progressed rapidly and as of August 6, 2020, there were cases in more than 177 countries (Taylor, 2020). On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic (WHO, 2020).

COVID-19 in the United States

COVID-19 has heavily impacted the healthcare industry, more specifically hospitals. The WHO listed COVID-19 as a global health emergency; subsequently, the United States, and other countries throughout the world, issued national emergencies at the start of the pandemic (Taylor, 2020). In the United States, the Centers for Disease Control (CDC) issued COVID-19 guidelines to try and slow the spread of the virus (Taylor, 2020). These guidelines included limiting numbers of people at gatherings and eventually recommendations for people to wear masks around others (Taylor, 2020). The guidelines and emergency orders were issued because of concerns that hospitals would become overwhelmed with COVID-19 patients (Taylor, 2020).

Countries with leaders that enforced infection control strategies were able to quell their outbreaks and not overrun their medical systems - examples include New Zealand, Taiwan, South Korea, and Hong Kong (Leffler et, al., 2020).

Data have shown that the lack of leadership around COVID-19 precautions including mask wearing and social distancing has exacerbated the pandemic in the U.S (Leffler et, al., 2020). Even though a state of emergency was issued, former President Trump campaigned against state-mandated regulations that were attempts to decrease case numbers (Taylor, 2020). On March 23, 2020, the United States had the highest number of cases in the world with 1,000 cases (Taylor, 2020). Additionally, former President Trump removed the U.S from the WHO even after the confirmation of 2 million cases in the United States (CNN, 2020; Taylor, 2020).

There have been 40,703,234 total cases of COVID-19 in the United States as of September 10, 2021 (CDC, 2021c). In some extreme cases, this has led to the rationing of care and resources to patients (King, 2021). In Los Angeles, California officials have told HCWs to only provide care and supplemental oxygen to patients that they feel will survive (King, 2021). Rationing of care adds to HCWs emotional burdens (King, 2021). Furthermore, rationing of care becomes even more worrisome for HCWs as their chance of infection increases. As of September 10, 2021, 177, 900,000 people have been fully vaccinated against COVID-19 in the United States, and the chance of HCW infection has been slightly mitigated with the development of the COVID-19 vaccine (CDC, 2021b).

The impact of COVID-19 on healthcare was not heavily reported on during the initial stages of the outbreak, but more has been tracked as the pandemic has progressed. By May 5, 2020, data has shown that HCWs' chance of testing positive is almost 12 times higher than the general population (Marquedant, 2020). As of September 2020, the WHO found that HCWs

accounted for 14% of COVID-19 cases (Mellen & Taylor, 2020). On September 10, 2021, the CDC (2021a) reported 549,418 COVID-19 cases among HCWs and 1,749 deaths. This is a dramatic increase in infections from 114,500 infections on August 15th, 2020 (Haseltine, 2020). Higher instances of COVID-19 cases can possibly be attributed to lack of Personal Protective Equipment (PPE) as well as more sustained and close interaction with highly infectious COVID-19 patients; both factors also increase HCWs' emotional burdens such as stress, fatigue, and burnout (Marquedant, 2020; Khasne et. al, 2020; Koh et al., 2011).

COVID-19 in North Carolina. On February 24, 2021, North Carolina was ranked 8th in "a table… sorted by places with the most cases per 100,000 residents in the last seven days" (New York Times, 2021). Data gathered by the New York Times suggests there have been steady increases in cases, hospitalizations, and deaths since March of 2020 (New York Times, 2021b). This is reflected by the increase in cases from 850,917 cases of COVID-19 and 11,007 deaths as of February 24, 2021, to 1,275,992 cases and 15,019 deaths as of September 10, 2021 (New York Times, 2021).

Rapid Qualitative Appraisals and Complex Health Emergencies

Rapid qualitative appraisals are studies conducted in shorter time frames than traditional anthropological studies (McNall & Foster-Fishman, 2007). These studies rely on qualitative methods to collect data and are beneficial for use during fast-changing situations such as complex emergencies and complex health emergencies (McNall & Foster-Fishman, 2007). Complex emergencies are events that disrupt daily and social life usually from "warfare, civil disturbance and large-scale movements of people" (WHO, 2002). Complex health emergencies are defined by similar disruptions in daily life but from epidemics, pandemics, and natural disasters (Johnson & Vindrola-Padros, 2017; Vindrola-Padros, et, al, 2019; Vindrola-Padros et al

2020). In the past, medical anthropologists have focused on the socio-political aspects of disease control and prevention in studies of complex health emergencies (Lynteris & Poleykett, 2018). There has been a shift in the study of complex health emergencies and anthropologists have begun studying public health responses and reactions to infectious disease control. Rapid qualitative assessments are useful in this context as the quick studies allow anthropologists to supply swift, on the ground, and community-informed recommendations to public health entities.

Rapid appraisals' flexibility is especially beneficial during complex health emergencies as information changes rapidly and is not always readily available before the study begins (Johnson & Vindrola-Padros, 2017; Vindrola-Padros, et. al, 2019; Vindrola-Padros et al 2020). Qualitative methods are used to develop initial findings and understandings of community perceptions during emergencies (Beebe, 1995; McNall & Foster-Fishman, 2007; Rifkin,1992). Semi-structured interviews are a preferred method for qualitative appraisals because they allow for more of a dialogue between the interviewer and the interviewee (Beebe, 1995). For example, interviews can help mitigate rumors that develop during complex health emergencies as researchers can learn where and why the rumors developed (Johnson & Vindrola-Padros, 2017).

There are some drawbacks to rapid qualitative appraisals. "Much of the debate on the use of rapid methods versus long-term research has centered on issues such as building rapport with local communities, capturing the insider's perspective, understanding the complexity of situations, documenting how beliefs and practices change through time, and corroborating data and interpretations" (Johnson & Vindrola-Padros, p. 64, 2017). To overcome these challenges researchers code and analyze data continuously throughout the study (McNall & Foster-Fishman, 2007). Multiple rounds of coding allow researchers to quickly analyze the data and to adapt studies to changing situations to help ensure the validity of the studies. Additionally, coding and

analysis throughout studies helps to inform interventions that work in specific cultural contexts while the emergency is still in progress (Lynteris & Poleykett, 2018). Discussing the public health regulations with communities and understand their efficacy for the local context, leads to quick recommendations for how to improve the responses. “Collaborations are needed to underwrite more creative, historically and locally aligned characterizations of risk (modeled or observed) to support contextualized preparedness or response” (Abramowitz, et. al, p. 1735, 2018).

Complex Health Emergencies, HCWs Emotions & COVID-19

Assessing HCWs’ feelings and emotions during complex health emergencies is essential to ensuring proper epidemic control and understanding how to adapt responses to future emergencies. Complex health emergencies, especially epidemics and pandemics, are emotionally stressful for HCWs. Koh et al. (2011) conducted a study of HCWs’ concerns during outbreaks of viral respiratory diseases, specifically SARS. They found that HCWs were more likely to fear becoming infected, and were at higher risk of infection, fatigue, burnout, and social stigmatization (Koh et al., 2011). Fears and anxieties are worse if HCWs are in positions that require close or long-term contact with infected patients (Khalid et al., 2016). HCWs expressed these feelings and concerns during other complex health emergencies including Ebola, MERS, and N1H1 outbreaks (Khasne et. al., 2020). Studying these feelings and emotions in the context of complex health emergencies allows researchers to create situation-specific responses and recommendations (Johnson & Vindrola-Padros, 2017).

During the 2014 Ebola outbreak, healthcare providers expressed these concerns and felt the burden of not being able to physically interact with patients (McMahon, 2016). Furthermore, techniques being used now during the COVID-19 pandemic are like strategies used to mitigate

the 2014 Ebola outbreak, and the SARs outbreak in China in the early 2000s. Both epidemics required quarantining after exposure, temperature checks, and the use of PPE to mitigate the risk of infection (Koh et al., 2011; McMahon, 2016). COVID-19 guidelines detail the need to wear a mask while in public and to stay home while sick as infected persons are contagious when showing symptoms (CDC, 2020). The distance required during the Ebola epidemic added to the emotional burden of HCWs and has done the same during the COVID-19 pandemic (McMahon, 2016; Block, 2020).

Initial academic studies of the COVID-19 pandemic conducted in India, Spain, and China show HCWs are experiencing the feelings and emotional responses discussed above (Khasne et. al, 2020; Ruiz-Fernandez et. al., 2020; Hu et. al, 2020). Khasne et. al. (2020) found that nurses were more likely to experience depression and anxiety because of stress from the pandemic. They also found that female HCWs were more likely to experience additional emotional burdens because of added responsibilities at home (Khasne et. al, 2020).

Nurses in the United States have shared similar sentiments in news stories about their experiences during the COVID-19 pandemic. For example, nurses are being asked to take on more patients than normal (De Mar, 2020). This need for more nurses is reflected in the call for more travel nurses and for travel nurses to relocate to cities with high population densities and COVID-19 cases (Aning, 2020). The toll of additional patients, and hours, is leading to burnout and fear of infection among nurses (Aning, 2020). In a New York Times article, Dr. Mark Rosenberg explains, “as the pandemic intensity seems to fade, so does the adrenaline. What's left are the emotions of dealing with the trauma in stress of the many patients we cared for… There is a wave of depression, like down, true PTSD and a feeling of not caring anymore that is coming” (Hoffman, 2020). Dr. Rosenberg is the chair of St. Joseph’s Health emergency

department in Paterson, New Jersey (Hoffman, 2020). The similarities between reactions to COVID-19 and past epidemics, initial academic studies of COVID-19, and news stories about healthcare works demonstrate the need for more studies of nurses' emotional states and reactions to the pandemic. Studying HCWs' current perceptions and emotional reactions to the pandemic is necessary for improving responses to this as well as future pandemics.

Affect Theory

Affect is experiences of senses, feelings, and expressions of emotion (Freidus & Caro, 2021). It "structures how humans interpret, understand, and make sense of their lives" (Freidus & Shenk, p. 201, 2020). This structure provides a way for people to feel, express, and interpret emotion. "According to Parreñas: 'Affect does not reside within a human individual's body and mind nor does it solely reside within the interface of human bodies.... It is between bodies that we come to feel affect'" (Parreñas, as cited in Freidus & Shenk, p. 201, 2020). Affect and emotions are contextual and depend on influences from the environment, the individual, and others (Freidus, 2020; Ahmed, 2004). However, because context is dependent on individual interpretation, conveying the affective experience of an event is difficult. "The challenge for ethnographers has always been to articulate in words and conceptualize theoretically what is only felt and sensed" (Skoggard & Waterston, p. 109, 2015). Affect theory is this theoretical articulation and contextualization (Skoggard & Waterston, 2015). It is a way to understand and describe how people display and react to emotions (Freidus, 2020).

Affect and emotion are not exactly the same thing. Emotion is in essence a part of affect; it is what helps us gauge and understand others' affect. That being said, in this study the terms emotions and feelings can be used interchangeably with affect. Because the focus of this study is on the emotions displayed by the informants, using emotion and affect interchangeably will help

in understanding the analytical focus is on expressions of emotion. Coding for affect requires understanding that interviewees will not always directly name the emotion they are feeling; therefore, affect theory is especially fitting for analysis of this case study as it requires interpreting others' feelings and experiences. Affect theory is particularly salient in this case study because the pandemic is ubiquitous and is the overriding context within and against which nurses' emotions are generated and how those emotions react against as well as inform their experiences.

Since the pandemic has been an experience the entire world has shared, it is necessary to note that affect is not just an individual experience,

> collectivities can and do have affect… the organizing principle of mass celebrations can be any number of constructed identities- national, religious, gender, ethnic or racial, sexual orientation- or might be based on a common experience of oppression, violence, or struggle; Of joy; or of memory of actual or imagined events. Thus, affect as a noun and verb has as much to do with senses and sensibilities of the collective unconscious and conscious and the body writ large the body politic, the social and the cultural as it does within individuals mind, body, and emotion (Skoggard & Waterston, p. 112, 2015).

Thus, the experiences of the nursing units are part of the full context of respondents' emotions. Additionally, the nurses' emotions can be felt and communicated to outsiders as an experience shared by the entire group. This collective experience of affect is key to understanding the data found during this study. Group identity and experience during a major, and traumatic event, allows individuals to experience and understand their emotions through the collective.

Methods

This rapid qualitative appraisal focused exclusively on nurses working in hospitals in North Carolina. There were no specific demographic limitations to who could participate. Anyone who is a nurse and over the age of 18 working in North Carolina with COVID -19 patients could participate. This is part of a larger project conducted by Dr. Freidus in collaboration with Lennin Caro and James Robbins that has IRB approval. Dr. Freidus and members of the research team sent a flyer to various organizations to initially recruit participants (see Appendix A). Participants were recruited via snowball sampling after the initial recruiting. Participants e-mailed Dr. Freidus to ask to participate in the study. She then shared information about the study, sent the participant a consent form to review before interviewing, and sent me the participant's contact information to set up the interviews (see Appendix B).

I conducted six semistructured interviews that ranged from 30 minutes to one hour (see Appendix C for participant demographic information). The interviews took place via zoom and were recorded and transcribed using scribie.com. Questions focused on changes in work duties or everyday responsibilities because of the COVID-19 pandemic (see Appendix D for research protocol). Additionally, I specifically asked about interviewees' emotional and/or mental health challenges that have resulted from the pandemic. The interview transcripts were uploaded and coded in Nvivo.

Per Johnson and Vindrola-Padros's (2017) recommendations the interview data was coded multiple times to help ensure accuracy. I looked for recurrent themes alongside the rest of the research team using a joint codebook. This joint codebook was not used to analyze the data for this project. This initial coding was independent of my project; it was essentially an initial reading of the transcripts. During this initial reading, I noted themes surrounding emotions that

were consistent throughout the interviews. After the coding for the joint project, I then created the separate codebook used to analyze this case study by determining what broad emotions could be used to describe recurrent themes and emotions. For example, mad and annoyed may have both been themes, but I identified them as emotions that could fit under the same code "anger". The codebook is listed in Table 1.

Table 1

Codebook

Anger
Duty
Emotional Expressions (Sensory)
Exhaustion
Fear
Support
Happiness
Mental Health
Physical Discomfort
References to Other People's Emotions
Sadness
Trauma

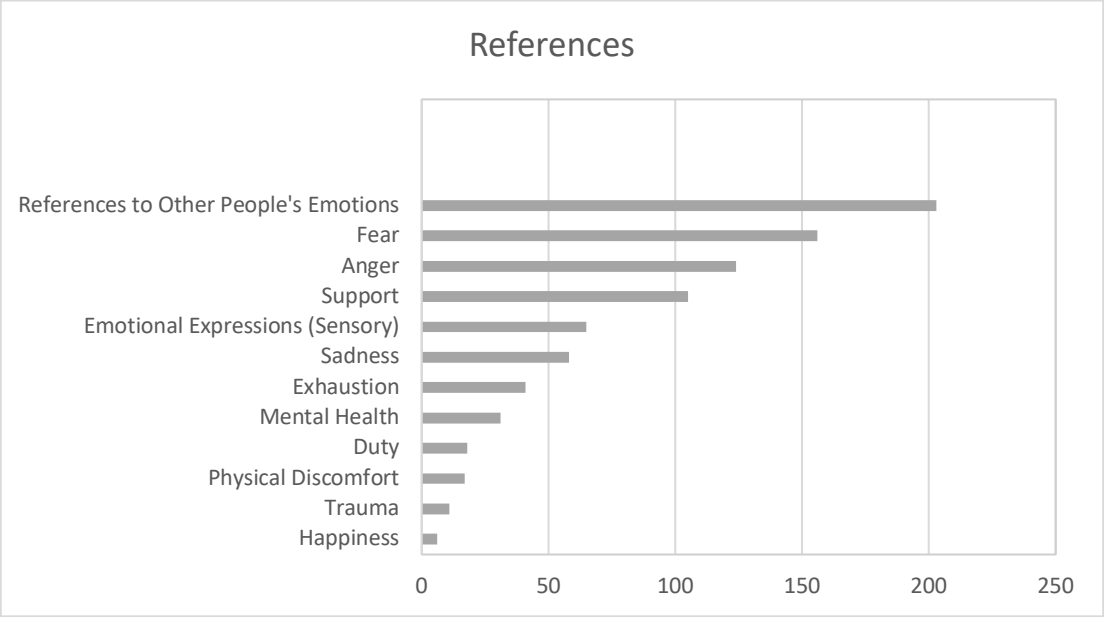
Note. The codebook used to independently code the data.

I then used this independently created codebook to recode the interviews to analyze the necessary data.

Results

Figure 1

Total Number of References for Each Code



Note. Data is from all Interviewees.

This graph shows the total number of times all interviewees referenced each of the codes listed in Table 1. Interviewees referenced other's emotions the most with 203 references, followed by fear (156 references), and then anger (124). Support includes feeling supported and not feeling supported, in total references to support occurred a combined 105 times. Emotional expressions (65 references) are sensory expressions of emotions: sighing, laughing, crying, etc. Sadness was referenced 58 times. Exhaustion (41) and discussions of mental health (31) are next. Feeling a sense of duty (18) are times interviewees discussed feeling like being a nurse was important to them. Physical discomfort (17) are expressions of feeling bodily discomfort not emotional discomfort. Finally, trauma was referenced 11 times and happiness was referenced only six times. Other's emotions were referenced 197 more times than happiness, fear 150 more times, and anger 118.

Not all interviewees displayed or referenced all the categories for which I coded. It is important to note that affect is the emotion an individual feels, and the emotions that we interpret others feeling. Therefore, what I interpret as sadness may have been described as fear by the respondent. Additionally, emotions are not discreet categories; people can feel more than one emotion at once. For example, an interviewee may have referenced sadness and exhaustion at the same time. To help make analysis easier, and to try and account for overlap between emotions, I put the emotions into groups. These subcategories are anger, fear, and sadness; exhaustion and trauma; happiness, feeling supported, and duty; emotional expressions and physical discomfort; and references to the emotions of others.

Referencing the Emotions of Others

References to the emotions of others are times when interviewees would talk about how other people were feeling. These references usually took the form of "We Stories" or references to others. We Stories are stories about groups of which the interviewee is a part. A reference to another person, or multiple other people, would be anytime an interviewee discussed how someone else was feeling. These are called references to other's emotions or "Other's Stories". Other's Stories can be times when the interviewee was present and witnessed the third party's emotions. One interviewee described seeing a traveling nurse who was too scared to go into a COVID-19 positive patient's room:

> I had a traveler taking care of him that was freaking out and did not wanna be there, did not... Was just very hesitant to go in the rooms, and I looked at the patient and he was in respiratory distress, his oxygen saturations were in the 70s, he had the high flow oxygen on at a 100%, so that's basically the step before you get intubated.

Other's Stories can also be stories about other people and the interviewee was not present at the time of the story. They were just told about another's feelings or fears. One respondent shared a friend's story about a family reunion, "this other person who's a grad student, I think she's close to 30, young, single and she was told by her family, their family reunion, they don't want her to go because she takes care of COVID patients".

Another interviewee shared a story about a co-worker whose father died: "another co-worker, I think around August, lost her dad to COVID out in Arizona. And once again, she's talking to her brother, she's talking to her mom, her sister, everyone's spread out, but nobody can come together to provide that post-death support". These stories are both about people other than the interviewee and are stories where the interviewee was not present. Each story references how the subject felt even though the interviewee was not there to judge how the subject felt. References to other's emotions can serve as a tool to introduce feelings the interviewee wants to discuss but does not know how to or does not want to bring up. Using Other's Stories to discuss emotions allows the interviewee the relief of emotional discussion without the vulnerability of talking about themselves.

Expressing stories about others is also done in the form of We Stories. We Stories are stories about groups of which the interviewee is a part. The interviewee is a group member but does not discuss themselves as an individual when recounting those stories. One interviewee discussed how staff's feelings changed throughout the pandemic,

> We went from kind of... It's almost like the stages of grief where we're super upset and anxious and almost angry, "Why are we having to care for all these patients? Why can't other staff help out?" to acceptance. And now, we're at burnout. Our staff is leaving. I found out about two more people leaving today that are some of our best nurses. 'Cause

> now, we're not scared anymore, necessarily, we're gonna get it. We know what we're doing or properly, but it's emotionally draining to have to do this day in and day out, and we've had a lot of patient deaths... No, not necessarily codes, where we go in and we code them, but they're made DNRs before they get to the end stages of COVID. But it's taxing, "Are your patient's doing well?" You come in the next day and they're in the ICU intubated, 'cause they crash so quickly.

We Stories are also a tool to discuss emotions without the vulnerability of admitting feeling those feelings. Additionally, it is easier for interviewees to name specific emotions when talking about others. For example, an interviewee discussed adding additional PPE out of personal concern for infection, “so I started wearing N95 and a shield on every floor, and all the other nurses would look at me like I was crazy, and I'm like, ‘Uh-huh, uh-huh. I'm taking care of me. I'm wearing an N95 and a shield 'cause I've had three tests already’”. The interviewee is fearful but does not explicitly say that. In a passage from the same interviewee talking about how their unit felt during an outbreak, they explicitly state feeling scared, “And in the meantime, we also had an employee outbreak. So everyone was scared over that as well. So it's been a journey”.

Physical Discomfort and Emotional Expressions

Three people discussed sensations of physical discomfort. These include references to what PPE feels like, feeling overheated, body aches, and anything similar. For example, one interviewee explains what the PPE required to enter COVID-19 patient rooms feels like,

> You're uncomfortable. You're uncomfortable. You come out and you... We wear seal blue, which is the light blue scrubs. When we take them off, you can see the sweat all over our scrubs. You can see it because it turns the blue dark. It is uncomfortable. Every

> once in a while, you'll find... Or I have found air conditioning vents on the unit that blow really hard. Every once in a while, I take everything off and go stand... Well, I got my scrubs on, but I go stand in front of it and try to cool off. [laughter]

Physical discomfort also includes physical symptoms of illness,

> I'm wearing an N95 and a shield 'cause I've had three tests already. And then I had another test this past week because I was at work and I had stomach problems, and that's one of the symptoms, is diarrhea. So I... In my heart I knew it was probably the Mexican food or whatever. [chuckle] But I had symptoms, so they had to send me home and I had to get tested.

These two quotes are also examples of emotional expressions. Emotional expressions include laughing, sighing, crying, etc. It is important to note that not all laughter is laughter of happiness or in response to finding something humorous. Laughing can also be out of discomfort, or to fill a silence, like with the quote above. Five interviewees displayed emotional expressions, and of the 65 total coded references, only four were not chuckles or laughter.

Anger, Fear, Sadness

Anger

All the interviewees referenced anger. Anger is feelings of frustration and annoyance. References to anger included phrases such as “frustrated” or “incensed” and times when respondents discussed things they did not like. Respondents often discussed policies, others’ actions, and the general existence of the pandemic as things they did not like. One interviewee discussed doctors and other staff not wanting to interact with COVID-19 patients,

> it's been frustrating because I was waiting like three days one time for my patient to get a swallow study so that they could determine what they could eat or not... I've had a lot of frustration with that.

Groups also felt anger. Another interviewee explained there were a large number of COVID-19 related deaths at a hospital in Texas where they used to work. The interviewee explained that those numbers were in large part due to a lack of mask mandate. The respondent further explains that there are many people still contracting COVID-19 because they are not wearing masks,

> We did have some deaths. And the State of Texas didn't have mandatory masks, they didn't shut anything down, and there was no concentrated effort from the top-down, and you know what, that makes us so angry. That makes us so angry that we're still having to deal with this because you won't take responsibility for your safety.

Finally, a third respondent provides an example of referencing the emotions of others while explaining they try to transition to a different mindset on their drive home from work as they "know from time to time people have gotten frustrated. There's a lot of people who have gotten very emotional".

Fear

All respondents discussed feeling fear. Fear is feelings of uncertainty or worry. Fear was usually explicitly named or named when respondents said they felt "scared". Stories often centered around not wanting to do certain things, not feeling safe doing certain things, and feeling concerned for others. One nurse discussed fear they saw in younger nurses that did not have experience working with infectious diseases, "the younger nurses who had to go home to their families, their kids, or didn't have a lot of experience with personal protective equipment, were really scared and more worried about it". This respondent continued to explain that they

have worked on infectious disease floors in the past, so the equipment did not bother them as much. This story exemplifies sentiments of not feeling comfortable with something, concern for others, and not feeling safe. Additionally, this exemplifies discussing the emotions of others. The respondent says that the younger nurses were scared and worried about their families. Finally, this may have been a tool for the interviewee to bring up their fears about working on a COVID-19 floor and having to wear additional PPE. The interviewee may have felt more comfortable presenting these feelings through a third party because they have worked on an infectious disease floor in the past.

Fear was also expressed as anxiety and as a collective experience. A respondent discussing how sentiments among staff have changed throughout the pandemic explained, “it's almost like the stages of grief where we're super upset and anxious and almost angry, ‘Why are we having to care for all these patients? Why can't other staff help out?’”. They continue to explain that the staff now feels burnt out and many are leaving the hospital and profession. These sentiments are also reflective of those expressed by the interviewee discussed in the sections on anger.

Finally, uncertainty about the future was also an expression of fear on the individual level. Many of the interviewees expressed concern about the seriousness of COVID-19 and the pandemic progression, “I'm worried about the fall honestly."

Sadness

Sadness is feelings of unhappiness or sorrow. All interviewees referenced sadness. They typically said they felt “bad” for others or saying things are “hard”. Discussions often focused on death, illness, and longing for times and activities before the pandemic. Sadness was often hard to differentiate from fear because longing for the past and concern about the future were

expressed similarly or often at the same time. For example, one interviewee explained they were feeling sad because they were grappling with feeling uncertain about safety and remaining in the profession, “it's hard and weird and I... It's been weird. I got into this for a reason. I know I'm here to care for sick patients but you just wanna make sure you're doing the right thing and you just wanna make sure you're protected as well. So I don't know. Been a journey so far”. This is a good example of having to differentiate between fear and sadness as it seems like they are also expressing uncertainty about the future. However, because they say, “it’s hard” and discuss these feelings in a more present tense, it is likely more accurate to consider this sadness.

A helpful example for discussing the emotions of others comes from one respondent discussing a coworker’s feelings about not being able to attend her brother-in-law’s funeral. She explained, “...she took bereavement leave just to help her own mental health, but she felt really bad she couldn't be there for her sister. Her sister couldn't be with her husband when he died. There's been no funeral. It's been hard.” The interviewee discusses how a third party felt during a time when the interviewee was not present. This interviewee used this story as a way to introduce her own feelings of sadness about not being able to see her husband’s parents out of fear of infecting them.

> Yeah, so it's been hard because it's almost like you're waiting for when is your moment that... In a way, I'm lucky 'cause both my parents passed. My dad passed away last October, and my mom two years ago in September. So I'm not worried about my parents. But my husband's parents are in their 80s and they're here, and we're worried about giving them COVID, so we haven't socializing or seeing them. We've been avoiding their house, and I think it's been hard for them.

Finally, one interviewee described a collective feeling of sadness when the unit had to take care of a sick coworker:

> We have not [had] an outbreak on our unit, but there were about four or five staff members who tested positive at one point, and so everybody had to go get tested. But one of our nurses ended up getting sick enough having symptoms to have to be admitted into the hospital, and we actually had to take care of her as one of our patients. So that was really tough 'cause it's like you're taking care of your co-worker who is having a lot of trouble breathing. She ended up going to the ICU, she didn't get intubated, but she was maxed out down on Vapotherm. So that was really tough, and other members of the hospital who got it, like we had a member from transport, we had to take care of for a little while, I think a nurse from another floor had it, so that's definitely been tougher. My concern for my co-workers is higher, than it is for myself really.

All Three

There are also times when stories incorporate all of the emotions expressed in a subcategory. It is necessary to acknowledge again that while I created categories that resonated with the interviewees, it is almost impossible to categorize emotions with complete accuracy. Stories that include multiple subcategories help with understanding how difficult it is to categorize emotion.

Stories that include all subcategories of emotion are also a helpful tool for understanding how I made my own determination between the different emotions. For example, this story from a respondent discussing their family shows anger, fear, and sadness:

> I've noticed that they just sometimes are frustrated and they just wanna talk about it, so we try to let them talk about it if they need to, but I think reminding them that it's not

> forever has been the hardest thing. My son used to love going to school and now he really doesn't like it, and I'm like, "Well, it's not gonna be like this forever. " And he's like, "It feels like I'm never gonna go back." And so we try to... And then you just create whatever consistency you can and hope for the best.

The interviewee shares others' emotions when they explain their sons have been frustrated and scared. Additionally, the interviewee demonstrates sadness for their son when they say that it is hard to remind them it is not forever.

Exhaustion and Trauma

Exhaustion

Exhaustion refers to feelings of extreme tiredness and needing a break, and not wanting to continue with one's work. Exhaustion often was explicitly named. Interviewees explained that they felt exhausted themselves and noticed signs of exhaustion in others. They discussed feeling tired, extra work responsibilities, and the desire or need to take a break or go on a vacation. An interviewee explained seeing signs of exhaustion in themself:

> I'm burned out, I'm honestly thinking about leaving the nursing profession. I'm to that point where I had that conversation with my husband this weekend, where I feel a personal obligation to protect the staff that I'm to educate. I'm not their manager, I don't hire or fire them, but it's my job to make sure they're educated and that they're doing their job properly. I've taken that very personally. I was putting in 60 hours a week at the beginning, and it's taken its toll, and things are still changing.

Exhaustion was not always explicitly named, but instead was described. For example, when discussing patients' emotions one nurse explained,

> it's taken a toll on the patients. The only people they see all day long, and they might be here for weeks, the only people they see are the nurse, housekeeping when they come to change the trash, may or may not talk with them, the doctor comes in for 10 minutes or whatever, it's 30 minutes a day. So it's like they're not allowed to have visitors. They're not allowed to you know... They're not allowed to... So it's not that I feel like I'm having anything taking a toll on me, but I'm empathetically through the patients, that's where I'm feeling the most stress is for them and with them and... But me personally, I think I'm fine. Yeah.

This quote is a good example of an interviewee using another's emotions to introduce their own. While the interviewee says they are not tired, they admit that they feel empathy for their patients and admit to feeling vicarious tiredness through them. We Stories were also used to describe exhaustion. Similar to the other examples, this shows constant changes from the pandemic lead to burnout and exhaustion. "We're at that point, and I'm, myself included, am at that point as well, where we're just so burnt out and it just... It's never-ending. And the changes haven't stopped either, there's still changes coming".

Trauma

Five of the interviewees discussed trauma. Trauma is similar to exhaustion. Trauma is a strong reaction to the events of the pandemic and a feeling of shock or not being able to process emotions in the moment when they happen. Respondents sometimes described trauma as feeling symptoms of PTSD or noticing what they assumed to be PTSD. Trauma was often expressed in conjunction with exhaustion as interviewees would describe feeling tired and therefore unable to process their shock or emotions.

> I'm just getting tired. My contract is up in November, and I'm going to go get in my RV and go sit in the mountains somewhere for a month and stay away from people. I'm tired. I'm tired of seeing people without masks, I'm tired of dealing with this political crap. I'm gonna go vote in November and then go to the mountains. [laughter]… I'm just gonna disappear and take it easy for a bit and not have to... And process. Nature will help me de-stress and reconnect, yeah. I haven't had any time off since February. I'm working my shifts and I haven't had any time off to go and decompress, so I need to.

Trauma was also noticed in others. One nurse described seeing trauma and what they assumed to be PTSD in other nurses,

> And then, as it's gone on, I think I saw a lot of shell-shocked, and that's when I started doing the meditation and Zumba and all that, because I could see in their faces that they were coming to the unit and just tired. It looked like shell shock to me. It was really PTSD.

The quotes about trauma are reflective of those about exhaustion. The ongoing nature of the pandemic and the rapidly changing policies and responsibilities of nurses are leading to trauma responses. The lack of time off and the number of deaths from COVID-19 have added to the sentiments as well. Furthermore, constant fear adds to the feelings of both trauma and exhaustion,

> And then other ancillary staff weren't coming to the floor, and it made us angry that they could stay safe on another floor, and we had to stay here and do their jobs. And so a lot of staff got angry and we had to process that. And now, they're tired. They're very tired. Everyone is tired.

Happiness, Feeling Supported, and Duty

Happiness

Four respondents mentioned feelings of happiness. Happiness refers to feeling happy, content, calm, or positively excited. Happiness was usually seen in descriptions of other's emotions. Participants would describe helping patients or coworkers and noticing the friend or patient feeling happy. Respondents also explained that they would usually feel happy after helping others or when others would thank the interviewee for help. A respondent describes a patient thanking the interviewee for their help and seeing a show of gratitude from the hospital,

> the next day I saw her and she was feeling so much better and she thanked me for being there for her and it's just a good feeling when people start to turn around and when you see that these people are able to survive and they can get through it, walking into work Wednesday night, it wasn't there when I was leaving Wednesday morning. It's like this walkway from the parking garage to the hospital and they painted it yellow and they have these little ribbons and I think it symbolized all of the patients that have been discharged, like the patients that were able to get discharged, go home and feel better and was like a 'thank you' to the healthcare workers. I thought that was a nice touch.

This quote demonstrates identifying happiness in a patient as well as the interviewee feeling happy. The patient was happy about feeling better and thankful for the care they received. The interviewee was happy for their patient and the hospital's acknowledgment of the COVID-19 unit.

Support

Support includes positive and negative references of feeling supported or not feeling supported. Feeling support, and lack of support, generally referred to interactions with friends,

family, and work institutions. Stories about how others have comforted the interviewees were common expressions of feeling supported. One interviewee shared a story of feeling supported by their husband, “my husband finally did come up and help to support me emotionally because I told him I needed him here. But yeah, it's been tough on me and tough on all the nurses on the floor”. Similarly, stories about access to PPE and other supplies were expressions of group feelings of support.

> That to us was reaffirming, ‘Okay, we're wearing the proper PPE, we're doing things correctly.’ At that point, right now, they're basically wearing N95s in all COVID-positive rooms, but at that point, we were still wearing the level three masks if they weren't on a lot of oxygen.

This interviewee was discussing a small outbreak on the COVID-19 floor. They explained that the COVID-19 floor nurses felt supported by the hospital at this time because they had access to PPE that prevented a worse outbreak.

Finally, stories about others often were times interviewees discussed patients thanking them or other nurses for helping them. One respondent described an instance a fellow nurse who got COVID-19 thanked the interviewee for providing care:

> It's weird and so just to give you another little small story so my last shift at work, I had a patient who was a nurse and she didn't get... but it's just interesting to see a fellow co-worker in that position. It was just hard and she was having a hard time with it... One of the nights, she just wasn't feeling well. She was having a rough night and she said to me "Please don't let me die here.” ... the next day I saw her and she was feeling so much better and she thanked me for being there for her.

Not Feeling Supported. Lack of support was usually expressed through stories about the interviewees not receiving help or others not being there for the nurses in an emotional capacity. Additionally, lack of support was often seen in stories about hospitals creating rules and policies which added additional work for HCWs or make them feel unsafe. Five respondents referenced not feelings supported.

> One interviewee explains that institutional support does not extend past their supervisor,
>
> Yes, I think our mid-level management, so the nurse managers that are over the unit, my manager will... They listen, but it kind of stops there. They listen to us, they hear what we're saying, but they can't go any... Nothing's being done about it on a higher level. So I feel like the Director of the Pulmonary Unit, especially... So he's over three units, and pulmonary is one of those, he's very good at listening to staff and advocating for them, but he can only advocate so high. And then once it hits a roadblock, there's nothing he can do about it, so that middle level tier is listening, but I think it's not going anywhere after that.

Another explains feeling it is hard to find comfort from others,

> I think that people are also just so emotionally burnt out because they can't... You can't take breaks. You can't really go out to dinner and relax, you can't really take your vacation time and do anything with it, and I think that I've noticed that I've had a lot more, I guess, counseling sessions with my employees about what's going on that's impacting their work than I think I normally would. I think that we're just at a point where everybody is just very emotionally burnt out just by being. Just by existing in this sort of time where things are very uncertain, things keep changing. It's hard to... I don't know, bond with people with the masks and the eye protection, and even something as

> simple as just walking past someone in the hall and smiling at them as you pass by, that's... I still do it...

Duty

All of the respondents referenced feeling a sense of duty: feeling a calling to nursing as a profession or like one is meant to be a nurse. All of the interviewees explained they will always be nurses. One respondent, when asked if they would ever leave the profession, provided a succinct definition of feeling a sense of duty,

> That's not anything that's ever crossed my mind for me, this is, in essence, what I signed up for, nobody wants to be exposed every day in a pandemic, but I did this to help people, I did this to take care of sick people I knew that... We get exposed to other things all the time, and for me, this is... I couldn't imagine doing anything else. So I guess for me, regardless of the pay situation, regardless of the PPE situation, this is... This is the career that I chose, and I love it, no matter what, even with its issues.

As the above interviewee explained, the duty to remain in the profession centered around a need to help others. One respondent explained they stayed after the pandemic began because they felt a sense of duty to their patients,

> If they ever did run out of PPE or supplies, we'd just have to reuse it. I wouldn't mind using stuff, 'cause I don't want the patients to go without… 'Cause if you walk out, that's not... You know, the hospital is gonna hurt, but it's the patients who are really gonna suffer. Or not suffer, but get less quality care.

Feeling a sense of duty also extends to fellow nurses as well,

It's kinda like me, I'm not really stuck. When they offered me the extension of my contract, I could have said no, I could have said... But I'm kind of the [parent] on the unit, and I didn't wanna leave my kids and I wanted to continue to stay and help them.

Discussion

In this study, HCWs expressed emotions and feelings seen in past studies of epidemics and pandemics. The prevalence of fear, anger, and sadness reflect emotions expressed during past complex health emergencies (Khasne et. al., 2020; Khalid et al., 2016; Koh et al., 2011). During the MERs, SARs, N1H1, and Ebola outbreaks, HCWs also expressed fear of infection, burnout, and social stigmatization (Khasne et. al., 2020). Of these, the Ebola outbreak shares the most similarities with the COVID-19 pandemic. The Ebola epidemic required physical distance from infected persons; similarly, COVID-19 guidelines call for staying six feet away from others (CDC, 2020; McMahon, 2016). "COVID-19 distances clinicians from their patients to protect them, producing an acute shift that is deeply embodied and likely to have a permanent impact on the health and well-being of both providers and patients" (Block, p. 64, 2020). In addition to the distance between HCWs and patients, COVID-19 has led to other stressors for HCWs. Stressors identified by study participants are listed in Table 2.

Table 2

COVID-19 Specific Stressors Identified by Study Participants

Teaching children from home
Partners stress if quarantining, and/ or working from home
Fear of infecting other, specifically family and friends
Fear of children being ostracized for the HCW's profession
Fear of being ostracized by friends, family, and coworkers
Broadening of pay discrepancies between nurses

This impact is already being seen in the way HCWs discuss their affective experiences providing care during the pandemic. In the past, the affective experience of the group was

described as a collection of individual experiences (Skoggard & Waterston, 2015). However, these data show distinct patterns of affective group behavior and a shift to the collective being describe as though it is an individual. Additionally, third parties' emotions were described through the interviewee. Meaning, nurses explained their individual, embodied feelings, and emotions through others. We and Us stories were a tool to introduce emotions and begin to process HCW's own affective experiences.

Nurses feel chosen for the profession and from the references to feeling a sense of duty it is clear they see themselves as caretakers. The profession is a central part of their personhood. Given these embodied feelings of responsibility for the wellbeing of others, even at personal risk, it is understandable that processing certain emotions would be difficult and go against an ingrained part of HCWs' sense of self. For many, "[It] is, in essence, what [they] signed up for," and they have a responsibility to take care of others, even during extreme circumstances. Looking more closely at the subjectivities of nurses in relation to labor trends and the highly gendered nature of their "care" work is beyond the scope of this project but is worth future consideration in light of some of these findings.

Looking at sadness, exhaustion, trauma, and fear we can see the differences in the way the HCWs processed emotion on an individual level versus the group level. The interviewees explicitly stated feeling sadness and exhaustion but did not directly label other emotions as often. It was easier for the interviewees to identify trauma and fear in others than in themselves. Importantly, when they did label others' emotions, respondents sometimes backtracked and stated they did not feel emotions themselves. HCWs would also clarify they felt emotions towards others not towards themselves. Examples are listed in Table 3.

Table 3

Examples of individuals' emotions

"My concern for my co-workers is higher, than it is for myself really".
"So it's not that I feel like I'm having anything taking a toll on me, but I'm empathetically through the patients, that's where I'm feeling the most stress is for them and with them and... But me personally, I think I'm fine".

On the other hand, after naming the emotions in the We Stories, interviewees allowed the emotion to remain named and, therefore, felt, as seen in Table 4.

Table 4

Examples of others' emotions

"because I could see in their faces that they were coming to the unit and just tired. It looked like shell shock to me. It was really PTSD".
"My 11-year-old got really scared watching the news".
"As far as testing for the employees, it's not mandatory, but we're all worried about ourselves and our family".

Thus, the nurses interviewed in this study used Other's Stories to process and understand their own emotions. Understanding the ingrained sense of responsibility for others that nurses feel, it is important to utilize stories about others to help nurses cope with the extreme circumstances of the COVID-19 pandemic.

Conclusions

Conclusions drawn from this study are twofold: I provide recommendations to improve responses to the stressors the HCWs discussed, and I argue for continued research into the interdisciplinary aspects of this study and this new avenue of affect theory.

Programming Recommendations

I have drawn on the data gathered in this study to create recommendations for responses to the COVID-19 specific stressors the nurses discussed. Using the affective analysis discussed above, these responses also take HCWs' emotions and experiences into account. Responses should be delivered in three forms: recognition, support, and resources. Recognition can include visual displays and administrative programming. Visual displays are an easy way to acknowledge and commemorate HCWs' work; a helpful example is the yellow ribbon display discussed by one respondent. The in-person presence of administrators and supervisors demonstrates administrative recognition of HCWs' increased risk and responsibility. Additionally, there should be increased pay, especially for those working in COVID-19 units or directly with COVID-19 patients. Facilities should provide activities and opportunities for relaxation and overall health. These activities show administrators' understanding of HCWs' increased stress and exhaustion.

Support and resources come at the community and administrative levels. Community support is achieved through the general public adhering to COVID-19 guidelines. Health Care Facilities should: staff units appropriately; communicate rules and policy changes clearly and efficiently; and provide access to PPE. Communities should give HCWs access to necessary resources, specifically cleaning supplies and PPE for personal use. Furthermore, administrators should provide mental health and emotional resources to HCWs: access to mental health services

and counseling. Debriefings about deaths and potential PTSD should be required once a week or every two weeks. Alternative delivery methods are a valuable tool for easier access: online or text-based options, shortened appointment times. Finally, HCWs should be allowed to use others' stories and experiences to explore their own emotions. Counselors, administrators, and Human Resources staff should know about HCWs potentially using others' emotions to introduce how the HCW is feeling. Understanding this form of emotional expression may make it easier to pursue avenues of questioning that are more comfortable for HCWs and lead to more authentic responses. Ultimately, exploring emotions through others will aid in developing programming that is more useful for HCWs.

Continued Research

There needs to be more research into the interdisciplinary aspects of these programs; this would ensure that HCWs have access to the best care and resources. Research should focus on the use of We Stories and Other's stories for introducing and processing emotion. It is vital to get input from those in the mental health field to gain a comprehensive understanding of these stories for emotional expression. Furthermore, an interdisciplinary study is useful in determining if these expressions of emotion are specific to nurses.

These data add to the field of affect theory by showing how individuals experience emotion through the collective. To continue to advance the field, it is necessary to determine if these emotional responses are specific to COVID-19. Researchers should compare how HCWs' expressed emotion during the COVID-19 pandemic to how HWCs did so during past epidemics and pandemics. Fear, burnout, anger, sadness, and social stigmatization are emotions that HCWs reported experiencing during past epidemics and pandemics (Koh et al., 2011). We can see if

these stories are specific to COVID-19 by examining the language HCWS used to describe emotions during past complex health emergencies.

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Appendix A: Participant Recruitment Flyer

Appendix B: Research Study Consent Form

UNC CHARLOTTE
Department of Anthropology
9201 University City Boulevard, Charlotte,
NC 28223-0001

Consent to be Part of a Research Study

Title of the Project: A Rapid Appraisal of U.S. Healthcare Workers' Perceptions of Care Delivery in the Context ofthe COVID-19 Pandemic

Principal Investigator: Andrea Freidus, PhD, MPH, University of North Carolina at Charlotte
Co-investigator: Christin Wolf, Graduate MA/MPH student, University of North Carolina at Charlotte

You are invited to participate in a research study. Participation in this research study is voluntary. The informationprovided is to help you decide whether or not to participate. If you have any questions, please ask.

Important Information You Need to Know

- The purpose of this study is to provide a rapid appraisal that will explore healthcare workers' (HCWs)perceptions and experiences of responding to the COVID-19 epidemic in the United States.
- You will be asked to participate in a 30-45min telephone or zoom interview.
- The only foreseeable risk associated with this study is the potential for distress when discussing workingwith patients under a stressful situation. Benefits from this study may include assisting researchers and policymakers in understanding how to respond to the current COVID-19 epidemic and how to plan for future outbreaks.
- At the end of the interview, we will ask you to pass along the principle investigators contact information and project information sheet to up to 5 other emergency room providers or staff at any hospital across the
- U.S. that might be interested in participating. This is NOT a requirement to participate, but a voluntaryaction to help recruit additional participants.

Please read this form and ask any questions you may have before you decide whether to participate in this researchstudy.

Why are we doing this study?

The purpose of this study is to explore the perceptions of emergency room providers and staff in relation to COVID-19 and their experiences treating infected and potentially

infected patients. We are also examining emergency room providers and staff perceptions and experiences in relation to the suitability of care deliverymodels and infrastructure to deal with the epidemic.

Why are you being asked to be in this research study?

You are being asked to be in this study because you are an emergency room healthcare provider or emergency roomstaff that works in a hospital in the United States during the COVID-19 pandemic.

What will happen if I take part in this study?

The participant information sheet (already provided) and consent form will be provided in advance of your being interviewed, and with sufficient time to be able to ask any questions that you may have. Having had your questions answered satisfactorily, you will be asked to sign this consent form, scan it or take a photo of the signed form and email it back to the researchers before the interview. If you are unable to print and scan this document back, we willask for a verbal consent. After reviewing the informed consent together over the phone and after having answered any questions you might have, the interviewee will ask for you to verbally agree or disagree to participate in the study. In addition, you will be asked to verbally agree or disagree to be audio recorded. The interview will be voluntary, conducted over the phone or zoom, and will last approximately 30-45 minutes. During the interview wewill ask you questions about your perceptions of the virus and the strategies currently being developed within yourhospital to respond to the epidemic. We will take notes during the interview and also request to be audio/video- recorded to ensure the most comprehensive accounting of your experiences. There will be NO identifying information associated with the recording or the transcription. All information gathered will be treated as confidential by the study personnel and will be anonymous for analysis.

You time commitment will be about 45 minutes.

What benefits might I experience?

Benefits may include assisting researchers and policymakers in understanding how to respond to the current COVID-19 epidemic and plan for future outbreaks. There will be no direct benefit to you from participating in thisstudy.

What risks might I experience?

Risks or discomforts from this research are very limited as this is a low risk study and all information will be keptconfidential unless we learn of serious risk to patients or staff from the information disclosed.

How will my information be protected?

Information you provide about your experiences and opinions will be documented, but your name will not be recorded or used in any reports of the information provided. The information obtained from the interview will be stored in the University's password protected google folders. In the case of phone interviews, we will need to collect phone numbers, store them in a password protected file and then delete them after we have carried out the interview. We will ensure that any personal information gathered for this research study is kept confidential

unlesswe learn of serious risk to patients or staff from the information disclosed.

We plan to publish the results of this study. To protect your privacy we will present all of the data in aggregate form from hospitals across the U.S. to avoid the potentially for inadvertently revealing any personally identifiable information. The results will be analyzed and written up for publication in scientific journals and for presentation atconferences. All information gathered will not be traceable to you or your hospital.

Other people may need to see the information we collect about you which is limited to agencies as required by lawor allowed by federal regulations.

How will my information be used after the study is over?
We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. The UNCC teamwill keep identifiable information about you only until the interview has been completed. It will then be deleted. Copies of the informed consent will be maintained for three years as required by law, but not storied with the data we collect. Your rights to access, change, or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. You can find out more about howwe use your information by contacting the study team (contact information can be found at the end of this document).

After this interview is complete, identifiers will be removed from the data/information and the data/information could be used for future research studies or distributed to another investigator for future research studies withoutadditional informed consent.

How will my information be used after the study is over?
We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. The UNCC teamwill keep identifiable information about you only until the interview has been completed. It will then be deleted. Copies of the informed consent will be maintained for three years as required by law, but not storied with the data we collect. Your rights to access, change, or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. You can find out more about howwe use your information by contacting the study team (contact information can be found at the end of this document).

After this interview is complete, identifiers will be removed from the data/information and the data/information could be used for future research studies or distributed to another investigator for future research studies withoutadditional informed consent.

Will I receive an incentive for taking part in this study?
There will be no direct benefit to you from participating in this study.

What are the costs of taking part in this study?
There are no costs to you for taking part in this study.

What other choices do I have if I don't take part in this study?
Taking part in this study is your choice. You may choose either to take part or not to take part in the study. Nomatter what decision you make, there will be no consequences to you in any way.

What are my rights if I take part in this study?
It is up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to bepart of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer.

If you wish to complain, or have any concerns about any aspect of the way you have been approached or treated bymembers of staff you may have experienced due to your participation in the research, please contact the research team. UNCC complaints mechanisms may also be available to you.

Who can answer my questions about this study and my rights as a participant?
For questions about this research, you may contact Dr. Andrea Freidus at afreidus@uncc.edu or 813-892-4457.

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, ordiscuss any concerns about this study with someone other than the researcher(s), please contact the Office of Research Compliance at 704-687-1871 or uncc-irb@uncc.edu.

Consent to Participate
By verbally saying 'yes', you are agreeing to be in this study. Make sure you understand what the study is about before you agree. Feel free to ask me any additional questions you may have. You will receive a copy of this document for your records. If you have any questions about the study after you verbally agree, you can contact thestudy team using the information provided above.

Do you verbally agree to take part in this study?

_____

Participant's Name (PRINT)

_____

Participant's Answer Date

_____

Name and Signature of person obtaining consent Date

Consent to be audio recorded
To assist with accurate recording of participant responses, interviews may be audio recorded [*explain if names willnot be used during recording*].

Participants have the right to refuse to allow such recording without penalty. Do you consent to being audiorecorded?

Participant's Answer: Yes/No (circle one)

Consent to be video recorded

To assist with accurate recording of participant responses, interviews may be audio recorded [*names will not beused during recording*].
Participants have the right to refuse to allow such recording without penalty. Do you consent to being videorecorded?

Participant's Answer: Yes/No (circle one)

_____

Name and Signature of person obtaining consent Date

Appendix C: Participant Demographic Information

Table 5

Participant Demographic Information

Participant #	P6	P7	P8	P11	P13	P14
Age	33	23	30		47	32
Gender	Female	Female	Female	Female	Female	Female
Time at current hospital	since June 2021	One year and 2 months	since April 2021	since Feb 2021	4 and a half years	since Dec 2019
Degrees	Bachelors	Bachelors BSN	Bachelors BSN	Bachelors Information Technology & Nursing	Bachelors &Working on MSN Family Nurse Practitioner	Bachelors & Masters in Nursing
Position	RN- travel nurse	RN-Clinical Nurse	RN-Clinical Manager	RN on a covid unit - travel nurse	RN on covid unit	Progressive Care Nurse Educator

[a] Time at current hospital is not listed in a uniform measure of time, or with specific dates, because the interviewees did not provide exact employment dates.

Appendix D: Interview Guide

Department of Anthropology
9201 University City Boulevard, Charlotte, NC 28223-0001

INTERVIEW GUIDE: HEALTHCARE WORKERS (HCWs)

Participant Demographics

Gender:
Age:
Education Level:
Role/Position:
Time in position:
Sector, brief description of facility

First, I want to ask about your work and the services you provide (Not COVID-19 specific)

1) Background
- Can you tell me about your role?
- Please briefly describe your normal daily tasks/responsibilities
-

Now I want to ask you about health services during COVID-19 outbreak

2) Have you been in contact with COVID-19+ patients? Yes/No
   Probes:
- If so, in what capacity?
- Right now, approximately how many Covid -19 patients are being treated in your facility?
- Are you afraid of being infected – why?
- What psychological/emotional impact, if any, does working during this outbreak have on you?

3) How has the COVID-19 outbreak affected health services in your department?
   And your personal ability to do your job?
   Probes:
- Affected your normal daily tasks/responsibilities
- On the delivery of services to non-COVID-19+ patients
- What tasks are you able to do more or less effectively
- How do you manage the isolation of suspected and confirmed
- Has there been appropriate transfer of patients within and out of your facility (Explain the process)
- Has there been an impact on staff's ability to make diagnoses and act on them
- Adequate supply of drugs, equipment and PPE (explain)

- Redeployment of staff

Reports suggest that end of life care as well as palliative care changed because of this pandemic.

- Do you have any experiences with end of life care in relation to the pandemic? Can you describe them and explain what has been different under pandemic circumstances?
- Do you have any experiences with palliative care in relation to the pandemic? Can you describe them and explain what has been different under pandemic circumstances?
- Motivation and capacity for (you) staff to work (probe: exhaustion, fear, anger etc.)
- Psychosocial and moral support – did they(you) receive any? Enough?

4) What were/are the preparedness strategies implemented by the hospital
   Probes:
- Did you feel these strategies were enough/successful
- Did you receive any training? Explain.
- Sufficient - PPE training such as mental health and well-being training

5) What are your thoughts/concerns about the pandemic? (in addition to x,y.z)
- Work
- Your personal life (personal health, family, responsibilities)
- The national effort
- The state effort
- The local (community) effort

6) How has it personally impacted your life **probe for mental health issues/stress
   a. Mental health support (to address risk of moral injury, trauma and developing severe mental health problems) and coping

7) How could health services or the provision of care during this time or in future emergencies be improved?
   Probes:
- Support to HCWs? From whom and How?
- Coordination and official guidance of COVID-19 response.
- Early detection and reporting.
- On-going health promotion and community education. E.g. potential sources of infection, safe practice?
- Mobilisation? E.g. identifying and coordinating trusted community volunteers and support?
- Disease outbreak control activities?
- Testing (public and staff)

8) What main factors influence your decision to stay in the HC workforce?

9) What factors would contribute to your deciding to leave the HC workforce?

10) Is there anything else you would like to mention that you feel is important?

Thank you for your time and for sharing your opinions and experiences with us.