

University of Massachusetts Amherst

**ScholarWorks@UMass Amherst**

---

Psychological and Brain Sciences Faculty  
Publication Series

Psychological and Brain Sciences

---

2021

**A qualitative investigation of the impact of coronavirus disease  
2019 (COVID-19) on emergency physicians' emotional  
experiences and coping strategies**

Margaux Welsh

Hannah Chimowitz

Janvi D. Nanavati

Nathan R. Huff

Linda M. Isbell


Follow this and additional works at: [https://scholarworks.umass.edu/psych\\_faculty\\_pubs](https://scholarworks.umass.edu/psych_faculty_pubs)

---

ORIGINAL RESEARCH

The Practice of Emergency Medicine

# A qualitative investigation of the impact of coronavirus disease 2019 (COVID-19) on emergency physicians' emotional experiences and coping strategies

Margaux Welsh BS/BA | Hannah Chimowitz MS | Janvi D. Nanavati BS |  
Nathan R. Huff BA | Linda M. Isbell PhD 

Department of Psychological and Brain Sciences, University of Massachusetts Amherst, Amherst, Massachusetts, USA

**Correspondence**

Linda M. Isbell, PhD, Department of Psychological and Brain Sciences, University of Massachusetts Amherst, Amherst, MA, USA.  
Email: [lisbell@umass.edu](mailto:lisbell@umass.edu)

**Funding information**

The Agency for Healthcare Research and Quality, Grant/Award Number: R01HS025752; US Department of Health and Human Services awarded to Linda M. Isbell

## Abstract

**Study objective:** Throughout the coronavirus disease 2019 (COVID-19) pandemic, emergency physicians in the United States have faced unprecedented challenges, risks, and uncertainty while caring for patients in an already vulnerable healthcare system. As such, the pandemic has exacerbated high levels of negative emotions and burnout among emergency physicians, but little systematic qualitative work has documented these phenomena. The purpose of this qualitative investigation was to study emergency physicians' emotional experiences in response to COVID-19 and the coping strategies that they employed to navigate the pandemic.

**Methods:** From September 2020 to February 2021, we conducted semistructured interviews with 26 emergency physicians recruited from 2 early COVID-19 epicenters: New York City and the Metro Boston region. Interviews, coding, and analyses were conducted using a grounded theory approach.

**Results:** Emergency physicians reported heightened anxiety, empathy, sadness, frustration, and anger during the pandemic. Physicians frequently attributed feelings of anxiety to medical uncertainty around the COVID-19 virus, personal risk of contracting the virus and transmitting it to family members, the emergency environment, and resource availability. Emergency physicians also discussed the emotional effects of policies prohibiting patients' family members from entering the emergency department (ED), both on themselves and patients. Sources of physician anger and frustration included changing policies and rules, hospital leadership and administration, and pay cuts. Some physicians described an evolving, ongoing coping process in response to the pandemic, and most identified collective discussion and processing within the emergency medicine community as an effective coping strategy.

**Conclusions:** Our findings underscore the need to investigate the effects of physicians' pandemic-related emotional stress and burnout on patient care. Evidence-based

Supervising Editor: Catherine Marco, MD.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2021 The Authors. *JACEP Open* published by Wiley Periodicals LLC on behalf of American College of Emergency Physicians

interventions to support emergency physicians in coping with pandemic-related trauma are needed.

**KEYWORDS**

coping behavior, COVID-19 pandemic, emergency departments, emergency medicine, emotions, qualitative research

## 1 | INTRODUCTION

### 1.1 | Background

Research conducted before the coronavirus disease 2019 (COVID-19) pandemic demonstrates that emergency physicians experience negative emotions related to patient factors (eg, unpredictability, abusive behaviors, entitlement), hospital-level concerns (eg, overcrowding, understaffing, and limited resources), and system-level issues (eg, time constraints, lack of community resources).<sup>1</sup> Emergency physicians have recognized that these negative emotions may result in adverse effects on patient care and compromise patient safety.<sup>2</sup> Negative emotions can also impact provider well-being, leading to increased anxiety, depression, and burnout—which likewise can impact patient care.<sup>3</sup> Burnout—characterized by chronic exhaustion, cynicism, and inefficacy<sup>4</sup>—is prevalent among physicians,<sup>5</sup> with emergency physicians exhibiting the highest rates of burnout (ranging between 24.4% and 71.4%) among all medical specialties.<sup>5,6</sup>

The COVID-19 pandemic has amplified preexisting stressors, introduced unforeseen challenges to the emergency department (ED) environment, and triggered difficult emotional experiences for all healthcare workers. For example, a large study conducted in China during the early months of the COVID-19 outbreak found that healthcare workers caring for patients with COVID-19 reported experiencing symptoms of depression, anxiety, insomnia, and distress.<sup>7</sup> Studies of healthcare workers in the United States demonstrate similar trends, with a large majority experiencing higher than usual levels of stress attributed to COVID-19.<sup>8</sup> Among ED workers, pandemic-related anxiety and burnout have been prevalent.<sup>9</sup> Unfortunately, longitudinal work on the effects of previous outbreaks suggests that these negative effects persist long after the pandemic ends.<sup>10,11</sup>

### 1.2 | Importance

The COVID-19 pandemic has been immensely disruptive to health care, escalating safety risks to patients, physicians, and other healthcare workers.<sup>12</sup> Fear of infection, need for personal protection, increased workload, and shifts in clinical understanding have changed the landscape of emergency medicine and intensified the emotional burdens faced by healthcare workers. In work conducted before the pandemic, emergency physicians reported employing various coping and emotion regulation strategies to reduce risks to patient safety, including suppression, distraction, cognitive reappraisal, humor, sup-

port seeking, and taking breaks.<sup>1</sup> However, the coping strategies emergency physicians have available and employ to manage the unprecedented and prolonged emotional distress and anxiety experienced during the COVID-19 pandemic remain poorly understood. To address and mitigate the potentially chronic, negative impacts of the pandemic on emergency physicians, it is critical to gain a thorough understanding of physicians' experiences, emotional challenges, and coping mechanisms during the pandemic. We use an in-depth qualitative research approach to gain greater insight into the complex effects of COVID-19 on emergency physicians' emotional experiences and the coping strategies they have employed during the pandemic. Ultimately, through qualitative methods, this understanding can inform interventions geared at supporting emergency physicians in coping with pandemic-related trauma.

### 1.3 | Goals of this investigation

The purpose of the current study is to use qualitative methods to investigate the impact of COVID-19 on emergency physicians' emotional experiences and the specific coping strategies that physicians employed throughout the pandemic.

## 2 | METHOD

### 2.1 | Study design and setting

We conducted semistructured interviews with 26 attending emergency physicians practicing in 2 early COVID-19 epicenters the United States between September 2020 and February 2021: the Metro Boston region and New York City. All interviews were conducted over Zoom (Zoom Video Communications, Inc.) and lasted 20–60 minutes, with the majority lasting 30–40 minutes. The research team consisted of 4 women (M.W., H.C., J.N., and L.M.I.) and 1 man (N.R.H.). The interviewer (M.W.) was a research assistant with no previous interaction with participants. Because of COVID-19 work restrictions, the interviewer (M.W.) conducted all interviews from her home in a private room. We used a grounded theory approach<sup>13</sup> during data collection and analysis. The institutional review board at the University of Massachusetts Amherst approved the study protocol, and we used the Consolidated Criteria for Reporting Qualitative Research to guide collection, analysis, and reporting of the data.<sup>14</sup>

## 2.2 | Selection of participants

We recruited physicians from multiple healthcare institutions in the Metro Boston region and New York City based on the high volume of patients with COVID-19 in each city at the onset of the COVID-19 outbreak. Consistent with the grounded theory approach, we did not determine an a priori sample size but instead continued recruitment until theoretical saturation was achieved. Following the qualitative research guidelines, we anticipated that 20–30 participants would yield saturation.<sup>15</sup> Attending emergency physicians who were practicing in Boston or New York City during the first year of the COVID-19 pandemic were eligible to participate. Participants were recruited via an email invitation, in which providers were invited to participate in a study concerning their experiences during the COVID-19 pandemic. All attending emergency physicians practicing in a large Metro Boston region healthcare network received the email invitation from a physician in the same network via a listserv. In New York, the chairs of EDs at large hospitals were contacted, and those who agreed to circulate the study invitation did so at their institutions. Finally, we contacted 3 emergency physicians who hold leadership positions in the field and who also practice in New York City and invited them to participate; we also asked them to share our invitation with other emergency physicians at their institutions.

Before the interview, all participants signed an electronic informed consent form via DocuSign (DocuSign, Inc.) and completed a voluntary demographic questionnaire hosted on the Qualtrics platform (Qualtrics International, Inc). Participants were informed that their responses to the interview questions would remain confidential and would not be associated with their name or their institution. After consenting to participate, emergency physicians were emailed a secure Zoom link (Zoom Video Communications, Inc.) for a 1-on-1 interview from a private location of their choosing. Each participant was compensated \$100 for their participation either as an electronic gift card or by check sent via postal mail.

## 2.3 | Data collection and processing

The research team developed a semistructured interview guide based on knowledge of the literature and their prior qualitative research conducted with emergency physicians.<sup>1</sup> Consistent with the grounded theory approach, the guide was iteratively modified throughout data collection, with additional questions added as needed to explore topics that emerged throughout the interviews. See Appendix A for the interview guide. Throughout each interview, we asked physicians about the emotions they have experienced because of COVID-19 and the coping strategies that they have employed during the pandemic. We also included questions about narrative medicine<sup>16</sup> and its intersection with the pandemic for a separate project, although this is not the focus of the current article. The bulk of the questions were open-ended, and the interviewer asked further probing questions as needed to facilitate discussion.

### The Bottom Line

Throughout the coronavirus disease 2019 (COVID-19) pandemic, emergency physicians have faced unprecedented challenges, risks, and uncertainty. The pandemic has resulted in high levels of negative emotions and burnout among emergency physicians. This semistructured interview study found that emergency physicians reported heightened anxiety, empathy, sadness, frustration, and anger during the pandemic. Sources of physician anger and frustration included changing policies and rules, hospital leadership and administration, and pay cuts. Sources of physician anxiety included medical uncertainty with COVID-19, availability of hospital resources, concerns about contracting COVID-19, and transmitting it to family members.

## 2.4 | Primary data analysis

All interviews were video- and audio-recorded and transcribed using the Zoom videoconferencing service.<sup>17</sup> Transcriptions were deidentified, reviewed, and corrected as needed by at least 2 research assistants working independently to ensure accuracy. After this process, transcriptions were uploaded to NVivo qualitative analysis software,<sup>18</sup> which 2 independent research assistants (M.W. and J.N.) used for coding and analysis. Adhering to constant comparative analysis used in grounded theory, coding was conducted concurrently with data collection, and new codes were created as needed based on new patterns emerging from the data.

M.W. and J.N. independently coded the first 8 interviews and met with H.C. to clarify areas of confusion and resolve discrepancies. The remaining 18 interviews were split equally between M.W. and J.N. for independent coding using the agreed-upon codebook. Each coded interview was then reviewed by the other coder, who reviewed the initial coding for consistency and made note of any disagreements. Researchers corresponded via email and conducted biweekly meetings to discuss and reconcile any coding or to add new codes as needed. Codes were then carefully analyzed and collectively discussed to inform our results.

Our coding process followed the open, axial, and selective coding paradigm by Strauss and Corbin.<sup>13</sup> First, we identified open codes, which broadly categorize phenomena directly from the data. An example of an open code from our data was “Physician Empathy.” Open codes were then used to create axial codes, which grouped the open codes together to create larger categories of similar concepts. An example of an axial code created in the current analysis is “Emotions in Response to COVID-19”

Open and axial codes were continually identified and/or refined as data collection and analyses progressed and were compared across all transcripts. This repetitive, holistic process of constant comparison in qualitative analysis increases accuracy and rigor.<sup>13,14</sup> After open

**TABLE 1** Participant demographics

Demographic data	Metro Boston Region, n (%)	New York City, n (%)
Sex		
Male	10 (66.67)	4 (36.36)
Female	5 (33.33)	7 (63.64)
Race		
White	13 (86.67)	6 (54.55)
Black	1 (6.67)	1 (9.09)
Asian	1 (6.67)	3 (27.27)
Other (Middle Eastern)	–	1 (9.09)
Ethnicity		
Hispanic	1 (6.67)	2 (18.18)
Not Hispanic	14 (93.33)	9 (81.82)
Holds a leadership position	6 (40)	4 (36.36)

and axial coding, we generated selective codes that integrated axial codes to construct an overarching description of the data. Continuing with the same example, 1 selective code from our data was “Effects of COVID-19 on physician experiences and emotions.” The selective codes are described in the Results, which are organized by the 2 primary topics guiding our investigation.

### 3 | RESULTS

We interviewed a total of 26 physicians (15 Metro Boston region, 11 New York City;  $M_{\text{age}} = 39.23$  years,  $SD = 9.09$ ;  $M_{\text{experience}} = 7.65$  years,  $SD = 4.87$ ) from both academic and community hospitals. Demographic characteristics of the sample are displayed in Table 1.

#### 3.1 | Effects of COVID-19 on physicians' experiences and emotions

Physicians reported a broad range of negative emotions in response to the pandemic. Within the overarching theme of the impact of COVID-19 on physicians' emotional experiences, physicians described experiencing anxiety and uncertainty, feeling overwhelmed, a sense of disconnect and sadness, increased empathy, and feelings of frustration and anger. The causes and features of these emotional experiences are described in this section, and additional representative quotations for each along with respective subthemes are displayed in Table 2.

Emergency physicians in our sample reported a great deal of anxiety, oftentimes related to the unprecedented, uncertain circumstances in which the pandemic began. Physicians described an initial confusion about COVID-19 symptoms and appropriate precautions. Furthermore, with no clear treatment available at the onset of the pandemic, physicians described feeling anxious about not knowing how to identify or treat COVID-19. Fortunately, physicians widely agreed that

as their understanding of COVID-19 increased, their anxiety about diagnosing decreased. Many physicians noted that after a certain point in the pandemic, they assumed everyone had COVID-19, so identifying and diagnosing the disease no longer induced as much anxiety.

In addition to anxiety associated with diagnosis, some physicians reported feeling anxious about contracting the virus themselves. A few providers described feeling anxious about rapidly changing personal protective equipment (PPE) protocols: “there was a lot of anxiety about PPE, one day we were wearing regular masks. The next day we were wearing surgical masks. The next day, wearing N95s and then you're kind of just, like, well, yesterday I wore a regular mask, am I gonna get sick because I wasn't wearing that then?” (participant 15). Many physicians also expressed anxiety about spreading the virus to friends and family members, especially those who were not in positions where they could physically separate from family. Physicians described developing rigorous sanitation routines to keep COVID-19-exposed clothing or other materials away from their homes as much as possible. Lastly, physicians reported feeling anxious about their work environment, expressing worries over whether their hospital would have adequate resources. One physician described the mind-set of going to work as a “wartime mentality” (participant 20).

According to many physicians, this initial sense of uncertainty affected patients and physicians alike, with 1 physician stating, “The anxiety was palpable...through everyone” (participant 20). Although many discussed feeling and showing more empathy toward patients, providers felt that having their faces covered by PPE prevented them from being able to physically express empathy. Emergency physicians noted how the extensive coverage of colleagues', patients', and their own bodies and faces exacerbated the stress of the ED environment.

Often, wearing PPE resulted in an inability to recognize coworkers, eliminating 1 of the few constants of the ED. Furthermore, physicians described how PPE could impair communication and connection among care team members and patients. One physician noted, “I can't even tell which colleague is which with all the gear that people have to wear, much less communicate and demonstrate empathy with a patient” (participant 12). Physicians also described challenges understanding patients' nonverbal cues, describing how reading masked individuals' facial expressions was nearly impossible. To combat some of these difficulties in communication, physicians described shouting through their masks or getting an interpreter more often. Two physicians even mentioned at times removing their masks because they could not bear to talk to the patient through it, especially when delivering grim or difficult news.

Overall, physicians described how the changes put in place to minimize their chances of contracting COVID-19 resulted in medicine feeling more impersonal. In discussing new rules prohibiting family members from accompanying patients to the ED, physicians noted that this often resulted in an informational disadvantage, as families were no longer able to readily provide physicians with crucial information about the patient. This lack of immediate input from family members sometimes left physicians without important information regarding patients' normal functioning and living situations. Physicians noted that the absence of family members in the ED was especially

**TABLE 2** Effects of coronavirus disease 2019 on physician emotions and experiences: key quotes

Theme	Representative quote
<b>Anxiety</b>	
Exposing family members	"We [my husband and I] also lived in like a 700 square foot apartment and we can't isolate from each other... so then I started to feel guilty every day coming home and exposing him... it was kind of just this perfect storm of just anxiety and stress... it [COVID] took kind of away all the resources and support that you had... you did have to kind of figure it out on your own" (participant 15).
Medical uncertainty	"We chose a profession because we have the ability to heal people... we can do that really well because we have lots of science, lots of technology, lots of resources... and so I think we basically kind of got exposed because this was something brand new. And we had not figured out how to do that well yet. And I think that's where a lot of anxiety came from is getting to a place where people could die just because you weren't exactly sure what the right management was" (participant 5).
Resource availability	"I don't think I felt anxious about getting COVID. I felt anxious about not knowing how many patients were going to be in the emergency room, if this was the night... we ran out of ventilators, or if... we found somebody dead in a corner because there's just not enough providers" (participant 21).
<b>Overwhelmed</b>	
Patient volume and acuity	"We were literally busting. Busting our seams so to speak from an intensive care perspective, from the amount of acute very sick patient perspective, and from the perspective of, at that time, just being completely overwhelmed by how many people were dying, close to death all at the same time, and how quickly people would go from walking and talking to being completely, you know, nearing death" (participant 18).  "And it kind of felt like we were working so hard and so overwhelmed, and everybody was dying... a lot of times like we work hard and, and people get better and that that's the nice part of medicine... with COVID... there were pure weeks like where everybody just died... and that was very hard" (participant 22).
<b>Anger/frustration</b>	
Personal protective equipment	"I couldn't connect with my patients and I could not breathe through my equipment. I think I was mostly like angry, like... I was not happy at my work. It just was miserable, and it seemed like everything we were doing to help patients was not working. And you lose that connection and you're exhausted" (participant 11).
Managing patient expectations	"They had COVID, they felt awful, but they didn't need supplemental oxygen, or they needed two liters and we were able to coordinate for them to get that at home. Those people were not admitted and there was a frustration on both ends because patients, when they feel horrible, want to be in the hospital taken care of, and on my end, I want to do... what's best for patients, but also you have to account for the volume and the capacity to care for patients" (participant 12).
<b>Sadness</b>	
	"I think one of the hardest things for me was that family members of patients who were dying or near death and who could not be with their loved ones, because of restrictions in terms of visitation rights. That was really difficult because you were sometimes the last one that they spoke to and you were stretched to the limits of your mental and physical capacity" (participant 25).  "Sometimes it would just make me, you know, so sad that this was happening to so many people and there was so little that we could do to help them. And then... when I saw there are other doctors who are similar to me on the ventilator then, you know, that always hits you more because you're like, 'Oh, well, that could just be me'" (participant 14). <sup>a</sup>
<b>Empathy</b>	
	"They're probably going to die... in someplace that they did not want to be, in a foreign place. With foreigners around them, like no one familiar. So you definitely felt for them in that sense. You know, I wish... at least you have a family member holding your hand or you can say your goodbyes to somebody, but a lot of the times that didn't happen. So you definitely felt empathic, you felt sorry for them, you know, it's not the way you want to go" (participant 17).  "I think it's [wearing PPE] changed my behavior in that I try to be a lot more expressive with my eyes and like my physical touch with gloves on... making sure I hold [a patient's] hand when I'm talking to them if they're in a lot of distress and like trying to find ways to make them know that I have like physical empathy for them as well" (participant 11).  "That's... hard to get. Witnessing suffering is kind of part of our job. But just the volume of death... it never becomes easy to watch someone die, you know, no matter what people say. It's never easy, but then having that happen so many times a day in one day one shift" (participant 23).

COVID, coronavirus disease 2019; PPE, personal protective equipment.

<sup>a</sup>Quotation is representative of physician's experience of empathy in addition to sadness.

difficult when patients came in with an altered mental status or dementia. Physicians reported needing to call family members much more often, which was time-consuming and frequently unsuccessful. However, some physicians also spoke about nurses taking on this task: "I'll be honest with you, the nurses do a lot of that heavy lifting to get those family members on board" (participant 5). Physicians also described emotional burdens that resulted from policies keeping family members out of the ED. Without family members, who often provide much-needed company and emotional support to patients, physicians felt they frequently had to step into these roles. Physicians also recognized that nurses and staff regularly took on this responsibility as well. As 1 physician noted, "The absence of the family members...had consequences for the nurses, who then had to take up some of that emotional labor" (participant 13).

In addition to feeling that they had to carry the emotional burden that family members would normally absorb, physicians perceived that patients themselves felt much more anxious and isolated because of the combination of wearing increased PPE and the absence of their family members. One physician commented, "In the period before visitors were allowed, I think it was really hard on the staff and the nurses because they were having to really do a lot more emotional support for these patients who are essentially there alone" (participant 13). Physicians also spoke about the difficulty of witnessing patients dying without their family members present and reported feeling a heightened sense of empathy and sadness in these situations. Although some reported that their hospital introduced iPads (Apple, Inc.) so patients could FaceTime family members, physicians and other healthcare workers were often the only people physically with the patient in their last moments.

In addition to anxiety and sadness, physicians reported feeling anger and frustration about factors outside of their control. These factors included decisions made by hospital administrations and daily changes in policies and rules. Some physicians from New York City described feeling frustrated and angry with their hospital's administration for not being well prepared for the pandemic. One physician described how physicians and residents at their hospital had to buy their own PPE, and how as a result, they felt the administration did not care about the safety of its frontline workers. Physicians reported feeling particularly angry in response to pay cuts. One physician described the dip in morale that came with these cuts: "...it kind of further contributes to burnout when you're going to work, and you're getting your butt kicked and you're working so hard and you're exposing your family to COVID and you're like, I'm not making the money that I used to make" (participant 15). Other uncontrollable factors described as sources of frustration were an inability to provide certain treatments such as bilevel positive airway pressure and the increased amount of phone calls to families to retrieve necessary information.

A number of physicians also mentioned frustration directly related to patient care during the pandemic. When taking care of patients, physicians reported feeling frustrated that—because of the high patient volume and no clear treatment plan for COVID-19—they were not able to effectively do the job for which they had been trained. Physicians also identified non-emergent and demanding patients as a source

of frustration, even while recognizing that these patients are likely to be experiencing frustration themselves. Lastly, physicians described feeling frustrated about the lack of time they had to cope with all of the emotional stressors in the ED, with one provider remarking, "You have a patient that dies and you want to reflect on that, but you cannot because you have 30 other patients that you're taking care of" (participant 12).

### 3.2 | Physicians' coping strategies

When asked about how they had been coping with stressors during the pandemic, a handful of physicians immediately responded that they were coping poorly. However, most emergency physicians referred to at least 1 coping strategy that they had employed. These included seeking social support from ED colleagues, talking with a therapist or close others, using humor, and exercising. Representative quotations can be found in Table 3.

Nearly all of the participants mentioned that talking with coworkers, friends, and/or family helped them get through the struggles they faced during the pandemic. Collective discussion and processing among the emergency medicine community of physicians was highly valuable for many participants. Some described the pandemic bringing their teams closer together: "when you experience that kind of trauma together...it just bonds you together and...it's been very helpful to talk about it and to bring it out in the open and to connect over it, and to feel your pain and...to laugh and to cry and to just show your, you know emotions, be honest about it" (participant 25). As another physician put it, "When you get out there where you're able to communicate with someone else who gets it...you're able to kind of help each other out" (participant 8).

Some physicians reported not changing, or not needing to change, their coping strategies because of the pandemic. For example, 1 physician noted, "When you've kind of seen like the worst of the worst, there's not a lot that raises your blood pressure after that" (participant 18). Another physician described using a similar approach they always had in the ED: "I fell back on what I felt like my emergency medicine training taught me, which was you grin, you bear it, you push through" (participant 4). Multiple physicians felt that the experience of working many years in emergency medicine "actually helps numb up some of the, you know [emotion]" (participant 17).

However, other physicians described a transformation in their needs and approaches to coping. One participant mentioned receiving therapy specifically for COVID-related trauma, undergoing a therapeutic modality targeted at posttraumatic stress disorder that was made freely available to healthcare workers. Another stated, "We have witnessed more patients suffering, and therefore it has affected us more. With COVID, I have been more open to explore expressing my feelings...before I used to leave everything at work, but now, since COVID I even come talk to my wife" (participant 23).

Other coping strategies physicians discussed included detaching from emotional events, using humor, writing, speaking to a therapist, and exercising. Physicians described coping mechanisms evolving over time, such that the initial stage of the pandemic was a matter of

**TABLE 3** Provider coping strategies: key quotes

Theme	Representative quote
Social support from colleagues	<p>“Mostly trying to, to commiserate with, with others that are in the same situation as I am. But that’s also difficult because we like doing fewer things with other people than we were doing before outside of the hospital, right. And so, I would say that like trying to maintain relationships...that allow you to relieve that stress and anxiety has been important” (participant 3).</p> <p>“And that WhatsApp group I think probably literally saved people’s lives. Saved people from losing it. We were able to cry together there, we were able to commiserate, we were able to laugh, we were able to live...just knowing that you’re not the only one going through it...that you’re not the only one who is clueless on how to manage this person who literally is dying right in front of you. Finding out what are people doing? How are we to cope with this, teaching each other? It was...that was our wellness group right there” (participant 18).</p> <p>“This was like one tragedy after another, you’d hear relatives are dying, you’d hear your colleagues are dying. You’re like, scared about yourself, you’re scared about your family. So those are things you had to...discuss with your colleagues and you know we were kind of, everyone was each other’s crutch, in other words, so they would kind of support each other...we had to have a good social system” (participant 17).</p>
Social support from others	<p>“I talked a lot with, with folks...commiserate with, with people at work, commiserate with my friends back home, and then sharing my story, certainly helps...I think just talking about it helps” (participant 6).</p> <p>“I think I’m closer to my family now than I ever have been, you know, since the beginning of my medical training, just because I realized that’s where I need to draw strength from. So that’s where I’ve gone” (participant 5).</p>
Humor	<p>“I think humor. Sometimes like making light of the chaos that was around us. It’s not the patients, not the severity that was going on, but just the chaos of how protocols are changing every day and you know how ridiculous it was but how necessary it was, was also an important coping mechanism” (participant 11).</p>
Exercise and sleep	<p>“I go running and try to stay healthy, mentally, and physically” (participant 25).</p> <p>“I’ve tried to be very mindful of...things that are just important to my own health and wellness and for me that’s making sure every night I’m sleeping at least six hours...and you know having some time to exercise every day, and those are the two things that I feel like if I’m able to maintain those, then I’m usually able to maintain at least a good portion of my own wellness” (participant 14).</p>

survival: “everybody just kept kind of working and just finishing, and then it was after the fact, you started thinking back at really how awful it was...like 800 people were dying a day...if you think about that you, you couldn’t function...you just had to keep going back to work, and keep doing what you had to do” (participant 22). A few physicians also acknowledged that their coping process is ongoing and will continue indefinitely. One physician expressed this sentiment, saying, “I don’t know how long I think it’ll take for me to fully process it or to kind of feel completely back to normal...as much reflection as I’ve tried to do...I don’t know how long it’ll take for me, and what I’ve seen, and what I’ve had to go through, to get completely over it” (participant 15).

#### 4 | LIMITATIONS

The broad themes that emerged from our data come from interviews with a diverse sample of physicians who varied in leadership and ED experiences, age, and institutional setting. Although this variability increases confidence in the transferability of our themes to other ED settings and contexts, future work is needed to establish this. Notably, our work focused on 2 early epicenters of the pandemic in the Northeast United States: New York City and the Metro Boston region. These areas were selected because of the early (March and April 2020) and rapid spread of COVID-19 in their populations relative to other large urban areas in the United States,<sup>19</sup> but this criteria for sampling makes

transferability to regions that were affected by the pandemic to a lesser degree or at a later time a topic for future research. For example, the lessons from these early frontline workers and advances in the scientific understanding of the disease may have mitigated stressors and anxieties in other geographical regions. As collective knowledge about the COVID-19 virus has progressed, it is likely that much of the acute anxiety and fear providers experienced during the early stages of the pandemic diminished.

Given that the pandemic has had an uneven impact on different areas at different times, future work with emergency physicians in other parts of the United States, as well as in other countries, is needed to establish the extent to which the current themes are transferable to a broader range of ED settings and healthcare workers (eg, ED nurses and ICU providers). In addition, because of our sampling timeframe, these qualitative interviews offer only a partial view of physicians’ experiences during a 6-month period. Physicians’ emotional experiences and coping strategies likely evolved alongside the publication of new research findings, media coverage and press briefings, emergence of new severe acute respiratory syndrome coronavirus 2 variants (SARS-CoV-2), and vaccination rollouts.

An additional limitation of our work is the possibility that our recruitment method may have resulted in selection bias, as physicians interested in discussing their experiences during the pandemic may have been more likely to participate. Finally, as with most qualitative research methods, the interviews reflect self-reported behavior



and attitudes, which may be limited by incomplete recollection, hindsight bias, or social desirability bias. To combat some of these concerns (eg, social desirability), participants were assured that interviews were confidential and would not be associated with their names or the institutions where they worked.

## 5 | DISCUSSION

COVID-19 upended operations in the ED, shaking physicians of their usual routine. Throughout interviews conducted during the COVID-19 pandemic, emergency physicians working on the frontlines of hospitals serving 2 large urban areas in the United States described experiencing significant practical and emotional challenges. For example, physicians described how the constant use of PPE resulted in both physical discomfort and negative emotional experiences. In line with prior evidence,<sup>20</sup> physicians felt that PPE hindered their ability to communicate and connect with patients, which in turn caused them sadness and frustration. Given the extensive evidence of a positive relationship between physician communication and patient outcomes,<sup>21</sup> and taking into consideration the needs of patients with hearing loss, it is a priority for healthcare systems to adopt innovative solutions (eg, clear face masks<sup>22</sup>) to improve physician–patient communication.

Physicians felt caring for patients without input from patients' family members was at times unsafe, as physicians proceeded without vital information. Reflecting on the loneliness of patients suffering without their families, physicians described feelings of heightened empathy and pain. The overwhelming amount of patients who were very sick, combined with the lack of available treatment and rapidly changing hospital policies, left physicians feeling helpless and anxious as well as physically and emotionally drained. Overall, the emotions that physicians experienced in the ED during the COVID-19 pandemic were not new emotional experiences but, rather, they were felt more frequently and intensely.

Physicians' emotions were heightened because of various institutional and patient level factors, and physicians reported having limited time to process these feelings. Feeling physically and emotionally exhausted, unable to connect with patients, and helpless in treating patients are all qualities exemplifying burnout, which is known to disproportionately affect emergency physicians.<sup>6</sup> Our data demonstrate that emergency physicians, who are already at an increased risk of burnout, feel that COVID-19-related stressors exacerbate their risks.

In many respects, the results of our qualitative study converge with previous findings obtained using largely survey-based methods to examine the psychological effects of the COVID-19 pandemic on healthcare workers. These studies find elevated rates of anxiety, depression, and stress among healthcare workers attributed to the COVID-19 pandemic.<sup>23–27</sup> Sources of anxiety previously reported, such as the possibility of disease transmission to family members, patient volume, and personal safety, echo some of those identified in the current findings. Our results also shed light on the emotional impact of family visitation restrictions on emergency physicians, a less frequently noted effect of the COVID-19 pandemic on physician

well-being. Some scholars have argued that healthcare workers that are at greater risk for elevated psychological distress because of the pandemic—nurses and frontline workers who spend the most time delivering direct patient care<sup>7,28,29</sup>—may be more likely to experience vicarious trauma while caring for and providing emotional labor for patients who are sick in the absence of their families.<sup>30</sup> Although we do not directly assess trauma experiences among our physicians, our results are consistent with this possibility.

There were numerous emergency physicians in our sample who expressed frustration and anger because their hospital systems were unprepared for the pandemic, a finding that is also consistent with prior research. Insufficient institutional preparedness has been associated with psychological harm to healthcare workers during previous pandemics,<sup>31</sup> and a recent study conducted in Ghana found that low perceived preparedness to respond to COVID-19 among healthcare workers was associated with increased stress and burnout.<sup>32</sup> Anger among emergency physicians in response to pay cuts during the COVID-19 pandemic is less documented in the literature; although health professionals in Pakistan reported distress over their financial instability that occurred as a result of COVID-19,<sup>27</sup> another study conducted in Pennsylvania found no increase in emergency physicians' financial concerns.<sup>33</sup> Even so, an international survey found that >60% of US physicians experienced a decline in income since the start of the pandemic,<sup>34</sup> and our findings suggest some physicians found pay cuts to be a source of anger.

Our findings documenting the coping strategies that physicians employed to manage pandemic-related emotions and stress are consistent with some research conducted near the onset (April 2020) of the COVID-19 pandemic.<sup>29,30,35</sup> Among Japanese healthcare workers, lower levels of communication with friends and higher levels of anxiety were related to poorer mental health, suggesting that coping with the pandemic by communicating with close others may buffer healthcare worker mental health and well-being.<sup>35</sup> In a sample of healthcare workers in New York, 86% reported engaging in at least 1 coping behavior to manage stress during the pandemic, with physical activity/exercise being the most commonly endorsed behavior (59%).<sup>30</sup> Physicians in our study also reported engaging in physical exercise, and a small minority did not identify any specific coping strategies or changes in coping. Although our results echo previous evidence that family support is a common coping strategy for healthcare workers during the COVID-19 pandemic,<sup>36</sup> our findings also shed light on the important role that social support within the emergency medicine community plays for emergency physicians coping with pandemic-related stress.

None of the physicians in our study reported using maladaptive coping strategies (eg, excessive alcohol or substance use) to manage pandemic-related stressors. This finding may accurately reflect our physicians' experiences, or it may reflect a social desirability bias in reporting such behaviors during a face-to-face interview—particularly given that a recent report revealed increased alcohol consumption among emergency physicians since the COVID-19 began; more than a third (34%) of those surveyed reported drinking alcohol to cope with burnout.<sup>37</sup> Using alternative methods to assess maladaptive coping

behaviors is important for future research given the adverse effects that these strategies can have on physician burnout and well-being.

There is an urgent need for future investigations of burnout among emergency physicians, as well as multipronged interventions that can help to relieve and heal these feelings, and specific attention to how the pandemic has amplified preexisting stressors and created new stressors. Fortunately, scholarship and research conducted during and after previous epidemics and pandemics highlight potential approaches to preventing, reducing, and managing pandemic-related stress and burnout among healthcare workers. For example, simply raising awareness of potential pandemic-related trauma, stress, and burnout may serve to reduce stigma associated with these conditions, increase support seeking, and increase resilience among healthcare workers.<sup>38,39</sup> Healthcare institutions can take measures to reduce burnout by including regular facilitated group discussions and reducing workload through scheduling changes.<sup>40</sup> Scholars have also recommended that healthcare workers practice breathing exercises and other mindfulness “micropractices” to reduce anxiety, and that employers make telehealth services available to facilitate peer support and occupational counseling.<sup>41,42</sup>

Insights from emergency physicians in our sample identify several promising strategies available to healthcare workers and institutions. Talking with other people undergoing similar experiences provided release and comfort to physicians, reminding them that they are not alone. Going forward, creating safe spaces for emergency physicians to freely share their experiences and feelings about the COVID-19 pandemic could help physicians cope with negative emotions and stressors, potentially attenuating burnout. Although much of the acute anxiety during the early stages of the pandemic has dissipated for healthcare workers, consistent and clear communication between hospital administration, ED staff, physicians, and nurses has the potential to alleviate lingering worries and accommodate the emotional and physical needs of healthcare workers. Lastly, empirically assessing the efficacy of new, COVID-19-specific interventions is essential. A recent review of organizational interventions implemented to help healthcare workers cope with psychosocial challenges related to COVID-19 suggests that the limited number of documented protocols and the heterogeneity of existing protocols results in an inability to determine if some programs offer distinct benefits.<sup>43</sup>

In sum, before the emergence of COVID-19, the ED was known to be an emotionally evocative setting for physicians and other healthcare workers.<sup>1,2</sup> Through qualitative interviews with emergency physicians, we found that the pandemic has exacerbated many of these emotions, making experiences of sadness, empathy, anger, frustration, and anxiety more intense and frequent. The prolonged experience of negative emotions gives rise to burnout, and our data illuminate how the pandemic has amplified these malignant processes for emergency physicians. In summarizing physicians’ own insights, it is clear there is an urgent need to provide all ED staff with adequate tools and support to cope with their experiences. Doing so has the potential to better prepare EDs to care for its physicians and other staff, and by extension its patients, both during normal ED operations and any future global health crises.

## ACKNOWLEDGMENTS

This project was funded by the Agency for Healthcare Research and Quality (AHRQ) (Grant R01HS025752), US Department of Health and Human Services (HHS) awarded to Linda M. Isbell. The authors are solely responsible for this document’s contents, findings, and conclusions, which do not necessarily represent the views of AHRQ. Readers should not interpret any statement in this report as an official position of the AHRQ or of the HHS.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## AUTHOR CONTRIBUTIONS

Margaux Welsh designed the project in close collaboration with Linda M. Isbell and conducted all interviews. Linda M. Isbell and Hannah Chimowitz managed the project. Margaux Welsh and Janvi D. Nanavati analyzed the qualitative data under the supervision of Hannah Chimowitz. Margaux Welsh, Hannah Chimowitz, and Nathan Huff drafted the manuscript for publication. Margaux Welsh, Hannah Chimowitz, Janvi D. Nanavati, Nathan R. Huff, and Linda M. Isbell contributed to the revision, editing, finalization, and approval of the final version of the manuscript.

## ORCID

Linda M. Isbell PhD  <https://orcid.org/0000-0003-3467-3548>

## REFERENCES

1. Isbell LM, Boudreaux ED, Chimowitz H, Liu G, Cyr E, Kimball E. What do emergency department physicians and nurses feel? A qualitative study of emotions, triggers, regulation strategies, and effects on patient care. *BMJ Qual Saf.* 2020;29(10):1-2.
2. Isbell LM, Tager J, Beals K, Liu G. Emotionally evocative patients in the emergency department: a mixed methods investigation of providers’ reported emotions and implications for patient safety. *BMJ Qual Saf.* 2020;29(10):1-2.
3. Croskerry P, Abbas A, Wu AW. Emotional influences in patient safety. *J Patient Saf.* 2010;6(4):199-205.
4. Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol.* 2001;52:397-422.
5. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014 [published correction appears in *Mayo Clin Proc.* 2016;91(2):276]. *Mayo Clin Proc.* 2015;90(12):1600-1613.
6. Verougstraete D, Hachimi-Idrissi S. The impact of burn-out on emergency physicians and emergency medicine residents: a systematic review. *Acta Clin Belg.* 2020;75(1):57-79.
7. Lai J, Ma S, Wang Y, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open.* 2020;3(3):e203976.
8. Huffman EM, Athanasiadis DI, Anton NE, et al. How resilient is your team? Exploring healthcare providers’ well-being during the COVID-19 pandemic. *Am J Surg.* 2021;221(2):277-284.
9. Rodriguez RM, Montoy JCC, Hoth KF, et al. Symptoms of anxiety, burnout, and PTSD and the mitigation effect of serologic testing in emergency department personnel during the COVID-19 pandemic. *Ann Emerg Med.* 2021;78(1):35-43.e2.
10. Maunder RG, Lancee WJ, Balderson KE, et al. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. *Emerg Infect Dis.* 2006;12(12):1924-1932.

11. Lancee WJ, Maunder RG, Goldbloom DS, et al. Prevalence of psychiatric disorders among Toronto hospital workers one to two years after the SARS outbreak. *Psychiatr Serv.* 2008;59(1):91-95.
12. Gandhi TK, Singh H. Reducing the risk of diagnostic error in the COVID-19 era. *J Hosp Med.* 2020;15(6):363-366.
13. Strauss A, Corbin JM. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* 2nd ed. Thousand Oaks, CA: SAGE; 1998.
14. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care.* 2007;19(6):349-357.
15. Creswell JW. *Qualitative Inquiry and Research Design: Choosing Among Five Traditions.* Thousand Oaks, CA: SAGE; 2007.
16. Charon R. Narrative medicine: attention, representation, affiliation narrative medicine: attention, representation, affiliation. *Narrative.* 2005;13(3):261-270.
17. Zoom Videoconferencing Software [Computer Software]. Version 5.3.0. San Jose, CA: Zoom Video Communications, Inc; 2013.
18. NVivo [computer software]. Version 12. Melbourne, Australia: QSR International, 2018.
19. Lutz E, Aufrichtig A, Smart C, et al. A guide for COVID-19 risk in your county. *The New York Times.* Updated July 12, 2021. Accessed July 13, 2021.
20. Hampton T, Crunkhorn R, Lowe N, et al. The negative impact of wearing personal protective equipment on communication during coronavirus disease 2019. *J Laryngol Otol.* 2020;134(7):577-581.
21. Institute for Communication in Healthcare. Impact of communication in healthcare. Accessed July 9, 2021.
22. Chodosh J, Weinstein BE, Blustein J. Face masks can be devastating for people with hearing loss. *BMJ.* 2020;370:m2683.
23. Shreffler J, Petrey J, Huecker M. The impact of COVID-19 on healthcare worker wellness: a scoping review. *West J Emerg Med.* 2020;21(5):1059.
24. Liu C-Y, Yang Y-Z, Zhang X-M, et al. The prevalence and influencing factors for anxiety in medical workers fighting COVID-19 in China: a cross-sectional survey. *Epidemiol Infect.* 2020;148:e98.
25. Lu W, Wang H, Lin Y, et al. Psychological status of medical workforce during the COVID-19 pandemic: a cross-sectional study. *Psychiatry Res.* 2020;288:112936.
26. Cai H, Tu B, Ma J, et al. Psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 during the outbreak of coronavirus disease 2019 (COVID-19) in Hubei, China. *Med Sci Monit.* 2020;26:e924171.
27. Sethi BA, Sethi A, Ali S, Aamir HS. Impact of Coronavirus disease (COVID-19) pandemic on health professionals. *Pak J Med Sci.* 2020;36(COVID19-S4):S6-S11.
28. Liu Z, Han B, Jiang R, et al. Mental health status of doctors and nurses during COVID-19 epidemic in China. (3/4/2020). Available at SSRN: <https://ssrn.com/abstract=3551329> or <https://doi.org/10.2139/ssrn.3551329>.
29. Croghan IT, Chesak SS, Adusumalli J, et al. Stress, resilience, and coping of healthcare workers during the COVID-19 pandemic. *J Prim Care Community Health.* 2021;12:21501327211008448.
30. Shechter A, Franchesca D, Nathalie M, et al. Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *Gen Hosp Psychiatry.* 2020;66:1-8.
31. Belfroid E, van Steenberg J, Timen A, et al. Preparedness and the importance of meeting the needs of healthcare workers: a qualitative study on Ebola. *J Hosp Infect.* 2018;98(2):212-218.
32. Afulani PA, Gyamerah AO, Nutor JJ, et al. Inadequate preparedness for response to COVID-19 is associated with stress and burnout among healthcare workers in Ghana. *PLoS One.* 2021;16(4):e0250294.
33. Fitzpatrick K, Patterson R, Morley K, Stoltzfus J, Stankewicz H. Physician wellness during a pandemic. *West J Emerg Med.* 2020;21(6):83-87.
34. Kane L. Medscape US and international physicians' COVID-19 experience report: risk, burnout, loneliness. *Medscape.* Published 2020. Accessed September 11, 2021. <https://www.medscape.com/slideshow/2020-physician-covid-experience-6013151#25>
35. Tahara M, Mashizume Y, Takahashi K. Coping mechanisms: exploring strategies utilized by Japanese healthcare workers to reduce stress and improve mental health during the COVID-19 pandemic. *Int J Environ Res Public Health.* 2020;18(1):131.
36. Htay MNN, Marzo RR, Bahari R, et al. How healthcare workers are coping with mental health challenges during COVID-19 pandemic? - A cross-sectional multi-countries study. *Clin Epidemiol Glob Health.* 2021;11:100759.
37. Kane L. Death by 1000 cuts: Medscape national physician burnout and suicide report 2021. *Medscape.* Published 2021. Accessed September 11, 2021. <https://www.medscape.com/slideshow/2021-lifestyle-burnout-6013456>
38. Schreiber M, Cates DS, Formanski S, King M. Maximizing the resilience of healthcare workers in multi-hazard events: lessons from the 2014-2015 Ebola response in Africa. *Mil Med.* 2019;184(suppl 1):114-120.
39. Sultana A, Sharma R, Hossain MM, Bhattacharya S, Purohit N. Burnout among healthcare providers during COVID-19: challenges and evidence-based interventions. *Indian J Med Ethics.* 2020;V(4):1-6.
40. De Simone S, Vargas M, Servillo G. Organizational strategies to reduce physician burnout: a systematic review and meta-analysis. *Aging Clin Exp Res.* 2021;33(4):883-894.
41. Sasangohar F, Jones SL, Masud FN, Vahidy FS, Kash BA. Provider burnout and fatigue during the COVID-19 pandemic: lessons learned from a high-volume intensive care unit. *Anesth Analg.* 2020;131(1):106-111.
42. Fessell D, Cherniss C. Coronavirus disease 2019 (COVID-19) and beyond: micropractices for burnout prevention and emotional wellness. *J Am Coll Radiol.* 2020;17(6):746-748.
43. Buselli R, Corsi M, Veltri A, et al. Mental health of health care workers (HCWs): a review of organizational interventions put in place by local institutions to cope with new psychosocial challenges resulting from COVID-19. *Psychiatry Res.* 2021;299:113847.

## AUTHOR BIOGRAPHY



Margaux Welsh, BS/BA, is a Research Data Specialist at Dana-Farber Cancer Institute in Boston, Massachusetts.

## SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

**How to cite this article:** Welsh M, Chimowitz H, Nanavati JD, Huff NR, Isbell LM. A qualitative investigation of the impact of coronavirus disease 2019 (COVID-19) on emergency physicians' emotional experiences and coping strategies. *JACEP Open.* 2021;2:e12578. <https://doi.org/10.1002/emp2.12578>