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RESEARCH ARTICLE

"The Weight of the Pager on My Hip": Lightening the Load of Empathy on Critical Care Physicians by Understanding its Limitations, A Qualitative Study

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ABSTRACT:

Introduction: Empathy improves patient outcomes and increases perception of physician competence. However, empathy may contribute to biased decision-making and provider burnout. To help providers harness the benefits of empathy without the pitfalls, comprehensive knowledge about the practice of empathy is needed – particularly in high-stress contexts, such as in critical care. This qualitative study explores how critical care physicians experience empathy in intensive care units and how this might inform the medical education of critical care physicians throughout their training.

Methods: Working from a constructivist orientation, we engaged in thematic analysis of semi-structured interviews with critical care physicians. We asked participants to describe their personal experiences of empathy including how they handled events requiring empathy, managed empathic distress, and reframed their understanding of empathy over time. Data analysis followed the six steps of thematic analysis and used Hoffman's Theory of Empathy to further inform our understanding of the data.

Results: We identified limitations of empathy in the intensivist experience, which were consistent with Hoffman's theory of empathy. This theory describes arousal, habituation, and bias which were prevalent in the data. Further, intensivists altered their behavior due to these limitations and to manage empathic distress. Additionally, burnout as a consequence of empathy was identified, though interviewees discussed prevention methods and the development of resilience.

Discussion: Empathy and empathic distress among intensivists have been understudied in the literature thus far. Our study reveals that critical care physicians acutely experience limitations of empathy to include over-arousal, habituation, and bias—all of which impact interactions with patients, physician stress, and physician burnout. The knowledge that fully trained intensivists struggle with the limitations of empathy has implications to all stages of physician education from medical student through continuing medical education for attendings since all must learn and practice the empathic skills required to optimize patient care and maintain their own wellness.

Keywords: Empathy, Burnout, Bias, Intensive Care Unit, Continuing Medical Education

Introduction

Critical care medicine is at a crossroads. In 2019, researchers reported that many intensivists were dissatisfied with their workload and work-life integration; a majority reported burnout symptoms (i.e., the combination of emotional exhaustion, depersonalization, and a low sense of personal accomplishment [1]) more than once a month[2]. Clearly, burnout — was a significant problem for intensivists before the COVID-19 pandemic [3-5]. Since the onset of the pandemic, burnout has been increasing as caseloads have accelerated [6-9]. This trend could have profound consequences for the wellness of critical care physicians which we will hereon refer to as intensivists and for the sustainment of our workforce, as research has shown that physicians suffering from burnout are more likely to retire early [10]. The profession now stands at a definitive juncture: either we continue with current practices and the resultant trajectory towards ever-rising burnout rates and the associated increased risk of thinning intensivist ranks, or we change course. Such a change will require intensivists to chart a new path towards sustaining a force of healthy, satisfied, and productive intensivists. This new direction will take considerable effort and time – resources that are in short supply for these physicians. Intensivists need relief now, so we ask: what can be done for intensivists in the short term while the profession decides on, and hopefully acts on, this course correction? One potential starting point lies in our practice of empathy.

There is a growing body of literature suggesting that empathic practices are tied to experiences of burnout in trainees and practicing physicians.[11,12] Empathy, when not practiced effectively, can have significant impact including: an increased risk of provider burnout, a potential inequity in patient care due to provider bias, and impaired decision-making [13]. Because of empathy, intensivists can face a double bind – either they connect with their patients and risk becoming worn down, or they preserve themselves by purposefully withholding empathy in patient interactions [14]. Research in other clinical contexts, such as emergency medicine [15], has highlighted similar associations between empathy and provider wellness. Furthermore, Gleichgerrcht and Decety [11] found that personal distress experienced by physicians was related to empathic distress. Hoffman discusses empathic distress as an observer becoming distressed when they witness the distress of another. He describes empathic distress as a prosocial emotion that is associated with helping for which observers feel better after helping.[16] Intensivists, however, for reasons outside of their control, may not always be able to help their patients and relieve their empathic distress. In this case, empathic distress may serve as as "a strong aversive and self-oriented response to the suffering of others, accompanied by the desire to withdraw from a situation to protect oneself from excessive negative feelings" [17]. As this evidence suggests, addressing physician engagement in empathy is one starting point for mitigating burnout.

To minimize the deleterious impacts of empathy on intensivists, we need to understand how this specific subset of physicians experience the phenomenon of empathy with an emphasis on the negative aspects of the practice of empathy. Regrettably, this is a gap in the current body of literature. As such, the aim of the study was to explore the following questions: Do intensivists experience negative aspects during their empathic patient engagements? Do they alter their behaviors and practices to minimize negative consequences of these aspects? Do these behavioral changes impact burnout?

Methods

Working from a constructivist orientation [18], we engaged in thematic analysis of one-on-one participant interviews [19]. Thematic analysis is a flexible qualitative research method that enables researchers both to describe the phenomenon that is the focus of the data and to interpret those data to better understand the experiences of individual participants and the social, cultural, and structural contexts that shape or otherwise impact those experiences [20]. We constructed this thematic analysis to complement our theory-informing inductive analysis research design[21]. We engaged in the research with an exploratory purpose. We kept several theories related to burnout, empathy, and socio-cultural learning in mind as we engaged in cycles of reading and reflecting, re-reading, and re-reflecting on the data. During this iterative process, we identified Hoffman's theory as an interpretive lens that could usefully inform our analyses.

PARTICIPANTS

We engaged in purposive sampling [22] to identify study participants and so deliberately solicited participation from individuals who have insight into experiences of empathy as physicians working in the ICU and who work in academic medical centers, and therefore engaged with students, residents, and critical care fellows. This nonrandom sampling technique requires the research team to use their expertise and knowledge of existing research to identify information-rich cases and participants [22]. We determined that exploring the experiences of attending-level medical intensivists across the

United States in academic hospital settings would provide the greatest insights for our research. Intensivists were eligible for participation if they worked in academic adult critical care units in private sector hospitals and/or military care facilities. We restricted our sample to medical intensive care unit (ICU) attendings, thereby excluding other ICU settings because there are significant contextual differences in the types of patient engagements – and therefore empathetic engagements – in other settings (e.g., pediatric ICU involves empathetic interactions with patients and parents). Within this setting, we sought out intensivists with training in Pulmonary-Critical Care Medicine and Critical Care Medicine. We sought intensivists at varying career stages. Some participants were novices (i.e., recently graduated out of fellowship with less than a year of experience as an attending). In contrast, others were seniors (i.e., over twenty years of experience). We did not include medical trainees because we were primarily interested in providers who work full-time in ICUs. We also purposefully sampled for a population that was representative of the population of intensivists nationwide, and so we sought to have approximately 30% women and 70% men [23]. Of note, the percentage of underrepresented-in-medicine providers in critical care is particularly low [23,24], so our sample did not include many of these providers for interview.

DATA COLLECTION

In March and April 2021, one research team collaborator (ES), who was trained through graduate course work on conductive interviews and who had no prior relationships with the participants, conducted online, individual, semi-structured interviews with the ten participants. An interview guide was created preliminarily by the intensivist on our team and was then edited by all other team members. The guide was iteratively changed based on interview experiences. The interview guide asked participants to define and describe their personal experiences of empathy in the ICU. Interview questions also probed for how participants had learned about and/or reframed their understanding of empathy over time, about significant events where empathy played an important role, and how they manage moments of empathetic distress. (See supplemental materials for the full interview guide). Interview video calls (conducted via Zoom), which lasted between 50-70 minutes, were recorded and transcribed verbatim. One research team member (ES) verified the transcripts for accuracy and removed all participant identifiers from the documents. It should be noted that the interviews took place shortly after a new Federal government administration took over, vaccines started becoming available, and cases were at a low point during the COVID-19 pandemic [25].

DATA ANALYSIS

Data analysis followed the six steps to thematic analysis:

Step 1: Familiarize yourself with the data. Three researchers (JB, ES, & LJ) independently read and re-read two transcripts to develop initial impressions of the data. Each researcher read 2 different transcripts from the data set; therefore, in this step, 6 of the 10 transcripts were reviewed.

Step 2: Generating initial codes. These researchers (JB, ES, & LJ) individually created lists of all data items that could form the basis of initial codes. They then met to discuss connections between data items, ask questions about aspects of the transcripts, and vet preliminary ideas. Through discussion, the researchers consolidated all initial codes into a set of 14 focused codes. Next, two other members of the research team (HSM and LV) independently read and coded one transcript each from the remaining un-coded 4 transcripts, testing the codebook for completeness and clarity. At this point, 8 of the 10 transcripts had been read and saturation had been reached. These transcripts were used to inform the construction and refinement of codes. The entire research team then met to discuss the data and debate changes in the coding structure. After this check, the team used the codebook to re-code the interviews utilized in creating the code. A new codebook was created to reflect the consensus developed during this meeting. The study's primary investigator (JB) then read the entire data set and applied the codes to all 10 transcripts and confirmed saturation since no new codes were identified.

Step 3: Searching for themes. Once the data coding was completed, the full research group met at regular intervals to review and revise their initial interpretations and to discuss preliminary themes that were of broader significance than individual codes, and that could bring codes together in meaningful ways. Initially, the research team attempted to construct a novel theory of empathy which did not resonate with all team members. During continuing conversations, the researchers debated what theory might further inform our understanding of the data or if we might needed to alter our own theory based on our codes and themes. We identified Hoffman's theory, specifically the limitation of bias (Hoffman, 2001), as offering an analytical lens that resonated with our interpretations and fit the data coding and themes that we had generated from our interviews.

Step 4: Reviewing themes. The research team met to review the coding to ensure that all coded data placed within an individual theme fit squarely with Hoffman's theory and to review the thematic map to ensure that all the themes we constructed fully and accurately represented the entirety of the data set (i.e., all 10 interviews).

Step 5: Defining and naming themes. This work - carried out by JB, ES, LJ, and HM - involved thoroughly reviewing Hoffman's theory and the themes generated from the data to construct names and definitions for each theme, as well as identifying illustrative data excerpts.

Step 6: Producing the manuscript. Three investigators (JB, ES, LJ) collaboratively constructed the first draft of the manuscript. It was then reviewed and revised by all members of the research team. Some individual meetings were held between the primary investigator and collaborators (e.g., between JB & LV) to engage in clarifying discussions to ensure that edits aligned with the team's final interpretations.

ETHICAL APPROVAL

The Walter Reed National Military Medical Center IRB approved this study (IRB #WRNMMC-EDO-2020-0583).

REFLEXIVITY

In qualitative research methodologies, the research team must continually consider and reflect on how their unique subjectivities inform the study practices, including data analysis. Our team recognizes that our own experiences, backgrounds, and interests inherently shaped how we analyzed participants' experiences. The primary author (JB) is a military psychiatrist and medical intensivist who works as a clinical educator and mentor to residents and medical students in ICU settings. LV is a qualitative researcher working in a medical school, where she is a professor of medicine. HM is an Associate Professor and Associate Director of Student Affairs in Health Professions Education (HPE).

As a team, and throughout the research process, we reflected on how our different backgrounds and shared interest in empathy in medicine influenced our interpretations. We continually discussed and debated whether our data reinforced or upended assumptions about the utility and perceptions of empathy in the ICU.

Results

POPULATION

We emailed eleven physicians who were actively engaged in academic leadership in critical care medicine and met our sampling purposes; ten intensivists consented to participate verbally and via email. Participants had a collective 116 years of practice as attendings (average 11.6 years; median 11 years; range 1-29 years). 30% identified as women. The percentage identifying as White was 90%; additionally, there were 10% who identified as Asian/Pacific Islander. We will present the remainder of our findings in 3 parts. First, we will discuss how participants in our study described their experience of empathy. Next, we will describe how the limitations of empathy impacted the participants through the lens of Hoffman's description of empathy's limitations. Finally, we will highlight how our participants connected empathy and burnout. All data excerpts are attributed to individual participants by interview number (i.e., interview 2 is abbreviated to I2).

Part 1: Empathy as experienced by intensivists

Overwhelmingly, when asked to discuss empathy, the intensivists in this study focused on the negative aspects of empathy and described having deeply troubling experiences of empathy in the ICU. As means of self-preservation, they articulated having to temper their empathic connections with patients and to withdraw from extended empathic patient engagements. Empathic distress was the dominant experience of empathy that the participants narrated across a range of clinical contexts and levels of experience – from junior faculty to the most seasoned ICU veterans. The experience of empathic distress created situations where the participants had disproportionate reactions to trivial situations (e.g., crying over the absence of specific food at mealtime (I6)); experienced depersonalization (e.g., treating patients as collections of data (I2, I5)); and withdrew from personal interactions (e.g., deliberately avoiding specific social interactions(I1, I5)). One participant clearly articulated the saliency of empathic distress experiences in the ICU stating that if they fully engaged in empathetic relationships with ICU patients, they would melt into "a puddle of tears on the floor" (I6).

Part 2: Application of Hoffman's Theory of Empathy's Limitations:

In attempting to better understand how intensivists might experience empathy, we searched for relevant theories in psychological, sociological, and theological literature [26]. Hoffman's theory of empathy and moral development was particularly compelling. As addressed in his discussion of empathy's limitations, his theory proposes that empathy can have negative ramifications. Hoffman labels these ramifications *limitations* [16] which fall under three major headings: arousal, habituation, and bias. (See Figure 1)

Arousal:

First, arousal describes the degree of emotional stimulation in a given interaction. In some situations, empathy can be a source of distress and thereby impact the individual's state of arousal [16]. There are two kinds of arousal noted in Hoffman's theory. Over-arousal is an "involuntary process that occurs when an observer's [i.e., intensivist's] empathic distress becomes so painful and intolerable that it is transformed into an intense feeling of personal distress which may move the person out of an empathic mode entirely" [16]. Under-arousal occurs when empathic distress is too weak to motivate action that it would otherwise normally prompt.

We noted that our participants described both of Hoffman's sub-types of arousal related to empathy: over-arousal and under-arousal.

OVER-AROUSAL

In response to moments of empathic distress, study participants expressed feelings of over-arousal or overwhelming stimulation. They experienced emotional reactions that were too strong to permit further functional action as a physician in the ICU context. As one participant noted, being an ICU intensivist was a constant experience of personal traumatization: "what we do every day is very … it's traumatic. You see people dying on a regular basis" *(I3)*.

The responses of over-arousal to empathic distress were experienced as burdens that weighed on the participants in both clinical contexts and in their private lives. Participants verbalized how their empathetic distress was so intense that it permeated into their home lives, creating unsustainable personal problems--an experience illustrated by this participant's story:

> "I would lay down to sleep, and I would feel the weight of the pager on my hip, which I wasn't wearing because I wasn't on call. And I would wake up all night, feeling like it was buzzing going off, I was just completely sleep deprived, my sleep-wake cycles were completely hosed." *I6*

As this data excerpt illustrates, the experience of empathetic distress creates hyper stimulated reactions that have powerfully negative psychological and physical ramifications in our study participants. In response, participants described finding various ways of changing their behaviors to cut empathic connections short, including inappropriate humor or sarcasm (I6), time limitations couched as time management (I7), and compartmentalization (I2, I3, I6, I7, I8, I9).

UNDER-AROUSAL

Study participants' experiences of under-arousal were evident in their narratives. For example, one interviewee acknowledged having lost empathy for one patient, considering that individual as "just another statistic" (I9), because the feeling of being emotionally overwhelmed by the intensity of their workload had blunted empathic connection. Under-arousal was also reported in situations where the intensivist had limited time with patients or family members, such as when an attending starts a new rotation, was just covering for a night, or in some other way did not grasp the full context of the patient's situation. As one participant noted:

> "I was just covering and I kind of felt bad because I felt I was really kind of disconnected." (I3)

Fatigue was another factor that made participants prone to under-arousal reactions. It caused a disconnect between the expected amount of empathic distress generated by a patient's suffering and the intensivist's ability to overcome their exhaustion to actively engage in empathy. As one participant candidly explained, "fatigue has a significant impact on my willingness to engage in empathetic activity" (I9).

How arousal altered behaviors

Achieving a level of appropriate arousal is critical for intensive care physicians to function in their specific environment (I6, I7, I8).

> "I think it's okay because we can only do so much. We cannot have the same level of connection with every single patient we encounter across our careers." (I7)

Behavioral changes due to over- or under-arousal could be mitigated by attention to balance.

The balance participants sought was one wherein they could recognize when empathy was important and beneficial for a given situation, versus when empathy would be a detriment requiring a different approach. As one participant explained, the COVID-19 pandemic spotlighted the need to make these distinctions since the intensity and volume of patients made balance a necessary survival skill:

> "What the pandemic has shown is that, in a mass casualty situation—and the pandemic has been a chronic mass casualty situation—you can have all the empathy in the world, but you may not have time to express it.... The overwhelming need is action, and not necessarily empathy. And so you kind of put your head down, roll through your day, and then look up at the end and sort it all out later." (I6)

Appropriate arousal and the ability to manage empathic connection was a skill that our participants developed over time. Participants with the most ICU experience articulated the value of this balance and of using coping mechanisms to mediate empathy; however, overall balance was a goal that most participants recognized and aspired to achieve and maintain.

HABITUATION:

The second type of limitation is habituation. When an individual is repeatedly exposed to another's distress, the individual's empathic distress diminishes to the point of indifference to the other's suffering [16]. The phenomena may be experienced acutely in intensivists as they face life and death disease processes and decisions on a regular basis.

Participants described being exposed to ICU patients' distress so often that they reacted with habituation. The nature of a patient's critical illness was described as limiting the empathic interpersonal connection that participants could foster with patients (I7,8,9). As this participant confessed:

> "It's very difficult to connect with them, right? So these are the patients who are maybe intubated, on a ventilator, can't really interact with you. We, I think, maybe sometimes, forget to see them as a whole person - we see them as sort of a set of organ systems" (I7)

How habituation altered behavior

Exposure to patients' distress over time was also identified as a means for learning how to prepare (I4), or "erect defense mechanisms" (I6), to sustain empathy over the duration of a career. As one participant observed, provider survival in the ICU required some level of habituation to manage the empathic distress that could overwhelm an attending:

> "I think it's difficult for me and probably for a lot of people to be constantly thinking about this [empathy] in an active, mindful way, so you do need to get into a routine where things are more automatic and hopefully things are automatic at a healthy level for you and for the patient care... it's something that needs constant calibration." (I8)

This "healthy level" of empathy was recognized by participants as a balance that they deliberately sought and reflected upon in their day-to-day practice. Triage was described as a defense mechanism for maintaining empathy while simultaneously preventing burnout in the ICU's emotionally-taxing situations (I6, I7, I8):

> "We only have so much to give and you can't give the same amount to every patient. So I think it's okay to triage that, right? It's okay to decide, "I'm going to invest, maybe a little bit, a little bit more into this patient than that patient." You know we do the same thing with medical resources. Should we, you know, look at the cost of personal stress? That's a very difficult line to walk." (I7)

More senior participants described trying to model this balance in the critical care setting for trainees and less-experienced staff, suggesting this is a skill that is developed over time.

BIAS:

The last limitation of empathy described by Hoffman is bias. Bias, differential attitudes toward a person or group based on personal backgrounds and beliefs in either a conscious or unconscious manner, can lead to differences in treatments between groups or individuals. Hoffman describes two types of bias. Familiarity bias occurs when individuals are "more likely to empathize with and help those who are members of his or her family, ethnic or racial group" [16]. Here-and-now bias is when "situational and personal cues are at their peak when a victim [an individual in distress] is present" [16].

Familiarity bias was universally described by study participants, but here-and-now bias was distinctly absent. In their interviews, participants noted that there were certain types of patients that they responded to more effectively due to similarities in their shared existences. This familiarity was expressed as particular "personalities" (I4) or people "too much like" themselves (I8). Familiarity bias impacted how participants engaged with individual patients in a wide range of ways, including, as this participant articulated, when patients reminded physicians of people in their non-medical lives (i.e., family, friends, themselves) (I6):

> "It makes you actually more compassionate because you've been through some of those experiences. I've had tests done at the hospital...you are left on a gurney and you're cold, because you're in a gown and you have no underwear on...and you can't quite

> cover yourself... Next time you're in the hospital and you're taking care of somebody... you reached out to pick up a blanket and you put it over them because you think, 'God, I hated it when my ass was hanging out that gown in front of everybody.' Right?...It's not because you were cruel, it's just, you didn't know." (I4)

Concurrently identified with this type of bias was a recognition that familiarity bias often impacted the physician's ability to make a clear decision. While this bias sometimes increased the ability for patient compassion (I4, I6), it also made decisions more difficult when clinical trajectories worsened (I8). As illustrated by this data excerpt, interviewees would often identify periods consistent with over-arousal coupled with familiarity bias (I6):

> "Everybody has kind of their patient that really, really generates that reaction. What affects me more is elderly patients, elderly married patients. I don't know whether I equate that with my grandparents or what, but there was one patient in particular, who was so kind and his wife was so kind, and he was not doing well at all, and I had worked so hard—like all week—to make him better. And when I handed over the next attending ...he made a remark about 'why are we even doing this? We need to make this guy DNR/DNI.' I lashed out at him for saying that. I took that really personally. I think what happened was I had gotten too emotionally or empathetically attached to the patient and his wife, and so maybe I wasn't making the best decisions for him, right? Like I had probably not had conversations about limiting care that I would have normally had earlier because I kind of got wrapped up in in them as people." (I6)

Most interviewees identified a patient that they had increased empathy for, or for whom their emotional attachment affected their decision making.

How biases altered behavior

Interestingly, not only did intensivists demonstrate an understanding of bias in their patient care environments, but they also felt a need to compensate for or justify these biases. Interviewees identified several ways they envisioned avoiding or overcoming bias in the care of their patients. Spending time with the patient or the patient's surrogates was regularly identified as a means of overcoming bias, where that time was specifically focused on understanding the patient beyond the context of their disease (such as "life stories" (I1)). Learning about patients' back stories and developing an in-depth narrative regarding their illnesses helped compensate for different biases, as did educating oneself about healthcare disparities:

> "I have learned more about how the medical system in the US has chronically abused, people of color, and how their perception of our medical system alters their interactions with our medical system. It was something I just really didn't know about before, but I spent a lot of time reading … Now I have noticed that I have a tendency to be a little more compassionate, and a little more, hopefully, empathetic... I think I've gained some empathy for that different perspective which I never really knew was out there before." (I6)

Finally, personal experience of being a patient was also helpful in overcoming biases in the delivery of empathic care:

> "So I think that if you've been a patient or you had a close loved one who's been a patient, it's a little bit easier to empathize with somebody else who's in the same situation."(I6)

Part 3: Burnout

The interplay between burnout and empathy was highlighted by participants. Themes of the prevalence and mitigation of burnout came to the forefront, magnified by the stressors of the pandemic. These intensivists commented that they were concerned about rising numbers of physicians suffering from decision fatigue, burnout, and stress, and they commented on how burnout affects empathy (I7, I8):

> "I think burnout is very common among ICU doctors….As you experience burnout, I think there's a slow erosion of your empathy. And so if you don't readjust that—either by stepping away or doing something else, whether it be your own personal retreat or some spiritual thing or exercise or something else—if you don't do something to readjust that, then being in that routine can be quite dangerous" (I8)

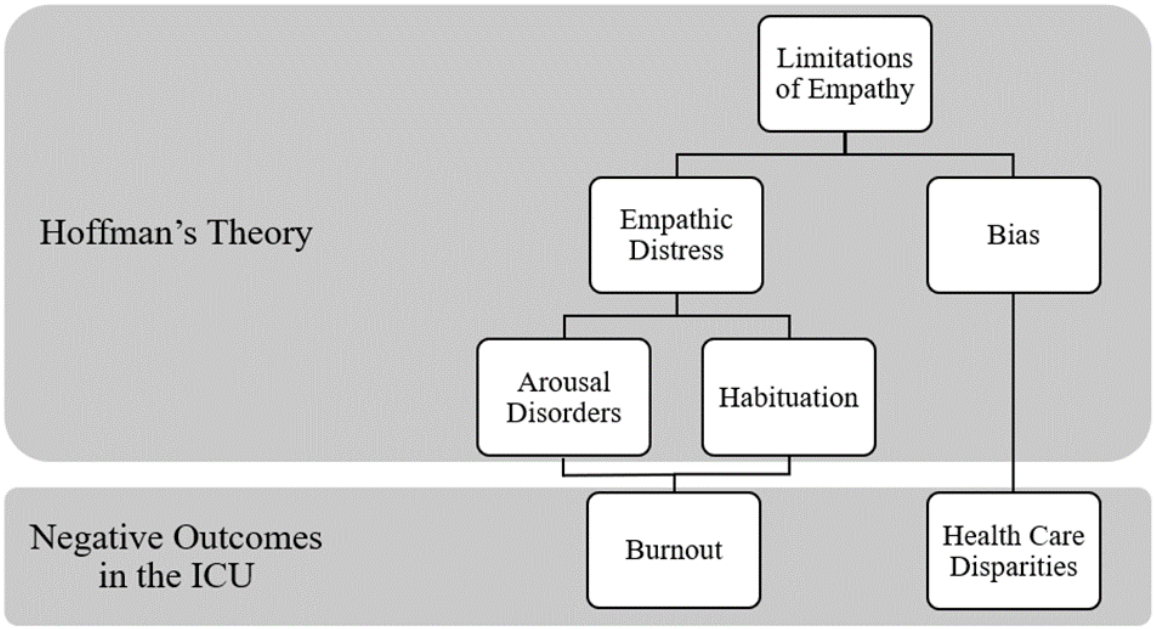
Several others also remarked on the use of depersonalization in interactions with patients to manage being on the edge of burnout. As such, the authors observe that empathy and burnout are intertwined—while burnout can result in a decrease in provider empathy for patient, so can an imbalance in the application of empathy gradually lead to burnout. Participants described constantly needing to maintain healthy habits.

While deliberate practice, meditation, and exercise were noted as mitigation practices to prevent burnout from empathy, there was also a recognition of the need to address resiliency:

> "We needed to really make sure we were doing some debriefing with the health care providers that were coming back from these COVID missions [military physician deploying to civilian hospitals to care for COVID patients], because they've been put in situations where they had never been in before taking care of patients they never taken care of before. And if you don't know how to do that, and you don't know how to look back, as you come out of that then, then there's trouble. Those of us that have done ICU care for a long period of time, we have those coping mechanisms and we have that resiliency. A lot of other people don't." (I6)

Balance remained an ongoing theme – finding it, maintaining it, and regaining it once lost – as a means of mitigating the costs of empathy and building resilience for a career in critical care medicine.

Figure 1: Hoffman's Theory of the Limitations of Empathy with the addition of the resulting negative outcomes in an intensive care environment as suggested by this study



Discussion

In this study, we developed insight suggesting that intensivists experience significant limitations in their practices of empathy that may be unique to the ICU environment and nature of work therein. However, we also found that intensivists have learned principles and developed habits to practice patient-centered care despite these limitations. Consistent with Hoffman's description of the limitations of empathy, intensivists experience significant emotional distress that colors their interactions with future patients. Over time, participants described learning to maintain appropriate levels of cognitive or emotional arousal, but this ability seems to be developed by trial and error, as opposed to being explicitly taught to them or modeled for them. Intensivists must learn to manage the stress of emotional connection with suffering patients and family members if they are to avoid becoming paralyzed precisely when action is required. Intentional and open discussion about this phenomenon may be beneficial to trainees in all medical specialties.

Of note, Hoffman discusses the interplay of innate levels of empathy and risk of over-arousal [16]. Specifically, intensivists with the highest innate levels of empathy are potentially at the greatest risk of over-arousal, indicating those with lower innate levels may be at lower overall risk. This suggests that one-size does not fit-all with respect to how intensivists ought to practice empathy and how they

learn to cope with the limitations of empathy. Further, it highlights the importance of identifying intensivists who may be at risk for burnout.

Habituation is described by Hoffman as potentially destructive to empathic affect. We found, however, that instead of being a driver of destruction, habituation was a method of self-preservation for intensivists. Our participants described habituation as a way of developing automatic routines for their shifts, or repeatedly practicing some of the stress-inducing conversations they have with patients and families. Routines allowed them some normalcy in a chaotic environment, giving them mental breaks and emotional space. Practicing difficult conversations allowed them to develop patterns for guiding successful conversations and prepared them for the emotions they will inevitably encounter with patients or family members.

Our study found that the concept of bias was prominent in intensivists' experience of empathy. Supporting the evolutionary basis of empathy [27-30], familiarity bias dominated the transcripts in this study. In fact, familiarity bias may shed light on the prevalence of healthcare disparities. Familiarity biases can lead to preferential treatment of some patients over others because they may remind us of our family or friends. Spending more time and emotional energy on these patients, to the detriment of others, is unethical. Intensivists should acknowledge the potential for familiarity bias in their care and practice vigilance in treating every patient equitably.

We found a notable lack of here-and-now bias in our study. This may be because intensivists must attend to all of their patients in an organized, systematic way to be successful in the field. It is rare for an intensivist to be managing only one critically ill patient at a time; therefore, here-and-now bias becomes moot. Intensivists must care for each acute issue of each critically ill patient, and often this care must occur simultaneously.

We suggest that an awareness of and education regarding how physicians might alter their attitudes, behaviors, empathy, or care of patients in response to these biases ought to be openly discussed and taught in clinical contexts, and these discussions must be role modeled by attending physicians. Intensivists in this study were able to describe the skills or habits they developed to overcome familiarity bias. They spent more time with specific patients, sought to learn about patients from loved ones, and triaged their empathy. We contend that these skills and habits would be worth incorporating into empathy curricula for all specialties. Attendings can specifically focus on skills and habits they have learned for balance, satisfaction, and self-preservation with trainees.

This study highlights the interplay between burnout and empathy in the ICU. Given the intensity and consistency of stress in the ICU context, we recommend that intensivists would benefit from support systems such as Schwartz rounds[31], that create opportunities for vulnerable dialogue among physicians. Such interventions may allow intensivists to avoid erosion of empathy and burnout within their workplace.

Limitations

There are several limitations to the generalizability of our study findings. We specifically focused this study on medical intensivists. Future research could include pediatric, neonatal, or surgical intensivists who may have a different perspective regarding their experience of empathy. Additionally, a study comparing the intensivist experience with primary care providers or other medical specialties would allow for a clearer characterization of the differences of the experience of empathy in different medical contexts. We attempted to replicate the population of intensivists in the US with our sampling, but due to the small overall sample size our study, unfortunately, did not include any Black or Hispanic intensivists. If intensivists from underrepresented in medicine groups were included, the data might have shown different results about how the pandemic and experiences of social unrest have affected individual intensivists and their predicted career trajectories. Additionally, we did not include medical students, residents, or fellows in our sample. Future research focused on the development of empathy among trainees may guide curriculum development as well as wellness programs.

Additionally, we used a limited portion of Hoffman's Theory of Empathy and Moral Development in our analysis. Specifically, we focused on his theory of empathy's limitations which mirrored the thematic findings in our data analysis.

Conclusion

Empathy is an important factor in healthcare for patient outcomes and satisfaction. However, empathy and empathic distress have been understudied or underreported when specifically applied to the critical care setting. Our study adds to the growing body of critical care literature on empathy and reveals that intensivists acutely experience several limitations of empathy throughout their careers. These limitations include

arousal, habituation, and bias—all of which impact intensivist interactions with patients and family members, career satisfaction, stress, and rates of burnout. The knowledge that fully trained intensivists struggle with the limitations of empathy has implications to all stages of physician education from medical student through continuing medical education for attendings since all must learn and practice the empathic skills required to optimize patient care and maintain their own wellness.

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