

The burden they bear: A scoping review of physician empathy in the ICU

by

COL Jessica Bunin, MD

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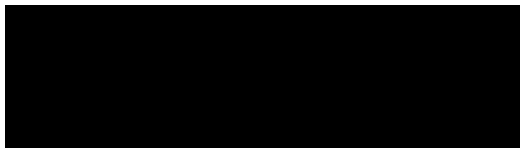
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Name of Candidate: **COL Jessica Bunin, MD, Master of Science in Master of Health Professions Education**

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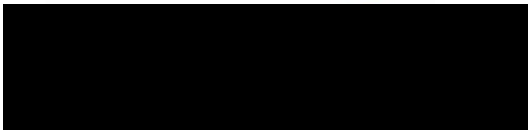
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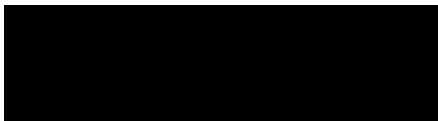
2/4/2021

Abigail W. Konopasky, PhD
Center for Health Professions Education
Committee Chairperson



2/4/2021

Lara Varpio, PhD
Center for Health Professions Education
Thesis Advisor



2/4/2021

Holly Meyer, PhD
Center for Health Professions Education
Thesis Advisor

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DEDICATION

To my wife, Alexis Albano, who is by far my better half. She stood by me every step of the way and believed in me far more than I believed in myself.

To thank my father, Barry Bunin, who has always provided support and patiently listened to more discussions about empathy than he ever should have had to endure. He was always up for reading one more draft. I love you both!

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Jessica L Bunin, MD
Department of Medicine
Uniformed Services University
4 Feb 2021

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ABSTRACT

The burden they bear: A scoping review of physician empathy in the ICU

Jessica Bunin, Master of Health Professions Education, 2021

Thesis directed by: Lara Varpio, PhD, Professor and Associate Director of Research at the Center for Health Professions Education, and Holly Meyer, PhD, Associate Director of Student Affairs at the Center for Health Professions Education, Uniformed Services University of the Health Sciences in Bethesda, MD

Background: Research has shown that empathy encourages increased patient reporting of symptoms, improves patient participation in care, and enhances patient compliance and satisfaction. If intensivists want to harness the advantages of empathetic care, it is essential to understand how empathy impacts their profession. In this study, we set out to explore the state of the literature addressing empathy as it pertains to intensivists.

Research Question: What is the current state of knowledge about empathy as it pertains to physicians working in the adult intensive care unit (ICU)?

Study Design and Methods: We conducted a scoping literature review, allowing our research team to clarify the complex topic of empathy as it relates to physicians working in the ICU, and to refine the direction of future inquiries. We searched six databases and grey literature for articles specific to empathy, physicians, and the ICU environment. Results were blindly and independently reviewed by authors.

Results: Our search yielded 628 manuscripts; 45 were selected for inclusion in the study.

Fourteen articles defined empathy. The manuscripts connect through three overarching themes: (1) the risks and benefits of empathy, (2) the spectrum of connection and distance of physicians

from patients and family members, and (3) the facilitators and barriers to the development of empathy.

Interpretation: We found 45 articles that revealed the complexity of empathy as a phenomenon. It is not well defined and involves both risks and benefits for patients and providers. In dealing with this complex phenomenon, physicians engage in varying levels of connection in an effort to provide optimal care for their patients while simultaneously protecting their own well-being. Based on the findings of this review, we recommend four steps to support ICU physicians' empathy: clearly defining empathy, transparently discussing risks and benefits, providing education regarding reflective practice, and developing supportive environments.

TABLE OF CONTENTS

LIST OF TABLES.....	8
LIST OF FIGURES.....	9
CHAPTER 1: INTRODUCTION.....	10
BACKGROUND.....	10
CONCEPTUAL FRAMEWORK.....	12
RESEARCH QUESTION.....	14
CHAPTER 2: THE BURDEN THEY BEAR: A SCOPING REVIEW OF PHYSICIAN EMPATHY IN THE ICU.....	15
ABSTRACT.....	15
BACKGROUND.....	17
METHODS.....	18
RESULTS.....	20
DISCUSSION.....	25
INTERPRETATION.....	28
TABLES AND FIGURES.....	33
APPENDICES.....	39
CHAPTER 3: DISCUSSION.....	52
IMPLICATIONS.....	52
MILITARY RELEVANCE.....	53
LIMITATIONS.....	53
FUTURE DIRECTIONS.....	54
CONCLUSIONS.....	54
REFERENCES.....	56

LIST OF TABLES

Table 1: Published definitions and domains of empathy	36
Table 2: Facilitators and barriers to the development of empathy.....	37

LIST OF FIGURES

Figure 1: Process flow chart for vetting literature for inclusion.....	34
Figure 2: Years of publication of manuscripts.....	35
Figure 3: Image of the inter-relation of the three themes regarding empathy.....	35
Figure 4: Four steps for healthcare systems, educators, and researchers to support physicians in optimizing patient care and safe-guarding physician well-being	38

CHAPTER 1: INTRODUCTION

BACKGROUND

Empathy is an important concept discussed in various health professions. For the purposes of this research, I will be defining empathy as a “cognitive attribute that involves an ability to understand the patient's pain, suffering, and perspective combined with a capability to communicate this understanding and an intention to help.”¹

Empathy is often used interchangeably with sympathy and compassion; however, it is important to distinguish these terms in order to study the phenomena, teach it to our trainees, and practice it in clinical work. Sympathy connotes feelings of sorrow and pity for another individual. Compassion implies a concern for another individual or group with the desire to help, but it does not necessarily involve understanding the suffering or perspective involved. Empathy is a distinct cognitive attribute from both sympathy and compassion due to the understanding and communication that is required by empathy. For example, if one has sympathy for a cancer patient, she acknowledges that cancer is a bad illness and feels pity for the patient without attempting to understand the perspective or suffering of the individual. If one has compassion for cancer patients, she may feel the need to help. This may lead her to donate money to a cancer organization, again without understanding the perspective of the individuals who suffer from the illness. If one has empathy, there is a different level of association. One must spend time, communicate, and connect with patients to be able to understand their perspective and communicate that understanding back.

Empathy is an important attribute for intensive care doctors to embody. Empathy leads to increased patient reporting of symptoms and concerns, increased patient participation in care, and increased patient compliance and satisfaction.^{2,3} Empathy has even been shown to decrease

complications of diseases such as diabetes.⁴

While I acknowledge and agree with the focus on increasing physician empathy, I also worry about the cost of empathy and the potential empathic distress that physicians may endure. I have struggled to determine an optimal level of empathy—i.e., the point at which an empathetic physician can optimize patient outcomes while not increasing risk of withdrawal, stress, and burnout.⁵ Further, how might an intensivist optimize the empathic development of physicians in training while recognizing that engaging in too much understanding of patients' suffering might come at a cost? In other words, when is being empathetic an asset to the intensive care doctor and when is it “death by a thousand cuts”?

My interests in empathy derive from my personal experiences as both a patient and a physician. As a patient, I had an experience of an attending physician being by my side supporting me as I woke from a surgery. This left me feeling as though he understood my fears and worries, and as though he was going to help me shoulder the burden of my feelings. In short, I felt that he was an empathic physician. As a physician in the intensive care unit, I strive to be a highly empathic provider at all times, but I worry about the emotional burden that I might experience by doing so. This interest in empathy is now also fueled by my concern for medical learners. As a program director for future intensive care doctors, I feel responsible to teach them to be empathic providers while simultaneously compartmentalizing and protecting themselves from potential empathic distress and burnout.

As I began to research empathy, I found that there was a great deal written about empathy in nursing, teaching empathy to students, and even the empathy physicians demonstrate towards patients. However, there was little addressing empathy as it pertains to intensive care unit physicians specifically. I found this gap significant as empathy can be keenly experienced in the

day-to-day life and death decisions and events that occur in the intensive care environment. The intensive care context is unique, and so engaging as an empathetic physician therein surely requires specific consideration.

CONCEPTUAL FRAMEWORK

As a theoretical framework, we applied King's Interacting Systems Theory⁶ during data extraction. King identifies three interacting systems that affect an individual: the personal, the interpersonal, and the social. The personal system addresses issues specific to the one person. It addresses perception, self, body image, growth and development, time, and space.⁶ The interpersonal system involved the interaction between individuals whether this be in dyads or larger groups. This system addresses interaction, transaction, communication, role, and stress. The final system is the social system, which speaks to the shared common goals, interests, and values of a community. Social systems may be represented by families, church communities, or schools, but for the purposes of this study, we looked at the social group as all of the individuals who interact in an intensive care unit. As a part of our data extraction, we determined if any or all of these systems were addressed in each manuscript. While we anticipated that King's theory could usefully inform our analysis, in the work of doing the analysis of each manuscript we found that the theory did not meaningfully increase our understanding of the phenomenon. Therefore, in our final manuscript, we did not include any specific discussion of King's Interacting Systems Theory. While this theory did not inform our final analysis, we acknowledge that it did inform our perspectives as we discussed and analyzed the manuscripts in this review. We anticipate that this theory will inform our future studies.

RESEARCH QUESTION

Informed by the background literature and the conceptual framework described above, we sought to answer the following question:

What is the state of knowledge about empathy as it pertains to physicians caring for adult patients in the Intensive Care Unit?

CHAPTER 2: THE BURDEN THEY BEAR: A SCOPING REVIEW OF PHYSICIAN EMPATHY IN THE ICU

SUBMITTED AS:

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Abstract:

Background: Research has shown that empathy encourages increased patient reporting of symptoms, improves patient participation in care, and enhances patient compliance and satisfaction. If intensivists want to harness the advantages of empathetic care, it is essential to understand how empathy impacts their profession. In this study, we set out to understand the challenges that empathy poses for intensivists.

Research Question: What is the current state of knowledge about empathy as it pertains to physicians working in the adult intensive care unit (ICU)?

Study Design and Methods: We conducted a scoping literature review, allowing our research team to clarify the complex topic of empathy as it relates to physicians working in the ICU, and to refine the direction of future inquiries. We searched six databases and grey literature for articles specific to empathy, physicians, and the ICU environment. Results were blindly and independently reviewed by authors.

Results: Our search yielded 628 manuscripts; 45 were selected for inclusion in the study. Fourteen articles defined empathy. The manuscripts connect through three overarching themes: (1) the risks and benefits of empathy, (2) the spectrum of connection and distance of physicians

from patients and family members, and (3) the facilitators and barriers to the development of empathy.

Interpretation: In this scoping review on empathy in physicians in the ICU, we found 45 articles that revealed that empathy is a complex phenomenon. It is not well defined and has risks and benefits for both patients and providers. In dealing with this complex phenomenon, physicians practice varying levels of connection in an effort to provide optimal care for their patients while protecting their own well-being. The authors recommend four steps to support physicians in obtaining both of these goals: clearly defining empathy, transparently discussing risks and benefits, providing education regarding reflective practice, and developing supportive environments.

BACKGROUND

Research shows that empathy encourages increased patient reporting of symptoms and concerns, improved patient participation in care, and enhanced patient compliance and satisfaction ^{1,2}.

Empathy is also linked to decreased disease complications ³ and reduced duration of viral illnesses ⁴. Despite empathy's importance, physicians have trouble consistently engaging in empathetic patient care. The intensive care unit (ICU) holds unique factors that impede physicians' ability to engage in empathic practices. Since ICUs house hospitals' most acutely ill patients, care requires constant patient data surveillance and use of advanced technologies.

Intensivists must balance this cognitive load with the emotional demands of supporting acutely ill patients, their family, and the care team. If intensivists want to prepare for the burdens they might bear, it is essential to understand how empathy impacts them.

To investigate empathy as experienced by intensivists, we must distinguish it from sympathy and compassion. Sympathy connotes awareness of another's strife but not an understanding of their perspective. In clinical practice, having sympathy for a patient involves acknowledging the patient has a serious illness and feeling pity for them without attempting to understand the perspective or suffering of that individual. Compassion implies a concern for another individual and a desire to act. It is the feeling of needing to help the patient, but it too does not include understanding the patient's perspective or experience of suffering. In contrast, having empathy entails acknowledging the distress of a patient and feeling the desire to help while spending time communicating and connecting with the patient to ensure their perspective is understood and that this understanding is communicated back to them.

As these distinctions highlight, asking intensivists to practice patient care with empathy is a

daunting request. With an optimal level of empathy, physicians may improve patient outcomes without increasing risk of withdrawal, stress, and burnout.⁵ But what is that optimal level for intensivists? When is being empathetic an asset to the ICU doctor, and when is it too heavy a load to shoulder? In this study, we set out to understand the challenges that empathy poses for intensivists. Specifically, this research seeks to identify and to describe the current state of knowledge about empathy as it pertains to physicians working in the ICU.

STUDY DESIGN AND METHODS

We conducted a scoping literature review⁶ to explore the extent, range, and nature of research related to physician empathy in the ICU. We followed the steps of a scoping review as described by Arksey and O'Malley's framework, and the additional step suggested by Levac et al.^{6,7} We report our methods according to these six steps, and we illustrate our process in **Figure 1**.

Step 1: Develop a research question: The research question underpinning this review is: What is the state of knowledge about empathy as it pertains to physicians caring for adult patients in the ICU? To develop this question, two authors (JB, ES) reviewed and discussed the definition of empathy as it relates to patient care, and those of similar terms (i.e., sympathy and compassion).

Step 2: Identify relevant literature: Four authors (JB, ES, HM, LV) discussed, developed, and refined the study's search terms and inclusion and exclusion criteria. We conducted a search on December 26, 2019 across six different databases: PubMed, Embase, Web of Science, OVID-Medline, CINAHL, and PsycINFO. No restrictions were placed on date or language (**eAppendix 1** presents the full search strategies). After deduplication, we retrieved 599 manuscripts. We also searched the grey literature using Google Scholar and identified additional 101 citations. Hand

searching the reference lists of articles did not reveal additional items. This search was repeated on October 13, 2020 for updates, which yielded an additional 29 manuscripts. 628 articles were included after deduplication.

Step 3: Select specific articles: The titles and abstracts were reviewed by two authors (JB, ES) to verify that empathy—as it relates to intensivists caring for adult patients—was addressed.

Exclusion criteria are listed in **Figure 1**. In total, 487 articles were excluded, and 141 manuscripts were included for full text review. An additional 80 manuscripts were excluded during full text review, leaving 61 articles in final the data extraction.

Step 4: Data extraction: Four authors (JB, ES, HM, LV) created a data extraction tool through iterative testing to identify weaknesses and accurately capture data, with revisions reflecting consensus among the four authors. The final extraction tool is included in **eAppendix 2**. Each manuscript was independently and blindly evaluated by at least two authors. Each researcher independently extracting data from approximately 30 items. During this step, an additional 16 articles were excluded from the review leaving a total of 45 articles (**See eAppendix 3**). A translator, independent from the research team, translated the foreign language articles manuscripts ($n=3$) to English. The researchers used these translated manuscripts for data extraction.

Step 5: Summarize and report results: The extracted data was reviewed, collated, and summarized thematically by the primary investigator (JB). The team (JB, ES, HM, LV) discussed the collated data and themes that organized the summary to determine how best to

report the extracted data. The research team constructed a data mapping that presented the findings by theme, represented the congruencies and differences in the data, and highlighted the dominant areas of research. All extracted data was coded and charted to this structure.

Step 6: Consult with Key Informants: Five international experts of empathy in the ICU were consulted to ensure the comprehensiveness of the manuscripts included, and to confirm the interpretations and summary of the data. These five expert individuals are physicians or doctorate level nurses with a particular interest in empathy as evidenced by publications, referral, and/or development of intensive care resources. The experts confirmed that no manuscripts were neglected, and the findings were consistent with their experience.

RESULTS

Our search yielded 628 manuscripts; 45 were selected for inclusion in the study. These manuscripts were published between 1985 and 2010 (see **Figure 2**). There was a gap in this literature from 1985 until 2003 and again from 2005 until 2007. Notable publishing surges occurred in 2017 and 2019. Not all of the articles addressed empathy as their central phenomenon of interest - empathy could be the primary focus (22.2%), part of a shared focus (28.9%), or merely a peripheral issue (48.9%).

Definitions of Empathy

Fourteen (31.1%) articles defined empathy. The definitions of empathy held three distinct components: cognitive processes (e.g., understanding or interpreting), affective processes (e.g., feeling with someone or sensing another's feelings), and actions (e.g., mirroring, providing

support). Not all three components were present in all definitions. **Table 1** details all 14 definitions, codes them to each component, and indicates if the article held empathy as a primary, shared, or peripheral focus.

Three themes of intensivist empathy

The manuscripts connect through three overarching themes: (1) the risks and benefits of empathy, (2) the spectrum of connection and distance of physicians from patients and family members, and (3) the facilitators and barriers to the development of empathy. The inter-relation of these themes is depicted in **Figure 3**.

Theme 1: The risks and benefits of empathy:

When considering the risks and benefits of empathy, it is necessary to consider the various individuals affected by empathy and the relationships that exist in the ICU. Twenty-three (51.1%) articles articulated some risks and/or benefits of physician displays of empathy.

Many articles identified that empathy benefited patients and patients' family members, aligning with research on empathy in other medical literature. Two manuscripts reported more successful therapeutic actions and improved prognostic accuracy due to clinical empathy^{8,9}. One paper reported an increased perception of safety by patients⁸ when the intensivist displayed empathy. Nine papers reported greater patient and family satisfaction with increased physician empathy. One article described patients experiencing less anxiety¹⁰, and two noted less depression^{8,11} when their intensivist was empathetic. These manuscripts suggest that intensivist displays of empathy can benefit patients. In fact, one manuscript suggested that empathy may support patient healing even when providers cannot heal physiologic abnormalities – their presence and

vulnerability was enough.¹²

Looking beyond patients and families, seven manuscripts articulated that empathy benefits providers. Benefits for ICU providers included: enhanced communication¹³; increased workplace effectiveness, relationship quality, and social satisfaction¹⁴; greater “wisdom, clarity, purpose, and direction”¹²; improved job satisfaction and meaning in work^{8,11}; enhanced sense of cohesiveness and development of trust across the care team⁸; and protection from a sense of exclusion within the work environment.⁸ Empathy might also have rejuvenating and inspiring effects for providers, allowing them to serve patients better.¹⁵

While the preponderance of evidence focused on the benefits of empathy, six (13.3%) manuscripts highlighted associated risks. Three primary concerns were identified: provider wellness,¹⁶⁻²⁰ the potential inequity in patient care due to provider bias,^{14,21} and impaired decision making.^{22,23}

Risks identified for intensivist wellness were concerns regarding burnout, secondary traumatic stress, and compassion fatigue.^{16,17,19,20} One article suggests that over-engagement related to empathy may damage professionals’ well-being.²⁴ Another manuscript noted the double bind intensivists face: they either connect with their patients and become worn down in the process, or they preserve themselves by eschewing empathy.¹⁹

The literature also identified the potential risk that provider bias may influence empathy and thereby affect patient care. Two articles^{14,21} cautioned that empathy may lead to inequitable

patient care if intensivists experience greater empathy for patients who “look like us,”²¹ or with whom a personal connection is felt. Kompanje et al warned that if intensivists only feel empathy for patients who look similar or share the same background, then most patients would not meet those criteria and would therefore not reap empathy’s benefits.²¹

In terms of impaired decision making, Ciciecki & Kara note that empathic providers may enjoy improved patient satisfaction and results in treatment, but they may simultaneously risk inability to make objective decisions.²⁵ While it is not possible to determine the line where empathy transitions from improving patient care to impairing provider decision making, Bein et al warn that there is likely a point at which “an ‘overdose’ of empathy will not further benefit the patient’s wellbeing”²².

Theme 2: Spectrum of connection to patients and family members:

The manuscripts included in this review often included discussions of how the degree of connectedness with patients influences physicians’ chance of experiencing either risks or benefits of empathy. Thirteen (28.9%) manuscripts—including every article in which empathy was the primary focus—addressed this issue. Several posited that intensivists must reach a balance between connection with and distance from patients to optimize their ability to provide optimal patient care and maintain wellness.^{8,18,19,22,24,26} Two papers advised that maintaining a distinct sense of self is beneficial for the physician.^{18,22} One manuscript even suggested that a separation of physician-self and patient-other is a sub-context to the definition of empathy, in that “empathy implies the ability to enter the world of the other without losing the boundaries of the self and without confounding or identifying with the patient”¹⁸. Another asserts that finding a

balance of connection may be a coping mechanism subconsciously practiced by intensivists.²⁴

This need to find balance was clearly expressed in the articles; one manuscript suggested that “medicine without connection doesn't actually further the provider...in a way that creates joy in work,”¹², while another argued that intensivists “adapted and held themselves at a distance (empathy-wise) from patients as a protective factor.”²⁴

Theme 3: Facilitators and barriers to developing empathy:

Twenty-one manuscripts (46.7%) reported factors that enhance intensivist empathy, while fourteen (31.1%) addressed factors that impair its development. **(See Table 2)** Five manuscripts (11.1%) described patient and family factors that increased or inspired empathy.^{11,20,26-28} These factors were: the presence of loved ones in the patient’s room¹¹; expressions of relief from family after speaking with physicians¹¹; emotional expressions by family²⁰; a patient’s mental illness²⁸; and requests for assistance.²⁸

Seven studies (15.5%) focused on intensivist characteristics that facilitate empathy.^{19,20,27-31} (e.g., specialty^{9,23} and gender²³). In general, physicians were more able to express empathy when they understood their patients’ and family members’ cognitive, psychosocial, and emotional needs.³² Facioli et al. discussed how narrative competency—the ability to acknowledge, absorb, interpret, and respond to a patient’s story—could facilitate and strengthen intensivists’ empathy.

33

Thirteen manuscripts (28.9%) mentioned communication skills training and communication models in facilitating empathy.^{8,10,11,13,16,19,20,32,34-38} Two manuscripts reported that the practice of

narrative medicine as a means of communication could increase empathy,^{12,33} one focused on daily communication,²³ and several others focused on physician characteristics and nonverbal interactions, arguing these were more important attributes than language choices.^{28,29} Non-verbal factors noted to facilitate empathy included closer contact with patients and being able to identify with the patient's relatives.²⁸ Finally, reading fiction and watching movies on suffering²¹ and a hidden curriculum practicing empathy¹⁷ were also reported to enhance empathy.

Barriers to development of empathy were related to the family, patient, physician, and context. Family members experienced less empathy for the physicians as education levels of the relatives increased.²³ Physicians had difficulty empathizing when patients were manipulative.²⁸ Billings et al. identified intensivists' communication style as a potential barrier: lecturing at patients and/or families interfered with physicians' empathic ability because it hindered physicians' ability to actively listen and provide empathic responses.²⁷ Finally, the high stress, technically driven environment of the ICU also is a barrier to development and perception of empathy by both family members and providers.^{8,12,30}

Depending on the context, two factors were reported to act as either facilitators or barriers of empathy: translators and expressions of hope for miracles. The use of a translator could either facilitate or obstruct development of empathy depending on the focus and quality of the translator.³⁹ Similarly, family members expressing hope for a miracle could help or hinder the development of empathy as it could increase expressions of empathy in some providers, but prompt others to change the subject.⁴⁰

DISCUSSION

In this scoping review addressing intensivist empathy in the ICU, we found 45 articles that upended notions that empathy is a dichotomous phenomenon; the manuscripts did not support the notion that empathy is something that intensivists either have or not. Instead, we found that empathy is formulated as a complex phenomenon. It is not well defined and holds potential risks and benefits for both patients and providers. Physicians engage in varying levels of connection with patients to provide optimal care patients while simultaneously protecting their own well-being. Based on our review, we recommend four steps that healthcare systems, educators, and researchers can employ to support intensivists in obtaining both of these goals: clearly defining empathy, transparently addressing risks and benefits, providing education regarding reflective practice, and developing supportive environments (See Figure 4).

The language used to define empathy matters. It shapes the ways in which intensivists learn it, deploy it, and teach it. However, there was no definition consensus in the literature. We assessed all identified definitions for empathy and determined three domains were apparent: cognitive, affective, and action. (See Table 1) The definitions that included all three domains offered a more holistic conceptualization of empathy. We endorse Hojat et al's definition of empathy because of its inclusive orientation: empathy is the "cognitive attribute that involves an ability to understand the patient's pain, suffering, and perspective combined with a capability to communicate this understanding and an intention to help."⁴¹ This definition addresses the cognitive domain of understanding, the affective component of perceiving the pain and suffering of another, and the action of communicating that back to the patient.

The next step toward harnessing empathy both to care for and protect patients and providers is to discuss the risks and benefits of its application. A majority of manuscripts included in this review addressed the benefits of empathy, while only 13.3% addressed its risks. Intensivists, their leadership, and their support networks should understand the potential perils of empathy such as detriment in provider wellness,¹⁶⁻²⁰ loss of objective decision making,^{22,23} and negative effects of provider or patient bias.^{14,21} Only when we are aware of the risks of empathy for intensivists can we be cognizant and alert to their impact on fellow physicians.

The third step is to provide education regarding reflective practice and narrative medicine – the ability to analyze and evaluate provider experiences to develop new understandings and use patient stories to engage in personal reflection.^{12,33,42} Our review indicates that providers practice varying degrees of empathetic connection to protect their wellbeing. Physicians should reflect on their relationship with each patient and assess how that relationship affects their emotional state. If a provider strongly identifies with a patient or family member, they may seek a more enmeshed relationship, inhibiting objective decision making.^{22,23} Alternatively, if a patient engenders negative emotions in a physician, the physician may remain distant. Adding to this complexity, each patient may desire a different level of connection. As such, each patient encounter requires the physician and patient to renegotiate the optimal degree of connection. Reflection assists with identification of the point along the continuum where patient care and physician wellness are optimized.

Time for reflection and space to experience the emotions of critical care medicine take us to the final step: developing a supportive environment. We often consider how the sterile, technical

environment affects our patients, but we do not consider how this impacts the physicians who work therein. It may be more natural for physicians to remain more cognitive and less emotional in this environment. Asking them to connect with patients, to understand a patient's pain, and to relate to a patient's suffering demands an environment where physicians can work through that emotional load. Physicians require an environment that allows them to connect to their patients while ensuring they can return to their workplace each day ready to face the life that death challenges awaiting them. While models for creating such environments exist,⁴³ further studies on how to create and enhance such an atmosphere may be key to empathic success for our intensivists and our institutions.

Limitations:

This review has several limitations. Most notably, significant heterogeneity in the manuscripts impede drawing definitive conclusions regarding empathy in the ICU. Heterogeneity existed regarding the degree that the article focused on empathy, whether or not it chose to define empathy, and additional topics addressed. Due to the narrow nature of our research question, addressing empathy among only ICU physicians caring for adult patients, we might have missed other findings, definitions, or guidelines from the pediatric or nursing literature. While this question was chosen purposefully given the dramatically different relationships that exist between adult patients and intensivists compared to pediatric patients or nursing staff, it may still have excluded important findings.

INTERPRETATION

Overall, this review revealed that empathy among physicians in the ICU is not a dichotomous phenomenon. It instead exists on a spectrum along which providers must find balance to

optimize patient care and enhance their own wellbeing. A four-step process, 1) clearly defining empathy, 2) transparently addressing risks and benefits, 3) providing education regarding reflective practice, and 4) developing supportive environments may optimize the benefits of empathy in the intensive care environment while protecting our patients and providers from its potential harms. Future studies are warranted to investigate each of these areas.

TAKE HOME POINTS:

Study Question: What is the state of knowledge about empathy as it pertains to physicians caring for adult patients in the ICU?

Results: The 45 manuscripts identified in this scoping review connect through three overarching themes: (1) the risks and benefits of empathy, (2) the spectrum of connection and distance of physicians from patients and family members, and (3) the facilitators and barriers to the development of empathy.

Interpretation: A four-step process, 1) clearly defining empathy, 2) transparently addressing risks and benefits, 3) providing education regarding reflective practice, and 4) developing supportive environments may optimize the benefits of empathy in the intensive care environment while protecting our patients and providers from its potential harms.

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LIST of TABLES and FIGURES (in order of appearance):

1. Figure 1: Process flow chart for vetting literature for inclusion
2. Figure 2: Years of publication of manuscripts
3. Table 1: Published definitions and domains of empathy with delineation of domains of empathy included (cognitive, affective, and actions)
4. Figure 3: Image of the inter-relation of the three themes regarding empathy as it pertains to physicians in the Intensive Care Unit that were identified in this scoping review (Risks and benefits, degree of connection, and facilitators and barriers)
5. Table 2: Facilitators and barriers to the development of empathy
6. Figure 4: Four steps for healthcare systems, educators, and researchers to support physicians in optimizing patient care and safe-guarding physician well-being.
7. eAppendix 1: Search strategies
8. eAppendix 2: Data extraction tool
9. eAppendix 3: Table of all included manuscripts

Figure 1: Process flow chart for vetting literature for inclusion

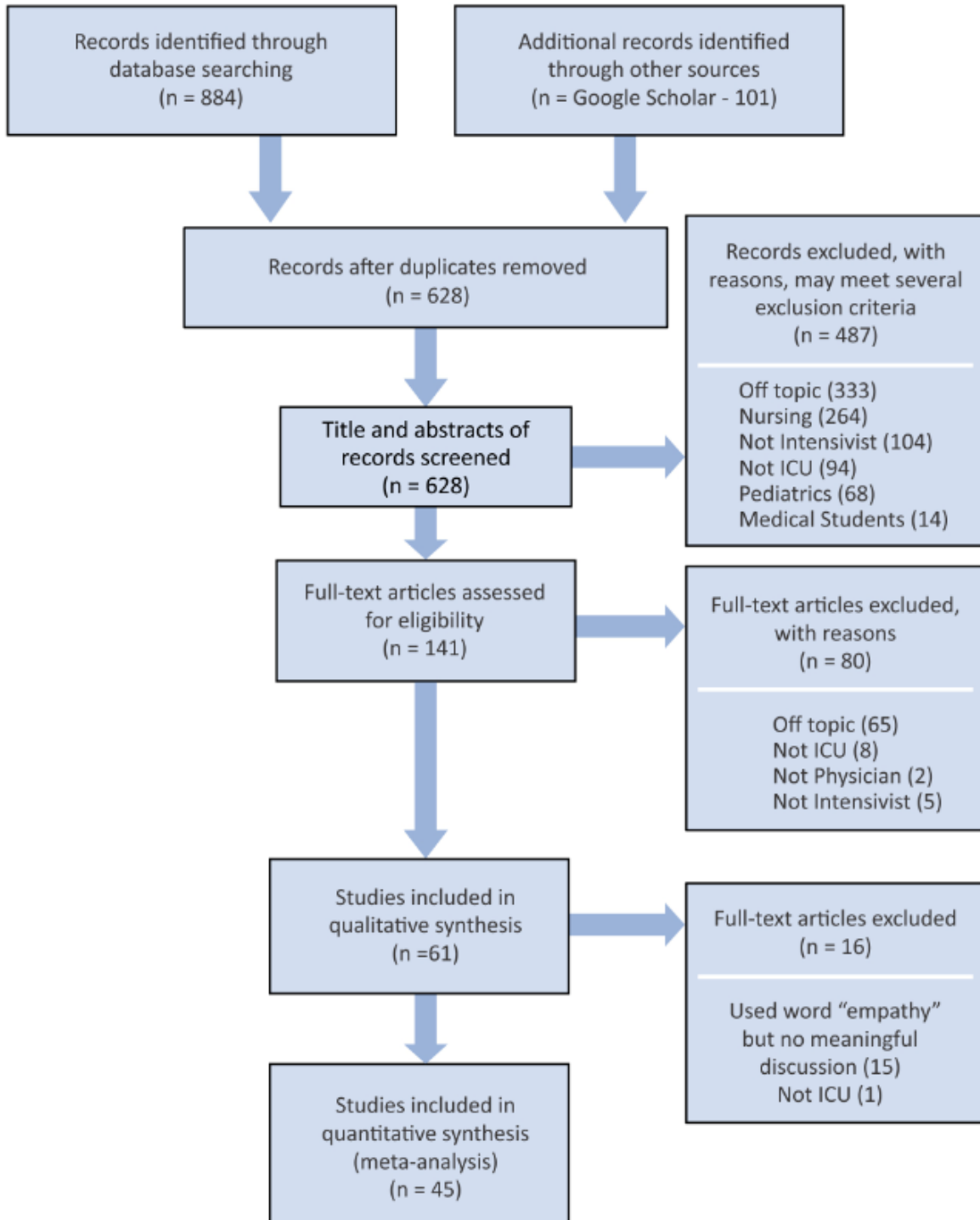
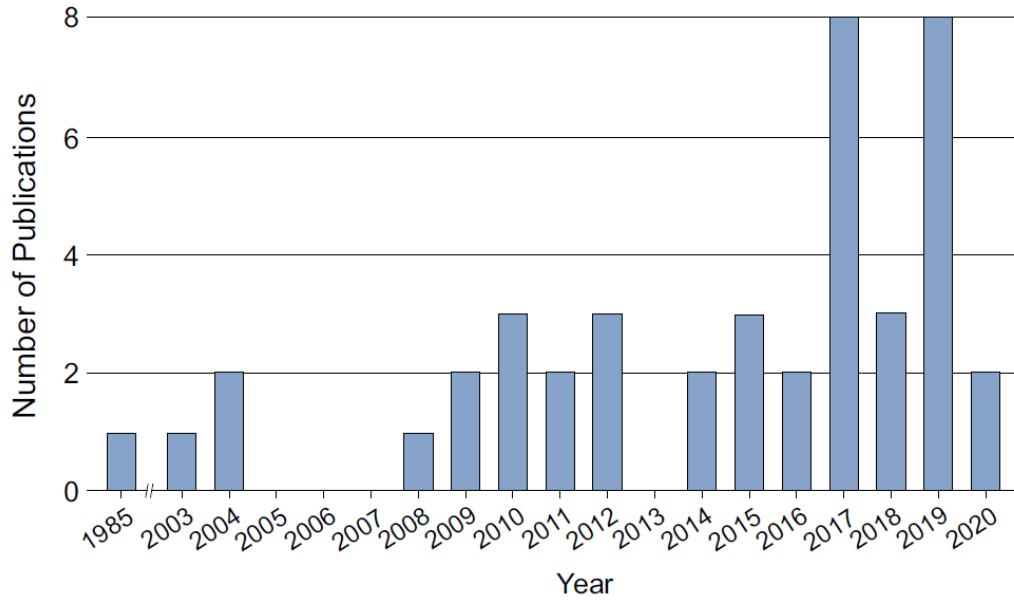


Figure 2: Years of publication of manuscripts.



*Note that no articles were published between 1985 and 2003 and publications surged in 2017 and 2019

Figure 3: Image of the inter-relationship of the three themes regarding empathy in the Intensive Care Unit that were identified in this scoping review (Risks and benefits, degree of connection, and facilitator and barriers)

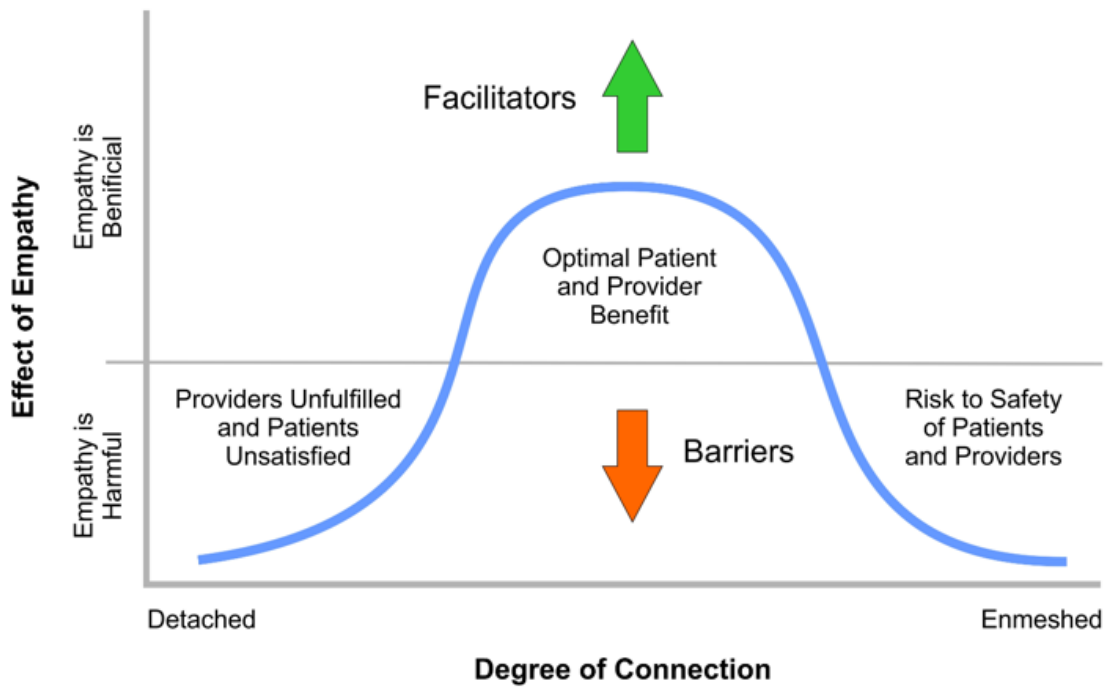


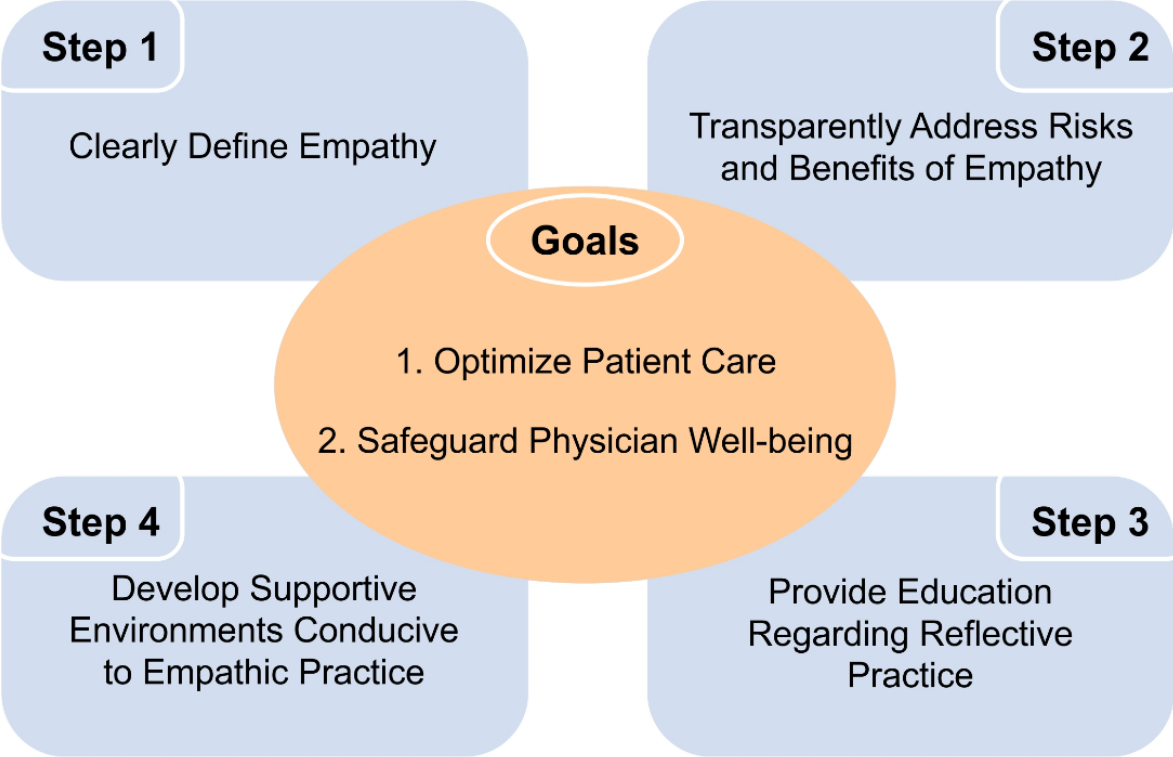
Table 1: Published definitions and domains of empathy with delineation of domains of empathy included (cognitive, affective, and actions)

Definition of Empathy	Cognitive processes	Affective processes	Actions
Empathy is the Primary Focus of the Manuscript			
"the ability to understand and share another person's feelings and perspectives, and using that understanding to guide future action" ⁴⁴	X	X	X
"Sympathy is feeling sorry for someone; empathy is feeling with someone." ¹⁵		X	
"we focus on the assumptions individuals make about other people's internal states (empathic inferences) as well as their ability to make these assumptions correctly (empathic accuracy)." ¹⁴	X		
"In empathy we mirror each other's anguish, in compassion we only show concern" ²¹		X	X
"we defined empathic statements as any statement by a clinician that explicitly acknowledged an emotion or an internal state of a family member" ²⁶			X
"The readiness and capability to put oneself in the shoes of someone else and to be able to express the gained understanding both verbally and nonverbally." ⁸	X	X	X
"empathy is a multidimensional construct combining the ability to feel an appropriate emotion in response to another's emotion and the ability to understand the others' emotion (perspective-taking) and behave accordingly." ¹⁸	X	X	X
"people's ability to share, understand, and care about each other's emotions" ¹⁹	X	X	
Empathy is a Shared Focus of the Manuscript			
"Empathic communication—The ability to provide support to patients and family members during conversation using both specific statements and nonverbal cues." ²⁹			X
"the ability and the willingness to understand the patient's emotional reactions, to see the situation through the patient's eyes and to communicate this understanding" ²⁰	X		X
"understanding the feelings and thoughts involved in the experience of the other person of the relationship. This ability has the requirements of recognition of emotions and interpersonal flexibility." ³⁸	X	X	
"empathy orientation, defined as the capacity to put oneself in the place of others." ⁴⁵	X	X	
Empathy is a Peripheral Focus of the Manuscript			
"Empathy involves defusing negative emotions, showing others that you care, and responding to both facts and feelings." ¹³			X
"Empathy is built from the experiences of sensing the feelings of others and thereby understanding them. There is no requirement with empathy that one can identify with the other person...empathy also means regulating the stressful negative emotions of emotional contagion and compassion" ³⁵	X	X	X

Table 2: Facilitators and Barriers to Development of Empathy

	Facilitators of Physician Empathy	Barriers to Physician Empathy	Factors that May Be Facilitators or Barriers Depending on Context
Patient / Family Factors	<ul style="list-style-type: none"> • Presence of loved ones¹¹ • Emotional expressions²⁰ • Seeking help²⁸ 	<ul style="list-style-type: none"> • Higher education level²³ • Manipulative motives²⁸ 	<ul style="list-style-type: none"> • Mental Illness²⁸
Physician Factors	<ul style="list-style-type: none"> • Narrative competency^{12,33} • Psychological insight²⁹ • Identification with family members²⁸ • Able to demonstrate understanding³³ • Female gender²³ • Type of physician^{9,23} 		<ul style="list-style-type: none"> • Bias^{14,21}
Communication	<ul style="list-style-type: none"> • Style²⁷ • Training^{10,13,32,34} • Use of communication models^{8,35,37} • Active Listening²⁷ 	<ul style="list-style-type: none"> • Lecturing²⁷ 	<ul style="list-style-type: none"> • Family verbalizing hoping for miracles⁴⁰
Contextual Factors	<ul style="list-style-type: none"> • Duration of contact (> 10 minutes)²³ • Availability of support for physicians¹⁹ 	<ul style="list-style-type: none"> • Administrative burden¹⁹ • High tension field⁸ • Sterile, technical ICU environment¹² 	<ul style="list-style-type: none"> • Use of translators³⁹
Other	<ul style="list-style-type: none"> • Reading/watching movies about suffering²¹ • Positive hidden curriculum¹⁷ 		

Figure 4: Four steps for healthcare systems, educators, and researchers to support physicians in optimizing patient care and safe-guarding physician well-being.



eAppendix 1: Search Strategies

PubMed (Legacy). Searched 12/26/2019 and 10/13/2020. No filters applied.

(((((((((Empathy[MeSH] OR Empathy[MAJR] OR empathy[ti] OR empathic[ti] OR empathize[ti] OR empath*[ti] OR empathetic[ti] OR cognitive empath*[tiab] OR empathic concern[tiab] OR empathic distress[tiab] OR affective empathy[tiab] OR behavioral empathy[tiab]))) AND (ICU[tiab] OR "intensive care units"[MeSH Terms] OR intensive care unit[tiab] OR intensive care units[tiab] OR critical care[tiab] OR critically ill[tiab] OR critical illness[tiab] OR critically ill patient*[tiab] OR intensive care[tiab] OR intensive care[tiab] OR medical intensive care[tiab] OR medical intensive care unit*[tiab] OR MICU[tiab] OR surgical intensive care[tiab] OR surgical intensive care unit*[tiab] OR SICU[tiab] OR cardiac intensive care unit*[tiab] OR CICU[tiab] OR cardiac intensive care*[tiab] OR critical care[MeSH] OR Intensive Care Units[MeSH] OR Critical Illness[MeSH]))) AND (Physician-patient relations[MeSH] OR physicians[MeSH] OR physicians OR physicians/psychology[MeSH] OR physicians role[MeSH] OR attending[tiab] OR residents OR attending physician[tiab] OR housestaff OR intern[tiab] OR doctor OR doctors OR medical resident OR fellow[tiab] OR trainee[tiab] OR trainee doctor*[tiab] OR trainee physician*[tiab] OR health personnel/psychology[MeSH] OR attitude of health personnel[MeSH] OR clinical competence[MeSH] OR Interdisciplinary communication[MeSH] OR Delivery of health care[MeSH] OR health care personnel[tiab] OR health occupations[MeSH] OR health occupations[tiab] OR interdisciplinary communication[MeSH]))) NOT ((nurse[ti] OR nurses[ti] OR nursing[ti] OR nurse practitioner[ti]))) NOT (((Infant[MeSH] OR Infant*[tw] OR infancy[tw] OR Newborn*[tw] OR Baby*[tw] OR Babies[tw] OR Child[MeSH] OR Child*[tiab] OR Childhood[tw] OR Schoolchild*[tw] OR School age*[tw] OR Preschool*[tw] OR Kid[tw] OR kids[tw] OR Toddler*[tw] OR Adolescent[MeSH] OR Adoles*[tw] OR Teen*[tw] OR "Boy"[tw] OR "Boys"[tw] OR "Girl"[tw] OR "Girls"[tw] OR "Boyhood"[tw] OR "Girlhood"[tw] OR "Juvenile"[tw] OR "Youth"[tw] OR Minors[MeSH] OR Minors*[tw] OR Puberty[MeSH] OR Pubert*[tw] OR Pubescen*[tw] OR Prepubescen*[tw] OR Pediatrics[MeSH] OR Pediatric*[tiab] OR Paediatric*[tiab] OR Peadiatric*[tiab]))) NOT ((animals[mh] NOT humans[mh])))

Medline (OVID), Searched 12/24/2019 and 10/13/2020. Ovid medline® and Epub Ahead of Print, in-Process & Other non-indexed Citations, Daily and Versions ® 1946 to December 24, 2019

1. ("icu" or "intensive care unit" or "critical care" or "intensive care" or "intensive therapy unit" or "intensive treatment unit" or "critically ill" or "critically ill patient" or "medical intensive care" or "MICU" or "surgical intensive care" or "SICU" or "cardiac intensive care" or "CICU" or "intensivist" or "intensivists").ab,kf,kw,ti.
2. exp Intensive Care Units/ or exp Critical Illness/ or exp Critical Care/
3. ("Empathy" or empathy or empathic or empathetic or empathize or emotions or cognitive empath* or empathic concern or empathic distress or affective empathy or behavioral empathy).ab,kf,kw,ti.
4. exp Empathy/
5. 1 or 2
6. 3 or 4
7. (physicians or residents or interns or doctors or care providers or housestaff or fellow or attending or physician-patient relations or physicians' role or intensivist or intensivists).ab,kf,kw,ti.
8. exp Physicians/ or (ATTENDING PHYSICIAN HOSP or Hospital Attending Physician or Junior Physician or Nurse-Physician Relations or Osteopathic Physician or Physician or Physician Patient Relationship or Physician Patient Relationships or Physician Role or Physician, Junior).mp. or (exp *"Internship and Residency"/ or exp *Education, Medical, Graduat
9. 7 or 8
10. (nurse or nurses or nursing or nurse practitioner).ti.
11. (infant or infants or infancy or newborn or baby or babies or child or children or childhood or schoolchild or school age or preschool or kid or kids or toddler or toddlers or adolescent or adolescence or adolescents or teen or tween or teenage or teenager or boy or boys or girl or girls or boyhood or girlhood or juvenile or youth or minors or puberty or pubescence or pubescent or prepubescent or prepubescence or pediatric or pediatrics or paediatric or paediatrics or neonate or neonatal or NICU).ab,ti.

12. (nurse or nurses or nursing or nurse practitioner or (infant or infants or infancy or newborn or baby or babies or child or children or childhood or schoolchild or school age or preschool or kid or kids or toddler or toddlers or adolescent or adolescence or adolescents or teen or tween or teenage or teenager or boy or boys or girl or girls or boyhood or girlhood or juvenile or youth or minors or puberty or pubescence or pubescent or prepubescent or prepubescence or pediatric or pediatrics or paediatric or paediatrics or neonate or neonatal or NICU)).ab,ti.

13. 10 or 11

14. 5 and 6 and 9

15. 14 not 13

Embase (OVID), Searched 12/26/2019 and 10/13/2020

1. ("icu" or "intensive care unit" or "critical care" or "intensive care" or "intensive therapy unit" or "intensive treatment unit" or "critically ill" or "critically ill patient" or "medical intensive care" or "MICU" or "surgical intensive care" or "SICU" or "cardiac intensive care" or "CICU" or "intensivist" or "intensivists").ab,kf,kw,ti.

2. exp Intensive Care Units/ or exp Critical Illness/ or exp Critical Care/

3. ("Empathy" or empathy or empathic or empathetic or empathize or emotions or cognitive empath* or empathic concern or empathic distress or affective empathy or behavioral empathy).ab,kf,kw,ti.

4. exp Empathy/

5. 1 or 2

6. 3 or 4

7. (physicians or residents or interns or doctors or care providers or housestaff or fellow or attending or physician-patient relations or physicians' role or intensivist or intensivists).ab,kf,kw,ti.

8. exp Physicians/ or (ATTENDING PHYSICIAN HOSP or Hospital Attending Physician or Junior Physician or Nurse-Physician Relations or Osteopathic Physician or Physician or Physician Patient Relationship or Physician Patient Relationships or Physician Role or Physician, Junior).mp. or (exp *"Internship and Residency"/ or exp *Education, Medical, Graduate/)

9. 7 or 8

10. (nurse or nurses or nursing or nurse practitioner).ti.

11. (infant or infants or infancy or newborn or baby or babies or child or children or childhood or schoolchild or school age or preschool or kid or kids or toddler or toddlers or adolescent or adolescence or adolescents or teen or tween or teenage or teenager or boy or boys or girl or girls or boyhood or girlhood or juvenile or youth or minors or puberty or pubescence or pubescent or prepubescent or prepubescence or pediatric or pediatrics or paediatric or paediatrics or neonate or neonatal or NICU).ab,ti.

12. (nurse or nurses or nursing or nurse practitioner or (infant or infants or infancy or newborn or baby or babies or child or children or childhood or schoolchild or school age or preschool or

kid or kids or toddler or toddlers or adolescent or adolescence or adolescents or teen or tween or teenage or teenager or boy or boys or girl or girls or boyhood or girlhood or juvenile or youth or minors or puberty or pubescence or pubescent or prepubescent or prepubescence or pediatric or pediatrics or paediatric or paediatrics or neonate or neonatal or NICU)).ab,ti.

13. 10 or 11

14. 5 and 6 and 9

15. 14 not 13

Web of Science, Searched 12/26/2019 and 10/13/2020

#1: TS=((empathy OR empathic OR empathetic OR empathize OR emotions OR cognitive empath* OR empathic concern OR empathic distress OR affective empathy OR behavioral empathy) AND (icu or intensive care unit or critical care or intensive care or intensive therapy unit or intensive treatment unit OR critically ill OR critically ill patient OR medical intensive care OR MICU OR surgical intensive care OR SICU OR cardiac intensive care OR CICU) AND (physicians OR residents OR interns OR doctors OR care providers OR housestaff OR fellow OR attending OR physician-patient relations OR physicians' role OR attending physician OR medical resident OR trainee OR trainee doctor OR trainee physician OR health personnel OR attitude of health personnel OR clinical competence OR health occupations OR interdisciplinary communication))

#2: TI=(nurse OR nurses OR nursing OR nurse practitioner)

#3: TS=(infant OR infants or infancy or newborn or baby or babies or child or children or childhood or schoolchild or school age or preschool or kid or kids or toddler or toddlers or adolescent or adolescence OR adolescents or teen or tween or teenage or teenager or boy or boys or girl or girls or boyhood or girlhood or juvenile or youth or minors or puberty or pubescence or pubescent or prepubescent or prepubescence or pediatric or pediatrics or paediatric or paediatrics or neonate or neonatal or NICU)

#4: #1 NOT #2

#5: #4 NOT #3

CINAHL (EBSCO)

S1: (((empathy OR empathic OR empathetic OR empathize OR emotions)) AND (icu or intensive care unit or critical care or intensive care or intensive therapy unit or intensive treatment unit) AND ((physicians OR residents OR interns OR doctors OR care providers OR housestaff OR fellow OR attending OR physician-patient relations OR physicians' role))

S2: ((MH "Empathy" OR MM "Compassion" OR empathy OR empathic OR empathetic OR empathize OR emotions OR cognitive empath* OR empathic concern OR empathic distress OR affective empathy OR behavioral empathy))) AND ((icu or intensive care unit or critical care or intensive care or intensive therapy unit or intensive treatment unit OR critically ill OR critically ill patient OR medical intensive care OR MICU OR surgical intensive care OR SICU OR cardiac intensive care OR CICU)) AND ((physicians OR residents OR interns OR doctors OR care providers OR housestaff OR fellow OR attending OR physician-patient relations OR physicians' role OR attending physician OR medical resident OR trainee OR trainee doctor OR trainee physician OR health personnel OR attitude of health personnel OR clinical competence OR health occupations OR interdisciplinary communication))

S3: TI nurse OR nurses OR nursing OR nurse practitioner

S4: infant OR infants or infancy or newborn or baby or babies or child or children or childhood or schoolchild or school age or preschool or kid or kids or toddler or toddlers or adolescent or adolescence OR adolescents or teen or tween or teenage or teenager or boy or boys or girl or girls or boyhood or girlhood or juvenile or youth or minors or puberty or pubescence or pubescent or prepubescent or prepubescence or pediatric or pediatrics or paediatric or paediatrics or neonate or neonatal or NICU

S5: S2 NOT

S3

S6: S5 NOT

S4

PsycINFO

(EBSCO)

(((((MH "Empathy" OR MM "Compassion" OR empathy OR empathic OR empathetic OR empathize OR emotions OR cognitive empath* OR empathic concern OR empathic distress OR affective empathy OR behavioral empathy))) AND ((icu OR intensive care unit OR critical care OR intensive care OR intensive therapy unit OR intensive treatment unit OR critically ill OR critically ill patient OR medical intensive care OR MICU OR surgical intensive care OR SICU OR cardiac intensive care OR CICU)) AND ((physicians OR residents OR interns OR doctors OR care providers OR housestaff OR fellow OR attending OR physician-patient relations OR physicians' role OR attending physician OR medical resident OR trainee OR trainee doctor OR trainee physician OR health personnel OR attitude of health personnel OR clinical competence OR health occupations OR interdisciplinary communication)))) NOT (TI (nurse OR nurses OR nursing OR nurse practitioner))) NOT (infant OR infants OR infancy OR newborn OR baby OR babies OR child OR children OR childhood OR schoolchild OR school age OR preschool OR kid OR kids OR toddler OR toddlers OR adolescent OR adolescence OR adolescents OR teen OR tween OR teenage OR teenager OR boy OR boys OR girl OR girls OR boyhood OR girlhood OR juvenile OR youth OR minors OR puberty OR pubescence OR pubescent OR OR prepubescence OR pediatric OR pediatrics OR paediatric OR paediatrics OR neonate OR neonatal OR NICU)

Google Scholar – First 200 results reviewed 12/26/2019

((empathy OR empathic OR empathetic OR empathize OR emotions) AND (physicians OR residents OR interns OR doctors OR care providers OR housestaff OR fellow OR attending OR physician-patient relations OR physicians' role) AND (ICU OR intensive care unit OR critical care))

Appendix 2: Data Extraction Tool

1. Manuscript Title
2. First author
3. Year of Publication
4. Manuscript type?
 - a. If research
 - i. Identify research design
 - ii. Approach to data collection
 - iii. Type of data collected
 - iv. Cut and paste approach to data analysis
 - b. If Opinion
 - i. What type of opinion manuscript?
5. Main purpose of the study (in your own words)
6. Was empathy the primary focus of the article?
 - a. If yes, no further questions
 - b. If empathy was a shared topic, what were the shared topics?
 - c. If empathy was a peripheral topic, what was the main topic?
7. Whose expressions of empathy are being discussed?
8. To whom is empathy being directed?
9. If the manuscript provided a spelled-out definition of empathy (we defined empathy as...), please summarize or copy the definition (use quotes and page numbers as appropriate). If it did not define empathy, please write "N/A"
10. If the manuscript provided an argument as related to empathy, please summarize or copy (use quotes and page numbers as appropriate). If it did not, please write "N/A"
11. If the manuscript presented findings as related to empathy, please summarize or copy (use quotes and page numbers as appropriate). If it did not, please write "N/A"
12. If the manuscript presented conclusions and/or implications as related to empathy, please summarize or copy (use quotes and page numbers as appropriate). If it did not, please write "N/A"

13. If the manuscript presented theories or models as related to its discussion of empathy, please list or describe (use quotes and page numbers as appropriate). If it did not, please write "N/A"
14. If the manuscript addressed how the ICU environment uniquely impacts empathy, please briefly describe how (use quotes and page numbers as appropriate). If it did not, please write "N/A"
15. If the manuscript addressed how the acuity of illness impacts empathy, please briefly describe how (use quotes and page numbers as appropriate). If it did not, please write "N/A"
16. If the manuscript addressed end of life discussions or advanced directives, please briefly describe how (use quotes and page numbers as appropriate). If it did not, please write "N/A"
17. If the manuscript used or mentioned a scale or tool that is used to measure empathy, please list or describe it/them (use quotes and page numbers as appropriate). If it did not, please write "N/A"
18. Did the manuscript involve trainees?
 - a. If yes, which types?
19. Did the manuscript address any specific patient populations?
 - a. If yes, which?
20. Were any of the following topics discussed?
 - a. None
 - b. Burnout
 - c. PTSD
 - d. Work stress
 - e. Other
21. If this manuscript specifically addresses a lack of empathy, please briefly describe how. If it does not, please write N/A.
22. If this manuscript is based on autobiographical narratives (patient or provider stories), please briefly describe how. If it is not, please write N/A.

23. If this manuscript discusses educators or an educational program or training/skills development program that involves empathy, please briefly describe it here. If not, please write N/A.
24. Please select which layer of King's Interacting Systems Theory is addressed in this manuscript (select all that apply)
- a. Personal
 - b. Interpersonal
 - c. Social systems
 - d. None
25. Please briefly describe how this article addresses the layer(s) of King's Interacting Systems Theory. If it does not or you are unsure, please type N/A
26. A huge thank you for your review of this manuscript. It will apply to some articles better than others. Feel free to add comments below to help capture the concepts missed in the form and/or share feedback on the form itself.
27. Final Check - should this article be included in the literature review. As a reminder, the research question is, "Identify and describe the current state of knowledge about empathy as it pertains to physicians in the intensive care unit". Based on this research question, should this manuscript be included?

Appendix 3: Table of all articles

Citation	Manuscript Type	Main Purpose of Manuscript
Primary Focus		
Bein T: Empathy: some thoughtful reflections among a favorable attitude. <i>Intensive care medicine</i> 2017, 43(8):1157-1158.	O	A senior physician's experience of becoming a cancer patient and his reflections on empathy
Crumpei I, Dafinoiu I, Anitei M, Chraif M, Vasile C: The relation of clinical empathy to secondary traumatic stress. <i>In., vol. 33; 2012: 438-442.</i>	R	to explore how empathy and compassion relate to secondary traumatic stress.
Evans G: Bearing Witness to Patient Stories Can Reduce Physician Burnout: A doctor near death awakens to the coldness of her profession...Rana Awdish. <i>Hospital Employee Health</i> 2019, 38(8):N.PAG-N.PAG.	O	This MD's personal narrative, drawing on her experience as an ICU patient, is an argument for more compassionate and empathetic patient-centered care
Klumb PL, Wicki C, Rauers A: Physicians' Interactions with Peers: Empathic Accuracy during Shift Handovers on Intensive-Care Units. <i>Applied psychology Health and well-being</i> 2018, 11(1):102-125.	R	addresses the issue of communication competence in the handover process with focus on empathic inferences and accuracy
Lamiani G, Dordoni P, Vegni E, Barajon I: Caring for Critically Ill Patients: Clinicians' Empathy Promotes Job Satisfaction and Does Not Predict Moral Distress. <i>Front Psychol</i> 2019, 10:2902.	R	"This study aims to assess whether the level of empathy of clinicians working in critical care settings may expose them to moral distress, poor job satisfaction, and intention to quit their job"
Quintel M: "I feel how you feel": reflections about empathy in the relationship between ICU physicians and relatives. <i>Intensive care medicine</i> 2017, 43(11):1723-1724.	O	reflections about empathy in the relationship
Selph RB, Shiang J, Engelberg R, Curtis JR, White DB: Empathy and life support decisions in intensive care units. <i>Journal of general internal medicine</i> 2008, 23(9):1311-1317.	R	To determine how physicians express empathy during discussions with surrogates, develop a framework of empathy, and to determine an association between empathy and family satisfaction
Weckert A, Lorenz G: [Clinical empathy - what we can do in Anaesthesiology, Intensive Care and Pain?]. <i>Anesthesiologie, Intensivmedizin, Notfallmedizin, Schmerztherapie : AINS</i> 2012, 47(6):426-429.	RW	review of current knowledge about empathy and its role in healthcare. Presents suggestions on how to train empathy.
Wolk-Wasserman D: The intensive care unit and the suicide attempt patient. <i>Acta Psychiatrica Scandinavica</i> 1985, 71(6):581-595.	R	"to describe the suicide attempt patients' and their relatives' experiences and reactions during the patients' stay on the intensive care unit...and to survey the feelings and reactions of the personnel"
Zaki J: The caregiver's dilemma: in search of sustainable medical empathy. <i>Lancet (London, England)</i> 2020, 396(10249):458-459.	O	Explore the relationship between burnout and provider empathy

Citation	Manuscript Type	Main Purpose of Manuscript
Shared Focus		
Billings JA: The end-of-life family meeting in intensive care part I: Indications,	RW	review of end of life meetings in the ICU
Cicekci F, Duran N, Ayhan B, Arican S, Ilban O, Kara I, Turkoglu M, Yildirim F, Hasirci I, Karaibrahimoglu A et al: The communication between patient relatives and physicians in intensive care units. <i>BMC anesthesiology</i> 2017, 17(1):97.	R	analyze the attitudes governing the interaction between the patient relatives and the physician in the ICU
Evangelista VC, Domingos TD, Siqueira FP, Braga EM: Multidisciplinary team of intensive therapy: humanization and fragmentation of the work process. <i>Rev Bras Enferm</i> 2016, 69(6):1099-1107.	R	"Considering the importance of humanized care, especially in ICUs, we present the following question: How does the multidisciplinary team understand the humanization of care when experiencing the daily work at an ICU?"
Facioli AM, Amorim FF, de Almeida KJ: A model for humanization in critical care. <i>Perm</i> 2012, 16(4):75-77.	CR	"We present a case in which narrative medicine was used to assist a patient with amyotrophic lateral sclerosis who was dependent on mechanical ventilation and prolonged hospitalization"
Gracia Gozalo RM, Ferrer Tarres JM, Ayora Ayora A, Alonso Herrero M, Amutio Kareaga A, Ferrer Roca R: Application of a mindfulness program among healthcare professionals in an intensive care unit: Effect on burnout, empathy and self-compassion. <i>Medicina intensiva</i> 2019, 43(4):207-216.	R	"To evaluate the effect of a mindfulness training program on the levels of burnout, mindfulness, empathy and self-compassion among healthcare professionals in an Intensive Care Unit of a tertiary hospital"
Levin TT, Moreno B, Silvester W, Kissane DW: End-of-life communication in the intensive care unit. <i>General Hospital Psychiatry</i> 2010, 32(4):433-442.	RW	to summarize current research and recommendations for ICU end of life communication
Poser K, Chase M: Appreciation of Humanity and Empathy in Critical Care...Dynamics of Critical Care Conference, September 28–30, 2020, Windsor, Ontario. <i>Canadian Journal of Critical Care Nursing</i> 2020, 31(1):16-16.	CA	"inform the design of evidence-based strategies to enhance critical care nurses' abilities to appreciate the humanity of critically ill patients and to empathize with them."
Schaefer KG, Block SD: Physician communication with families in the ICU: evidence-based strategies for improvement. <i>Current opinion in critical care</i> 2009, 15(6):569-577.	RW	review of effective physician communication with families to improve outcomes for both patients and family members in the ICU
Schram AW, Hougham GW, Meltzer DO, Ruhnke GW: Palliative Care in Critical Care Settings: A Systematic Review of Communication-Based Competencies Essential for Patient and Family Satisfaction. <i>The American journal of hospice & palliative care</i> 2017, 34(9):887-895.	RW	review on physician competency domains outside direct clinical at the end of life (EOL) to inform future research and assist in curricular development
van Mol MMC, Nijkamp MD, Bakker J, Schaufeli WB, Kompanje EJO: Counterbalancing work-related stress? Work engagement among intensive care professionals. <i>Australian critical care : official journal of the Confederation of Australian Critical Care Nurses</i> 2017, 31(4):234-241.	R	"to explore how job resources and job demands are associated with work engagement, and 2) determine the advantageous personal resources required for work engagement."
Wurm E, Gupta N, Neuendorf K, Boissy A, Perez-Protto S: Virtual end-of-life discussions are feasible and helpful. <i>Critical Care Medicine Conference: 48th Critical Care Congress of the Society of Critical Care Medicine, SCCM</i> 2019, 47(1).	CA	"to initial experiences conducting end of life discussions virtually with surrogate decision makers"
Yadav KN, Josephs M, Gabler NB, Detsky ME, Halpern SD, Hart JL: What's behind the white coat: Potential mechanisms of physician-attributable variation in critical care. <i>PLoS ONE</i> 2019, 14(5):e0216418.	R	"to identify attributes that are feasible for use among physicians, differ across intensivists, and may influence their individual approaches to clinical decision making (e.g., prognostication)."

Types of Manuscripts Included: Opinion (O); Research (R); Review (RW); Case Report (CR); Conference Abstract (CA); Quality Improvement (QI).

Citation	Manuscript Type	Main Purpose of Manuscript
Peripheral Focus		
Arnold RM, Back AL, Barnato AE, Prendergast TJ, Emlet LL, Karpov I, White PH, Nelson JE: The Critical Care Communication project: improving fellows' communication skills. <i>Journal of Critical Care</i> 2015, 30(2):250-254.	R	"The aim of this study was to develop an evidence-based communication skills training workshop to improve the communication skills of critical care fellows."
Azoulay E, Herridge M: Understanding ICU staff burnout: The show must go on. <i>American Journal of Respiratory and Critical Care Medicine</i> 2011, 184(10):1099-1100.	O	to describe the level of burn out syndrome in the ICU
Azoulay É, Pochard F: Communication with family members of patients dying in the intensive care unit. <i>Current opinion in critical care</i> 2003, 9(6):545-550.	RW	Review of information provided to ICU families and creation of guidelines for improving care to the families of dying patients
Bandini J, Mitchell C, Epstein-Peterson ZD, Amobi A, Cahill J, Peteet J, Balboni T, Balboni MJ: Student and Faculty Reflections of the Hidden Curriculum. <i>The American journal of hospice & palliative care</i> 2017, 34(1):57-63.	R	"The purpose of this qualitative study was to examine medical faculty and students' perceptions of psychological, moral, and spiritual challenges during medical training in caring for critically ill patients"
Barwise AK, Nyquist CA, Espinoza Suarez NR, Jaramillo C, Thorsteinsdottir B, Gajic O, Wilson ME: End-of-Life Decision-Making for ICU Patients With Limited English Proficiency: A Qualitative Study of Healthcare Team Insights. <i>Critical care medicine</i> 2019, 47(10):1380-1387.	R	to identify and understand the barriers and facilitators that influence decision-making about end-of-life care in the ICU
Beers AC: Service project intensive care. <i>Intensive care medicine</i> 2012, 2:5196.	QJ	Assess the experience or perception of patients and visitors in the ICU
Boyle DK, Kochinda C: Enhancing collaborative communication of nurse and physician leadership in two intensive care units. <i>JONA: The Journal of Nursing Administration</i> 2004, 34(2):60-70.	R	study a collaborative communication intervention in the ICU
Brauchle M, Wildbahner T: [The care of relatives and ICU teams during a crisis]. <i>Med Klin Intensivmed Notfmed</i> 2018, 10:10.	O	present the BASIS-model of Crisis Intervention in the ICU
Deters JS, Hayes MM, Huang G, Weiss J, McSparron JI: Cultivating compassion to lesson burnout: The implementation of an intensive care unit (ICU) follow up conference to encourage reflection on icu survivors. <i>American Journal of Respiratory and Critical Care Medicine Conference: American Thoracic Society International Conference, ATS</i> 2018, 197.	CA	describe implementation of an intensive care unit (ICU) follow up conference
Dier H, Hormann C: [Providing support to relatives of organ donors in the intensive care unit]. <i>Medizinische Klinik, Intensivmedizin und Notfallmedizin</i> 2014, 109(6):418-421.	O	Present structure for meetings with families for organ donation
Ely EW: Swimming pool in the ICU. <i>Intensive care medicine</i> 2016, 42(9):1502-1503.	O	reflection about making the ICU a place where end-of-life wishes and resolutions are respected by the ICU team
Ernecoff NC, Curlin FA, Buddadhumaruk P, White DB: Health Care Professionals' Responses to Religious or Spiritual Statements by Surrogate Decision Makers During Goals-of-Care Discussions. <i>JAMA Intern Med</i> 2015, 175(10):1662-1669.	R	To examine discussion of religious and spiritual considerations during family meetings

Types of Manuscripts Included: Opinion (O); Research (R); Review (RW); Case Report (CR); Conference Abstract (CA); Quality Improvement (QJ).

Citation	Manuscript Type	Main Purpose of Manuscript
Peripheral Focus, continued		
Hinkle LJ, Bosslet GT, Torke AM: Factors associated with family satisfaction with end-of-life care in the ICU: a systematic review. <i>Chest</i> 2015, 147(1):82-93.	RW	What factors are associated with family satisfaction with end-of-life care in the ICU?
Kompanje EJ, van Mol MM, Weigel J: Will we become more compassionate or empathic intensive care professionals by watching films and documentaries about suffering? <i>Intensive care medicine</i> 2017, 43(4):560-561.	O	Review of "In Shock"
Kompanje EJO: Editorial comment on Roshdy Asharf: A lesson from a dying intensive care fellow! Intensive care ethics clearly exposed. <i>Trends in Anaesthesia and Critical Care</i> 2018, 22:8-9.	O	looks at reactions to films/books and emotional connection
Ludmir J, Netzer G: Family-Centered Care in the Intensive Care Unit-What Does Best Practice Tell Us? <i>Seminars in respiratory and critical care medicine</i> 2019, 40(5):648-654.	RW	Family-centered care in the ICU - benefits and framework to improve
Marini JJ: Re-tooling critical care to become a better intensivist: something old and something new. <i>Crit Care</i> 2015, 19:53.	O	history of ICU and future directions for care
Miller M, Iwashyna T, Bosk E, Krein S: Daily interruption of sedation: Fear and loathing in the ICU. <i>Critical care medicine</i> 2010, 12:A174.	CA	to examine "physicians' understandings of DIS are influenced by strong emotional responses"
Mistraletti G, Mezzetti A, Anania S, Ionescu Maddalena A, Del Negro S, Giusti GD, Gili A, Iacobone E, Pulitano SM, Conti G et al: Improving communication toward ICU families to facilitate understanding and reduce stress. Protocol for a multicenter randomized and controlled Italian study. <i>Contemporary Clinical Trials</i> 2019, 86(105847).	R	trial to improve communication in Italian ICUs
Newcomb AB, Allred C, Grove C, Newcomb H, Mohess D, Griffen MM, Dort J: Surgeon Communication and Family Understanding of Patient Prognosis in Critically Ill Surgical Patients: A Qualitative Investigation Informs Resident Training. <i>Journal of Surgical Education</i> 2019, 76(6):e77-e91.	R	family understanding of patient prognosis compared to the surgeon's assessment and to characterize resident mentoring regarding difficult healthcare discussions
Rabow MW, Hauser JM, Adams J: Supporting family Caregivers at the end of life - "They don't know what they don't know". <i>Jama-Journal of the American Medical Association</i> 2004, 291(4):483-491.	RW	perspective on supporting family caregivers at the end of life
Santhosh L, Jain S, Brady A, Sharp M, Carlos WG: Intensive Care Unit Educators: A Multicenter Evaluation of Behaviors Residents Value in Attending Physicians. <i>Annals of the American Thoracic Society</i> 2017, 14(4):513-516.	R	identifying the teaching behaviors of ICU physicians that are commonly observed in esteemed faculty educators
Siegel MD: End-of-life decision making in the ICU. <i>Clin Chest Med</i> 2009, 30(1):181-194, x.	RW	"to build a framework on which to guide end of life decision making in the ICU."

Types of Manuscripts Included: Opinion (O); Research (R); Review (RW); Case Report (CR); Conference Abstract (CA); Quality Improvement (QI).

CHAPTER 3: DISCUSSION

DISCUSSION

Implications:

This thesis research generated a detailed account of empathy in physicians in the intensive care unit—one that reveals many gaps in our understanding of this phenomenon. It revealed that, at present, there is no agreed upon definition of empathy for the ICU context. This is a significant gap in our knowledge. How can we portend to understand a topic, or teach future generations to practice it, if we have failed to define it? In the few definitions offered in the literature, we identified three different domains that were addressed: cognitive, affective and action based. In the intensive care unit setting, we propose that the definition of empathy should encompass all three domains – cognitive, emotional, and action. The way we define empathy is deeply important; it can impact the way we learn it, the way we deploy it, and the way we teach it to others. We recommend defining empathy as a “cognitive attribute that involves an ability to understand the patient's pain, suffering, and perspective combined with a capability to communicate this understanding and an intention to help.”¹

As described by Jodi Halpern, modern medicine has historically encouraged emotional detachment in its physicians.⁷ This detachment was thought to avoid the risks of empathy which include burnout, desensitization, and compassion fatigue.⁷ In our analysis of the current literature, a recurring theme we identified was the spectrum of connection and distance that exists between the ICU physician and the patient. Halpern argues that the ideal practice of medicine requires physicians to move beyond the cognitive realm of rational understanding to the emotional resonance of connected clinical empathy.⁷ If we are expecting ICU physicians to

practice this clinical empathy, we must be clear about what we are asking. A clear definition is the first step towards this clarity.

As medical professionals, we measure what we value. We measure everything from board exam scores to the granting of medical licenses, to numbers of publications for academic promotion. This review revealed that only a small minority of studies measured empathy. Those that did measured a provider's self-report of empathy, not the empathy experienced by patients or others. After conducting this research, I posit that, if we value empathy, we need to shift from measurement using multiple choice answers, to focus on what make physicians great: empathy.

The manuscripts in this review did address facilitators and barriers to the development of empathy, but they did not adequately address how to teach healthcare professionals to practice empathy. Of the 45 articles, only three studies were educational interventions:^{8,9,10} one examined mindfulness and the other two studied communication. Empathy was not the primary focus of any of these articles. Several studies mentioned the importance of teaching empathy in passing or as a closing recommendation, but no proven strategies were reported.

Military Relevance:

Empathy is a concept with multiple layers of military relevance. First, among healthcare professionals, optimization of patient care by safely practicing empathic communication may provide higher quality patient care. Patients are not the only recipients of patient empathy, however, and patient care is not the only realm within which it is relevant. Empathy is an essential element of prosocial behavior, effective team dynamics, and leadership. Developing a more in-depth understanding of how physicians empathize with members of the healthcare team in a uniquely stressful environment such as the ICU may help us understand the role empathy

plays among teams in combat or other military specific situations. Further, it may allow us to teach our leaders connect more effectively with the subordinates. The need to negotiate different degrees of connection and distance with our subordinates is one of the challenges that all military leaders must wrestle with. We suggest that empathy as experienced in the ICU by physician leaders shares many similarities with leaders making intense life-or-death decisions in the military. Finally, if we can understand how ICU physicians experience fulfillment and joy from empathy, as opposed to experiencing emotional exhaustion, we may develop tools to help us in our battle against moral injury and burnout.

Limitations:

This review has several limitations. Most notably, significant heterogeneity in the manuscripts impedes drawing definitive conclusions regarding empathy in the ICU. Heterogeneity existed regarding the degree that the articles focused on empathy, whether or not they chose to define empathy, and additional topics addressed. Due to the narrow nature of our research question—i.e., addressing empathy among only ICU physicians caring for adult patients—we might have missed other findings, definitions, or guidelines from the pediatric or nursing literature. While the research question driving this thesis research was chosen purposefully given the dramatically different relationships that exist between adult patients and intensivists compared to pediatric patients or nursing staff, a broader review of all ICU contexts may still have revealed additional findings.

Future Directions:

The scoping review revealed several gaps in the literature and opened many avenues for exploration. First, no clear answers were revealed with respect to teaching empathy to trainees in the intensive care unit. Questions remain about the objectives of such curricula as well as the

best educational strategies. At this point, it is largely unclear if this education is even possible. Second, the scoping review did not answer questions regarding whether empathy is more a product of nature or nurture. Is empathy innate or can it be taught? Must individuals be born with a certain level of empathy to benefit from further education? Is there a benefit to teaching physicians to perform empathic tasks and speak in empathic tones or must the education focus on teaching physicians to perceive or feel empathy? Finally, how does empathy differ, if at all, across levels of experience? Should we target different aspects of empathy for our teaching of learners at different levels? These questions are just a few of the many generated by this scoping review.

Conclusions:

Overall, this review revealed that empathy among physicians in the ICU is not a dichotomous phenomenon. It instead exists on a spectrum along which providers must find balance to optimize patient care and enhance their own wellbeing. A four-step process—i.e., 1) clearly defining empathy, 2) transparently addressing risks and benefits, 3) providing education regarding reflective practice, and 4) developing supportive environments—may optimize the benefits of empathy in the intensive care environment while protecting our patients and providers from its potential harms. This review revealed optimization of empathy in this unique context is poorly understood and that there are many areas ripe for further investigation.

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