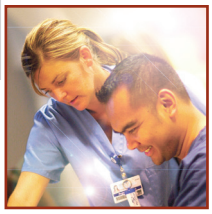

COVID-19 and Moral Distress: A Pediatric Critical Care Survey

By Tessy A. Thomas, DO, MBE, F. Daniel Davis, PhD, Shelley Kumar, MSc, MS, Satid Thammasitboon, MD, MHPE, and Cynda H. Rushton, PhD, RN

Background Moral distress adversely affects the delivery of high-quality patient care and places health care professionals at risk for burnout, moral injury, and the loss of professional integrity.

Objectives To investigate whether pediatric critical care professionals are experiencing moral distress during the COVID-19 pandemic and, if so, for what reasons.

Methods An exploratory survey of pediatric critical care professionals was conducted via the Pediatric Acute Lung Injury and Sepsis Investigators Network from April to May 2020. The survey was derived from a framework integrating contemporary literature on moral distress, moral resilience, and expert consensus. Integration of descriptive statistics for quantitative data and thematic analysis for qualitative data yielded mixed insights.

Results Overall, 85.8% of survey respondents reported moral distress. Nurses reported higher degrees of moral distress than other professional groups. Inducers of moral distress were related to challenges to professional integrity and lack of organizational support. Five themes were identified: (1) psychological safety, (2) expectations of leadership, (3) connectedness through a moral community, (4) professional identity challenges, and (5) professional versus social responsibility. Most respondents were confident in their ability to reason through ethical dilemmas (76.0%) and think clearly when confronting an ethical challenge even when pressured (78.9%).

Conclusions During the COVID-19 pandemic, pediatric critical care professionals are experiencing moral distress due to various factors that challenge their professional integrity. Despite these challenges, they also exhibit attributes of moral resilience. Organizations have opportunities to cultivate a psychologically safe and healthy work environment to mitigate anticipatory, present, and lingering moral distress. (*American Journal of Critical Care.* 2021;30:e80-e98)

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Beyond anecdotal accounts, little is known about the moral distress experiences of health care professionals working in intensive care settings during the COVID-19 pandemic.[1,2] Moral distress occurs when health care professionals know what the right thing to do is in an ethically challenging situation but encounter internal or external constraints in taking that action and sustaining their integrity.[3-5]

Empirical research links moral distress with adverse outcomes—including burnout, moral injury, diminished well-being, and patient safety deficits—in normal circumstances.[6-9] In a pandemic, moral distress may arise with greater intensity owing to new constraints, uncertainty, and the disruption of normal routines. During the COVID-19 pandemic, are pediatric health care professionals experiencing moral distress? If so, what are the sources of that moral distress, and to what extent are the professionals morally resilient under these circumstances? We conducted a survey of pediatric critical care professionals to answer these important questions.

Methods

From April to May 2020, we conducted an exploratory survey of a multiprofessional cohort of pediatric critical care workers to investigate their experiences of moral distress during the pandemic. The scientific committee of the Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) Network approved the survey for distribution within a network of pediatric intensive care units. The institutional review board at Geisinger Medical Center determined that this study was exempt from the need for approval.

Data Collection Instrument

Well-established inventories of moral distress—the Moral Distress Scale,[10] Moral Distress Scale–Revised,[11] and Measure of Moral Distress Scale for Healthcare Professionals[12]—do not take into account the unique ethical challenges spawned by the current pandemic. Therefore, we created a survey using a systematic approach with pandemic-specific items guided by Messick's validity framework.[13,14] To establish content validity, 3 experts in bioethics (F.D.D.), moral distress (T.A.T.), and moral resilience (C.H.R.) collaborated as a formative committee to develop a conceptual framework, grounded in a set of empirically based hypotheses about moral distress and moral resilience (see Figure), and used this framework to inform the survey design (Supplemental Tables 1 and 2).

Survey questions about inducers of and responses to moral distress were developed through our professional reflection and integration of insights from a literature review.[6-10] Integrity-related inducers of moral distress were defined as factors that may challenge or sustain commitments to the overall intellectual and moral excellence of the health care professional.[5] The questions pertaining to moral resilience incorporated items from the Rushton Moral Resilience Scale.[15] The questions about principles for decision-making were derived from bioethics literature on the allocation of scarce resources in public health emergencies.[16-18] A summative committee comprising the formative committee members, the content and methodological expert (S.T.), and 3 additional end users (1 nurse, 1 attending physician, and 1 respiratory therapist) verified the survey's validity and provided feedback to improve the survey's content and response processes (ie, terms, clarity, and format).[19]

> Moral distress occurs when health care professionals are not able to preserve their integrity.

Before survey distribution, we pilot tested the survey online via SurveyMonkey (Momentive) with 5 potential respondents to assess practicality, feasibility, and clarity. The final survey had 13 closed-ended (5-point) Likert scale questions and 2 open-ended questions (Supplemental Table 1). We used snowball survey sampling[20] through the PALISI Network, starting with the scientific committee members, who then disseminated the survey to other potential

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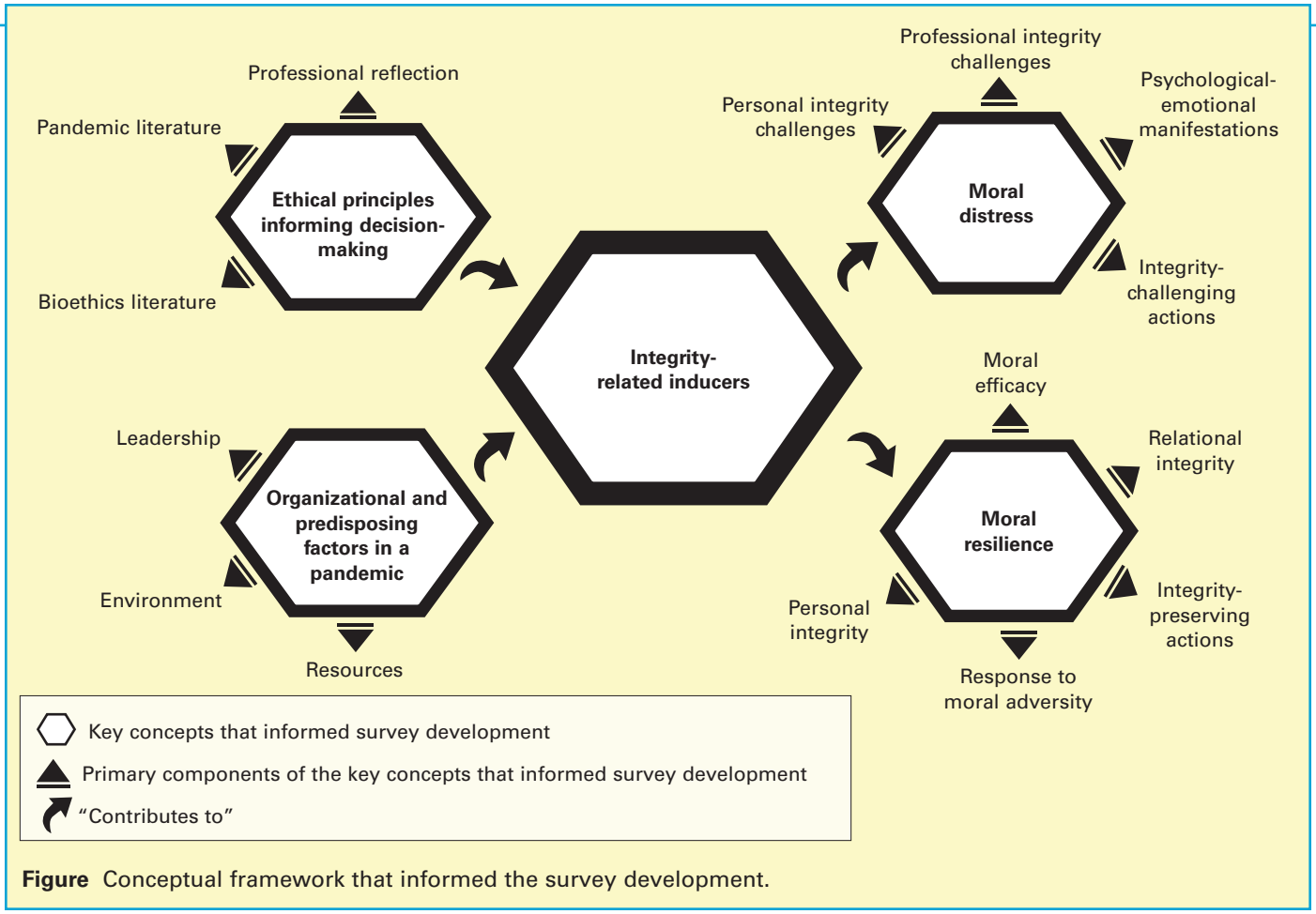

Figure Conceptual framework that informed the survey development.

respondents within the network. We included any health care professional working in a pediatric intensive care unit within North America and excluded those who worked outside North America.

Data Analysis

Data were analyzed using SAS statistical software, version 9.4 (SAS Institute Inc). We used descriptive statistics to summarize respondents' demographics. The Kruskal-Wallis test was used for multiple group comparisons, followed by the Dwass-Steel-Critchlow-Fligner procedure for pairwise post hoc analysis using pairwise 2-sample Wilcoxon comparisons.[21] Reliability was measured using the Cronbach α.[22] Given the exploratory nature of the study, we aimed to attain representation across professions and regions, and thus did not calculate the sample size to test a specific hypothesis a priori. Given the snowball sampling, we did not know the sampling end denominator.

The qualitative data were analyzed using an interpretivist approach to thematic analysis.[23] Using the quantitative analysis results and the aforementioned conceptual framework, T.A.T. reviewed the data, created a list of codes, and categorized themes. T.A.T. and F.D.D. iteratively reached consensus on the list of finalized themes and representative quotes. To establish trustworthiness of the results, T.A.T. discussed with F.D.D., C.H.R., and S.T. the nuances of the data and potential influences of individual backgrounds (ie, reflexivity).[23] Additionally, member checking, a qualitative research technique used for respondent validation of the data, was completed with 3 pediatric critical care health professionals to verify the identified themes and to gain additional insights.

Results

The characteristics of the 337 respondents who completed the survey are listed in Table 1. Physicians and advanced practice providers (APPs) made up 49.0% of the respondents, with nurses, respiratory therapists, and other professionals constituting 26.4%, 15.7%, and 8.9%, respectively. Overall, 89.0% percent of the respondents considered their role to be essential to their organization's response to the pandemic. A total of 85.8% of respondents (93.3% of nurses, 81.2% of physicians and APPs, and 81.1% of respiratory therapists) reported that they were experiencing varying degrees of moral distress, with 51.6% acknowledging a moderate amount to a great deal of moral distress. Similarly, 85.5% of respondents

Table 1
Overall characteristics of survey respondents

Characteristic	No. (%) of respondents				
	Overall (n=337)	Physicians/APPs (n=165)	Nurses (n=89)	Respiratory therapists (n=53)	Others[a] (n=30)
Role essential to your organizational response to pandemic? (Yes)	300 (89.0)	143 (86.7)	81 (91.0)	51 (96.2)	25 (83.3)
Age, y					
25-34	128 (38.0)	47 (28.5)	48 (53.9)	22 (41.5)	11 (36.7)
35-44	111 (33.0)	63 (38.2)	24 (27.0)	12 (22.6)	12 (40.0)
45-54	64 (19.0)	35 (21.2)	13 (14.6)	13 (24.5)	3 (10.0)
55-64	30 (8.9)	18 (10.9)	3 (3.4)	5 (9.4)	4 (13.3)
≥65	3 (0.9)	2 (1.2)	0 (0.0)	1 (1.9)	0 (0.0)
Missing	1 (0.3)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)
Years in professional role					
<3	75 (22.3)	44 (26.7)	19 (21.3)	10 (18.9)	2 (6.7)
≥3 but <5	38 (11.3)	20 (12.1)	13 (14.6)	3 (5.7)	2 (6.7)
≥5 but <10	80 (23.7)	36 (21.8)	15 (16.9)	15 (28.3)	14 (46.7)
≥10 but <15	51 (15.1)	19 (11.5)	16 (18.0)	9 (17.0)	7 (23.3)
≥15 but <20	38 (11.3)	17 (10.3)	17 (19.1)	2 (3.8)	2 (6.7)
≥20	55 (16.3)	29 (17.6)	9 (10.1)	14 (26.4)	3 (10.0)
Live in North American region					
Northeast	37 (11.0)	30 (18.2)	3 (3.4)	3 (5.7)	1 (3.3)
Southeast	116 (34.4)	31 (18.8)	55 (61.8)	13 (14.5)	17 (56.7)
Midwest	105 (31.2)	43 (26.1)	31 (34.8)	25 (47.2)	6 (20.0)
Southwest	49 (14.5)	43 (26.1)	0 (0.0)	0 (0.0)	6 (20.0)
West	30 (8.9)	18 (10.9)	0 (0.0)	12 (22.6)	0 (0.0)
Extent of experiencing moral distress					
Not at all	48 (14.2)	31 (18.8)	6 (6.7)	10 (18.9)	1 (3.3)
A little	115 (34.1)	52 (31.5)	27 (30.3)	19 (35.9)	17 (56.7)
A moderate amount	116 (34.4)	62 (37.6)	36 (40.5)	10 (18.9)	8 (26.7)
A lot	38 (11.3)	11 (6.7)	12 (13.5)	11 (20.8)	4 (13.3)
A great deal	20 (5.9)	9 (5.5)	8 (9.0)	3 (5.7)	0 (0.0)
Extent lingering distress after facing a challenging ethical situation weighs you down					
Not at all	49 (14.5)	31 (18.8)	7 (7.9)	10 (18.9)	1 (3.3)
A little	106 (31.5)	50 (30.3)	27 (30.3)	12 (22.6)	17 (56.7)
A moderate amount	102 (30.3)	48 (29.1)	30 (33.7)	18 (34.0)	6 (20.0)
A lot	62 (18.4)	30 (18.2)	19 (21.4)	8 (15.1)	5 (16.7)
A great deal	18 (5.3)	6 (3.6)	6 (6.7)	5 (9.4)	1 (3.3)

Abbreviation: APP, advanced practice provider.

[a] Others included chaplains, pharmacists, social workers, physical therapists, occupational therapists, and administrators.

(92.1% of nurses, 81.2% of physicians and APPs, and 81.1% of respiratory therapists) reported that after facing a challenging ethical situation, lingering distress weighed them down to various degrees, with 54.0% acknowledging that it weighed them down a moderate amount to a great deal.

Ethical Principles Informing Decision-making

Of the several ethical principles that could inform decisions about triage or resource allocation, the 2 highest-scoring principles were "saving as many lives as possible" and "saving as many life-years as possible" (Supplemental Table 3).[16-18] The "first come, first serve" principle was more highly regarded by nurses and respiratory therapists than by physicians and APPs ($P=.03$ and $P=.005$, respectively). In a hypothetical choice of only 1 ethical principle with which to make decisions, 52.2% of the respondents selected the principle of "saving as many lives as possible" and 28.5% selected "saving as many life-years as possible."

Moral Distress Inducers. Overall, respondents reported being morally distressed to various degrees about the potential for spreading infection to loved ones at home (93.8%), working with limited resources (89.0%), and witnessing their patients dying alone (88.0%). The descriptive statistics of other moral distress inducers are presented in Table 2. According

Table 2
Descriptive statistics of potential situations that induce moral distress

Survey items on potential situations	Overall (n=337)	Physicians/APPs (n=165)	Nurses (n=89)	Respiratory therapists (n=53)	Others[a] (n=30)	P[b]
Related to professional integrity Scale: 1=not at all distressed to 5=extremely distressed OR 1=not at all to 5=a great deal			Median score on scale (first quartile-third quartile)			
Cronbach α			0.88			
Spreading infection to your patient(s)	3 (2-4)	2 (2-4)	3 (2-4)	3 (2-4)	2 (2-3)	.33
Protecting your colleagues/staff from increased risks and exposures	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	.87
Working with limited resources	3 (2-5)	3 (2-4)	4 (3-5)	4 (3-5)	3 (2-4)	<.001
Experiencing negative consequences at work	2 (1-3)	1 (1-3)	2 (1-4)	2 (1-4)	2 (1-3)	.03
Making decisions to limit/forgo interventions	3 (2-4)	3 (2-4)	3 (2-4)	2 (2-4)	2 (1-3)	.14
Losing your ability to advocate for your individual patients' needs	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	.40
Making triage/resource allocation decisions	2 (2-3)	2 (2-3)	2 (2-3)	2 (1-4)	2 (2-4)	.95
Shifting decision-making authority to hospital triage officers/teams	2 (2-3)	2 (2-4)	3 (2-3)	2 (2-4)	2.5 (1-3)	.47
Having your close therapeutic clinician-patient relationships be disrupted	3 (2-4)	3 (2-4)	3 (2-4)	2 (2-4)	3 (2-5)	.03
Having to assume other responsibilities outside of your current professional role	2 (1-3)	2 (1-3)	2 (2-3)	2 (1-3)	2 (1-2)	.004
Related to personal integrity Scale: 1=not at all distressed to 5=extremely distressed			Median score on scale (first quartile-third quartile)			
Cronbach α			0.75			
Spreading infection to your loved ones at home	4 (2-4)	3 (2-4)	4 (3-5)	4 (2-5)	3 (2-4)	.02
Being infected while performing your professional duties in the hospital	3 (2-4)	2 (2-4)	3 (2-4)	3 (2-5)	2 (2-4)	.01
Communicating changes in practices	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	.31
Witnessing your patients dying alone	4 (2-5)	4 (2-5)	4 (3-5)	4 (3-5)	4 (2-5)	.17
Related to lack of organizational support Scale: 1=extremely effective to 5=not effective			Median score on scale (first quartile-third quartile)			
Cronbach α			0.88			
Policies regarding crisis response	3 (2-3)	3 (2-3)	3 (2-3)	3 (2-4)	3 (2-4)	.27
Forums with leaders to share concerns	3 (2-3)	2 (2-3)	3 (2-3)	3 (2-4)	3 (2-4)	.004
Information regarding hazard supplemental compensation	5 (4-5)	5 (3-5)	5 (4-5)	5 (4-5)	5 (4-5)	.55
Opportunities for individual or team-based approach to address stress	3 (2-4)	3 (2-4)	4 (3-4)	4 (3-4)	4 (3-5)	.01
Pathways for requesting ethics consultation or advice	3 (3-4)	3 (2-4)	4 (3-4)	4 (3-5)	3 (3-4)	<.001
Information regarding confidential reporting mechanisms	3 (2-4)	3 (2-4)	3 (3-4)	3 (3-4)	3 (3-4)	.02
An environment that promotes speaking up about concerns without fear of retaliation	3 (1-4)	2 (1-3)	3 (2-4)	3 (2-4)	3 (1-4)	.03
Communication updates regarding system-based changes	2 (2-3)	2 (1-3)	2 (2-3)	2 (2-4)	2 (2-3)	.15
Psychological and emotional support for staff	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	.56
Extended staff services (eg, child care, respite care)	3 (2-4)	3 (2-4)	3 (2-4)	4 (2-5)	3 (2-4)	<.001

Abbreviation: APP, advanced practice provider.

[a] Others included chaplains, pharmacists, social workers, physical therapists, occupational therapists, and administrators.
[b] All *P* values were computed using the Kruskal-Wallis test and compare the median response of the 4 groups based on independent samples. A significant *P* value means that the median of 1 of the groups is significantly different. The Steel-Dwass-Critchlow-Fligner procedure was used for pairwise post hoc analysis (see Supplemental Table 4).

Table 3
Descriptive statistics of attributes of moral resilience

Survey items on attributes	Overall (n=337)	Physicians/APPs (n=165)	Nurses (n=89)	Respiratory therapists (n=53)	Others[a] (n=30)	P[b]
Related to moral resilience (scales explained in footnotes)	Median score on scale (first quartile-third quartile)					
Cronbach α	0.66					
Extent fears cause to act in ways that compromise values[c]	4 (4-5)	5 (4-5)	4 (4-5)	4 (4-5)	5 (4-5)	.17
Confident in ability to reason through ethical dilemmas in professional role[d]	3 (3-4)	3 (2-4)	3 (2-4)	4 (3-4)	4 (3-4)	.03
Think clearly when confronting an ethical challenge even when pressured[e]	3 (3-5)	3 (3-5)	3 (2-5)	4 (3-5)	4 (3-5)	.36
Extent difficult ethical situations leave feeling powerless[c]	4 (3-4)	4 (3-5)	4 (2-4)	4 (3-4)	4 (3-4)	.01
Extent overwhelmed by persistent ethical conflicts[c]	4 (3-5)	4 (4-5)	4 (3-4)	4 (3-5)	4 (4-5)	.004
Extent push yourself beyond what is healthy[c]	4 (3-4)	4 (3-4)	4 (3-4)	4 (3-4)	4 (3-5)	.16
Extent choices and behaviors consistently reflect values[e]	4 (3-5)	4 (3-5)	4 (3-5)	4 (2-5)	4 (4-5)	.03
Implementing the decisions of others when it threatens own values[f]	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	3.5 (3-4)	.39

Abbreviation: APP, advanced practice provider.

[a] Others included chaplains, pharmacists, social workers, physical therapists, occupational therapists, and administrators.
[b] All *P* values were computed using the Kruskal-Wallis test and compare the median response of the 4 groups based on independent samples. A significant *P* value means that the median of 1 of the groups is significantly different. The Steel-Dwass-Critchlow-Fligner procedure was used for pairwise post hoc analysis (see Supplemental Table 4).
[c] Items were reverse coded: 1=a great deal, 2=a lot, 3=a moderate amount, 4=a little, 5=not at all.
[d] Can be read as 1=not confident, 2=somewhat confident, 3=quite confident, 4=very confident, 5=extremely confident.
[e] Items were not reverse coded: 1=not at all, 2=a little, 3=a moderate amount, 4=a lot, 5=a great deal.
[f] Items were reverse coded: 1=extremely distressed, 2=very distressed, 3=quite distressed, 4=somewhat distressed, 5=not at all distressed.

to the post hoc analysis (Supplemental Table 4), nurses and respiratory therapists were significantly more distressed than physicians and APPs about working with limited resources. Nurses reported significantly higher levels of moral distress than physicians and APPs about having to assume other responsibilities outside of their current professional role ($P=.01$) and experiencing negative consequences at work for voicing safety concerns ($P=.03$).

Lack of Organizational Support. The respondents across professions reported the need for more effective organizational support, as outlined in Table 2. Overall, respondents reported that their organizations were quite effective in developing crisis response policies, providing communication updates, and offering staff emotional support services during the pandemic. However, there was collective agreement across all professional roles that organizations were not effective in providing information regarding hazard supplemental compensation for staff during the pandemic. Whereas the physicians and APPs perceived organizational support in other areas to be effective, nurses and respiratory therapists highlighted room for improvement in having forums with leaders to share concerns, an environment that promotes speaking up about concerns without fear of retaliation, opportunities for individual or team-based approaches to address stress, information regarding confidential reporting mechanisms within the organization, and pathways for requesting ethics consultations or advice.

Moral Resilience Attributes. Survey questions designed to assess the respondents' moral resilience (Table 3; Supplemental Table 2)—the capacity of an individual to sustain or restore their integrity in response to moral adversity[24]—were selected from a validated scale.[15] Overall, 76.0% of the respondents reported being confident (quite confident to extremely confident) in their ability to reason through ethical dilemmas in their professional role, and 78.9% were confident (a moderate amount to a great deal) in their ability to think clearly when confronting an ethical challenge even when pressured. We observed reverse correlation between moral resilience items and the presence of moral distress and lingering moral distress (Supplemental Table 5).

Integrated Qualitative and Quantitative Analysis

We identified 5 themes from the qualitative data: (1) psychological safety, (2) expectations of leadership, (3) connectedness through a moral community, (4) professional identity challenges, and (5) professional versus social responsibility. The themes, descriptions, and examples of quotes are included in a joint display (Table 4) that brings the quantitative and

Table 4
Joint display: integrated quantitative and qualitative data analysis[a]

Theme	Survey item	Perceived distress/ effectiveness, overall, % (n=337)	Qualitative quotes
Psychological safety Health care professionals express need for safe forums to voice concerns within the organization without fears of retaliation or negative consequences for their job.	Experiencing negative consequences at work	56.0 (somewhat-extremely distressed)	Leadership assurance and communication to be able to have a voice and not fear for having one The feelings of being dismissed without any dialogue taking place brings down morale. Some health care workers may refrain from speaking up about personal needs/ stresses due to concern for and being afraid of repercussions when decisions about furloughs, cutting time, etc are being made. We need open forums. We need more unity from the members of my organization and colleagues; I think if our health care system works together, we can get through this.
	Information regarding confidential reporting mechanisms	40.4 (not effective-slightly effective	
	Psychological and emotional support for staff	36.5 (not effective-slightly effective)	
	An environment that promotes speaking up about concerns without fear of retaliation	31.0 (not effective-slightly effective)	
Expectations of leadership Health care professionals expect transparent and consistent communications from leadership regarding ongoing decision-making and policy changes in the midst of the pandemic.	Forums with leaders to gather information, ask questions, and share concerns	21.0 (not effective-slightly effective)	I feel let down that my hospital didn't have a solid action plan already made. It should have been ready before a pandemic. Give it to us straight, in all of its unpleasant, morally distressing, utterly defeating glory. We just want the truth. Clear policies regarding potential ethical dilemmas And the fact that we are not being compensated for this is great moral distress, change of pace, job duty is additionally frustrating. Makes it very hard to feel valued. We need administration that is actually listening and involves frontline providers in decision-making
	Policies regarding crisis response	20.0 (not effective-slightly effective)	
	Information regarding supplemental hazard compensation	75.7 (not effective-slightly effective)	
Connectedness through a moral community Health care professionals desire supportive multiprofessional forums with colleagues to build relational integrity: engage in discussions about ethical challenges, learn about ethical frameworks, and guide ethical decision-making collectively.	Pathways for requesting ethics consultations or advice	44.0 (not effective-slightly effective)	Comprehensive training for these types of situations and rules of rapid triage would be helpful in at least allaying some fears and ethical/moral dilemmas, best if done before it's needed, though it's too late for that, but continued training on this would help. The connectedness between colleagues and trainees has been one of the most important pieces that supported me through moral quandaries. The ability to share stories and misgivings has been the best balm for my soul. I always feel that the place to start is in having someone to talk things out with, to know whether my concern is of an ethical nature, a communication need, or moral distress—provide a framework, have a say in the ethics part of care. I think that it is the institution that should determine, with multidisciplinary involvement—especially with ethical teams—whether and what resources should be restricted and to whom. Moral support from peers makes this less stressful.
	Communication updates regarding system-based changes	15.1 (not effective-slightly effective)	
	Individual or team-based opportunities to alleviate stress	48.9 (not effective-slightly effective)	

Continued

Table 4
Continued

Theme	Survey item	Perceived distress/ effectiveness, overall, % (n=337)	Qualitative quotes
Professional identity challenges Health care professionals express ongoing internal struggle to maintain their professional identities, roles, expectations, and collegial relationships in this pandemic. Concerns for being forced to function in roles outside the scope of their expertise, while others report increased professionalism concerns with their colleagues induced by stresses from the pandemic.	Having to assume other responsibilities outside of your current professional role	64.0 (a little-a great deal)	Feeling forced into roles that you are not comfortable doing and feel unsupported by management is hard to overcome. There are little to no exceptions for us to opt out of job roles we did not sign up for. Caring for patients well beyond my expertise (ie, geriatrics), adults other than young adults causes me, causes me distress. I feel morally outraged at my dramatic, selfish colleagues and their unprofessional response. It is team breaking and only a few but they are toxic. Most of our organization is rising to the occasion but the very few have created what feels like permanent damage to relationships and teams. Only a few of us are expected to change roles and adapt. Being in Pediatrics, we are finding a great deal of guilt that people are feeling for not being at the heart of this pandemic, for being called off, for being underutilized or let go.
	Making decisions to limit/forgo interventions for your patient without their usual level of involvement	82.5 (somewhat-extremely distressed)	
	Having your close therapeutic clinician-patient relationships be disrupted because of social distancing or hospital policies	55.0 (quite-extremely distressed)	
Professional vs social responsibility Health care professionals express tension between professional and social responsibilities and recognition. This manifests as discomfort with limited resources, recalibrating professional and societal expectations, and desiring sustained meaningful recognition. They also feel the society they serve is not upholding its end of the social contract, which, in turn, increases risks to health care workers.	Working with limited resources	69.0 (quite-extremely distressed)	Health care professionals on the front line are being sacrificed left and right with no additional thought about it. The lack of PPE and the lack of support for us is disgusting. I truly am considering a career change after this complete disregard for the safety of myself and my family. I am frustrated with the outpouring of support for health care workers. It is infuriating actually. Although the pandemic is on the extreme end of the spectrum, the psychological/emotional/moral stress that health care workers endure is present with or without a pandemic. We suffer this strain throughout our entire careers. These are the sacrifices I make for my career in health care every single day. But none of that is ever acknowledged, appreciated, or compensated. It took a pandemic to get people to notice. But we will still be there on the front lines, doing what we always do, making silent personal sacrifices and stuffing our emotional and psychological burnout in a closet, only letting it out when the closet busts open from time to time. We are not heroes; we are simply doing what we have been trained to do. How can we "make it real" for those who aren't here with us IN it? Part of my personal increase in stress/moral fatigue is also worrying about the actions of the public outside of work.
	Being infected while performing your professional duties in the hospital	91.6 (somewhat-extremely distressed)	
	Protecting your colleagues/staff from increased risks and exposures	93.8 (somewhat-extremely distressed)	

[a] The derived 5 themes are displayed along with survey items and corresponding responses. The visual display allows for integrated or mixed insights using an interpretivist approach to data analysis.[23]

qualitative data together visually.[25] This integration yields clarity, confirmation, or mixed insights from our respondents' perspectives that might not be as apparent from interpreting quantitative or qualitative data alone.[25] As evidenced in mixed insights, most respondents felt distressed by commitments to fulfill their professional responsibilities and being exposed to personal health risks without the same commitments from society at large. For instance, respondents expressed tension between being called "heroes" and witnessing inconsistent behaviors and attitudes of the public. Although concerns regarding psychological safety and expectations of leadership, or lack thereof, were expressed strongly in narrative comments, survey data indicated that these issues were not as prominent as expected. For example, only about 20% of respondents reported that their organizations' leadership forums and policies regarding crisis response were not effective. Additionally, a large portion of respondents perceived their professional integrity as being challenged by issues related to (but not limited to) scope of practice, loss of control, and perceived inequity among the health care teams. This perception was highlighted by high levels of reported anticipatory moral distress (82.5%) regarding having to make decisions to limit or forgo treatments for patients without the usual level of patient involvement and narrative comments regarding concerns about colleagues' professionalism in their responses to pandemic stresses.

Moral resilience: the capacity of an individual to sustain or restore their integrity in response to moral adversity.

Discussion

With the advent of the COVID-19 pandemic and the rapid emergence of complex ethical challenges, we sought to investigate the moral distress experiences of pediatric critical care professionals during the pandemic. In our conceptual framework, through the lens of integrity-related inducers of moral distress and moral resilience, we gained contextual insights about the impact of this pandemic on respondents' moral lives. Our study yielded 4 key findings. First, although respondents were not confronting firsthand the same magnitude of morbidity and mortality and work demands as adult critical care professionals, they were nonetheless experiencing direct or anticipatory moral distress. Second, nurses had higher degrees of moral distress than other professional groups. Third, the primary cause of moral distress among the respondents was experiencing specific challenges to professional integrity generated by the pandemic. Fourth, despite these challenges, health care professionals had the capacity to be morally resilient.

The prevalence of moral distress among our respondents is not surprising. In normal circumstances, moral distress is an inherent "occupational hazard" in health care.[4-8] What is interesting is the way in which the pandemic has surfaced many of the underlying internal and external characteristics of this phenomenon.[6-10] Moral distress in pediatric health care professionals could be due to many factors, including the unavoidable uncertainty that this pandemic entails; anticipatory distress in the face of potential spread from adult to pediatric populations; or, as our qualitative data indicate, feelings of guilt engendered by a sense of connection with adult critical care colleagues who have suffered the brunt of the pandemic's impact. In addition, the lingering moral distress that most of the respondents have experienced during the pandemic could point to the accumulated residue and crescendo effect of unresolved, unrelieved moral distress from the prepandemic period.[26]

Our findings reinforce that nurses, who provide the most direct bedside patient care, are experiencing more moral distress related to personal and professional integrity compared with physicians and APPs. This finding is consistent with previous studies on moral distress indicating that nurses are more likely to experience moral distress than other health care professionals.[8,11,12] In our study, nurses reported being morally distressed about the prospect of losing the ability to advocate for patients' needs, having to implement decisions to limit or forgo interventions for their patients, and having to communicate changes in policy about limiting or forgoing treatments to patients. Interestingly, nurses reported higher degrees of distress regarding the potential shift of decision-making authority to hospital triage officers or teams and the prospect of disrupted therapeutic relationships with their patients due to the pandemic. These are conditions that might undermine efforts to preserve the integrity essential to their professional identity and to fulfill their commitment to act as their patients' advocates.[27]

Furthermore, nurses reported feeling powerless and experiencing deficits in the psychological safety within their organization that enables them to speak up about concerns without fear of retaliation. This finding could reflect the hierarchical differences in power characterizing professional roles in health care, along with legitimate concerns about retaliation and the punitive culture of some organizations. These findings support calls for

organizations to build a culture of psychological safety and relational-integrity pathways to sustain a moral community for all health care professionals and foster relatedness in the workplace.[28-31] Lack of psychological safety leads health care professionals, particularly nurses, to fear voicing their concerns and to resign themselves to silence, which is known to exacerbate preventable harms, increase professional burnout, and impede organizational learning, adaptability, innovation, and growth.[4,7,28,29]

Our findings illuminate the pandemic's exacerbation of challenges to professional integrity due to various social tensions. Although we had a limited number of survey responses from those experiencing the brunt of the pandemic in the Northeast region, the Children's Hospital Association, representing more than 220 hospitals nationally, reported that children's hospitals were strategically preparing their organizations and staff to accommodate adult hospitals' surge of patients.[30,31] Caring for many complex critically ill adults in a children's hospital was no longer a remote possibility but a current reality for many. Our quantitative and qualitative analyses highlight the significance of anticipatory and present moral distress that our respondents, particularly nurses, have felt in taking on professional roles and responsibilities beyond their scope of expertise. Such a prospect causes anguish because it undermines their professional identity and their sense of moral efficacy in fulfilling the core obligations inherent in that role.[4,5,24] Another intriguing finding is the greater importance that nurses and respiratory therapists assign to the ethical principle of "first come, first serve" in anticipatory triage decision-making. This finding might be explored in light of the fundamental shift in decision-making paradigms that the pandemic demands, in which broader social needs are prioritized over individual needs and autonomy-based decision-making.[16-18] If health care professionals are not in agreement with the guiding principles of care delivery at the professional level during a pandemic, they are forced to implement decisions at odds with their own values. This experience can be perceived as a violation of their professional integrity as they attempt to fulfill their professional duties or meet the highest standards of their profession.[5]

Our analysis affirms that health care professionals have attributes of moral resilience—the ability to navigate moral conflict and apply ethical solutions to ethical problems,[24] even in the midst of a pandemic. Specifically, although respondents reported distress about the prospect of implementing decisions against their values, they also reported that their fears have not led them to compromise their values and that they have confidence in their reasoning abilities. These findings are important indicators of their moral sensitivity and awareness of threats to integrity, throwing into relief 2 important attributes of moral resilience: moral efficacy and the capacity for self-regulation.[24] Our findings also highlight the significance of moral resilience, or lack thereof, as lower degrees of moral resilience were associated with the presence of moral distress and with lingering distress in health care professionals. These results illuminate opportunities for organizations to systematically recognize and redress contributing factors to anticipatory, present, and lingering experiences of moral distress and to bolster training to support the moral efficacy of health care professionals—their capacity to face ethical challenges without complacency, unregulated moral outrage, or compromised integrity.[32,33] Moreover, our findings highlight the relationship between moral climate and moral distress and the important role of ethical cultures in fostering healthy workplaces.[29,34,35]

> Tending to the moral distress experiences of health care professionals . . . may create a more robust health care workforce.

Taking into account the immediate and long-term detrimental effects of moral distress on health care professionals and the unknown impact this pandemic will have on the current and future workforce, we suggest that organizations take heed of these findings and the recommendations of the National Academy of Medicine[34] to not only create an ethical work environment that strengthens professional integrity but also cultivate a psychologically safe environment to prevent a "parallel pandemic" of burnout among health care professionals.[29,32-35] Establishing safe forums to share concerns with colleagues and leaders may also foster relational integrity and moral efficacy for health care professionals—key attributes to sustaining moral resilience in the midst of distress.[24] The ultimate rationale for such initiatives is this: tending to the moral distress experiences of health care professionals, both during and beyond the pandemic, may help create a more robust health care workforce that can better meet patients' needs.

Limitations

Our study has several limitations. This was an exploratory survey, and thus our findings cannot be

assumed to be representative or generalizable. The sample size was small, and the survey was conducted over a short period, possibly limiting our potential responses and recruitment opportunities. Given the unforeseen nature of the pandemic, we cannot with absolute certainty tease apart the effects of the COVID-19 pandemic from those of typical work situations. The qualitative data, however, helped to illuminate the effect of the pandemic on the respondents. Additionally, the snowball recruitment process may have limited the survey response rate and may have introduced bias, with only those interested responding and then possibly recruiting others with similar interests to participate. We used this method because of the time constraints imposed by a rapidly progressing pandemic and to maintain anonymity within a smaller, well-connected medical community of pediatric critical care professionals. Also, at the time of this survey, the pandemic epicenter was in the Northeast region of the country. Thus, the limited number of respondents from that region could have been due to acute clinical burdens, increased organizational planning, and survey fatigue during this period. We acknowledge that the smaller response from those in the Northeast region limits the knowledge, insights, and conclusions that can be garnered about present moral distress experiences during the pandemic.

Conclusion

The results of our study suggest that during the COVID-19 pandemic, pediatric critical care professionals are experiencing moral distress due to various factors that challenge their professional integrity. An especially high proportion of nurses reported moral distress, felt that their professional integrity was threatened, and perceived a lack of organizational support. Despite these challenges, they also demonstrated attributes of moral resilience. Further studies are needed to investigate the impact of pandemic-specific moral distress experiences on various health care professionals. Lessons learned may yield increased attention to the need for organizational support, structure, and action to develop strategies not only to prevent and mitigate moral distress but also to sustain organizational, team, and individual moral resilience during the COVID-19 pandemic and beyond.

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FINANCIAL DISCLOSURES

None reported.

SEE ALSO

For more about moral distress, visit the *AACN Advanced Critical Care* website, **www.aacnacconline.org**, and read the article by Rushton et al, "Invisible Moral Wounds of the COVID-19 Pandemic: Are We Experiencing Moral Injury?" (Spring 2021).

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CE 1.0 Hour Category B

Notice to CE enrollees:

This article has been designated for CE contact hour(s). The evaluation demonstrates your knowledge of the following objectives:

1. Define moral distress in the context of the COVID-19 pandemic.
2. Identify organizational opportunities to support health care professionals experiencing moral distress.
3. Analyze attributes of the continuum of moral distress to moral resilience in the midst of a pandemic.

To complete the evaluation for CE contact hour(s) for this article #A21804, visit www.ajcconline.org and click the "CE Articles" button. No CE evaluation fee for AACN members. This expires on November 1, 2023.

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Supplemental Table 1
Moral distress in the midst of a pandemic: a survey

Exploring the Perspectives of Health Care Professionals:

Moral distress occurs when you recognize a moral problem, feel the responsibility to do something about it, but you cannot act or speak up in a way that preserves your own professional integrity, due to various internal and external constraints.

The potential for ethical challenges, conflict, and experiences of moral distress permeates virtually every aspect of pandemic and crisis response and decision-making. We hope to gather your perspectives.

Please respond to the following questions and statements based on your own experience with and judgments about the pandemic at this moment in time. Completion and submission of this survey implies your consent to participate in this research. **Thank you!**

1. What is your professional role?	Physician Nurse Respiratory therapist Resident Nurse practitioner/Physician assistant Administrator Social worker Chaplain Physical therapist/Occupational therapist Other_____ (free-text role)
2. Do you consider your role essential in the response to the pandemic within your organization?	Yes or No
3. How confident are you in your ability to reason through ethical challenges in your professional role?	Not confident, Somewhat confident, Quite confident, Very confident, Extremely confident
4. Please describe the extent to which the following principles influence your decisions about triage and resource allocation.	
The principle of "first come, first serve," which practically means pandemic circumstances would not alter the usual pattern of PICU admissions: beds/supplies/staff are allocated in a roughly sequential fashion to patients as their respective needs for critical care sequentially emerge, in other words, on a case-by-case basis.	Not at all important, Not very important, Somewhat important, Very important, Extremely important
The principle of "saving as many lives as possible," which practically means prioritizing patients who are expected to survive to discharge with the needed resources.	Not at all important, Not very important, Somewhat important, Very important, Extremely important
The principle of "saving as many life-years as possible," which practically means prioritizing patients who will not only survive to discharge but also would be expected to survive long-term, for example, for another 5 to 10 years. Underlying comorbidities are given consideration.	Not at all important, Not very important, Somewhat important, Very important, Extremely important
The principle of "life-cycle equity," which practically means prioritizing patients who have not had the chance to live through all of the expected phases of (long) life, for example, the 17-year-old will receive priority over the 65-year-old.	Not at all important, Not very important, Somewhat important, Very important, Extremely important
The principle of "investment refinement," which practically means to maximize the amount a person invested in his or her life balanced by the amount of potential life phases left to live.	Not at all important, Not very important, Somewhat important, Very important, Extremely important
The principle of "instrumental worth," which practically means prioritizing patients who have and will have the ability to care for others in society, for example, first responders, physicians, nurses, teachers, etc.	Not at all important, Not very important, Somewhat important, Very important, Extremely important
5. Right now, if you could prioritize only 1 principle to make triage/allocation decisions, which one would it be?	The principle of "first come, first serve" The principle of "saving as many lives as possible" The principle of "saving as many life-years as possible" The principle of "life-cycle equity" The principle of "investment refinement" The principle of "instrumental worth"
6. Given the pandemic crisis, how morally distressed are you about the potential situations?	
Spreading infection to your loved ones at home	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Spreading infection to your patient(s)	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Being infected while performing your professional duties in the hospital	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Protecting your colleagues/staff from increased risks and exposures	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed

Continued

Supplemental Table 1
Continued

6. Given the pandemic crisis, how morally distressed are you about the potential situations? *(continued)*	
Working with limited resources (PPE, medications, ventilators, staff, etc)	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Experiencing negative consequences at work (eg, being fired, demoted, furloughed) if you voice safety concerns	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Making decisions about limiting/forgoing care for your patients	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Communicating changes in practices/policies about limiting/forgoing care with patients/families	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Losing your ability to advocate for your individual patient's needs due to societal needs	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Making triage/resource allocation decisions	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Losing decision-making power/abilities with your patients to hospital triage officers/teams	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Shifting decision-making authority to hospital triage officers/teams	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Implementing the decisions of others when it threatens your own values	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Having your close therapeutic physician-patient relationships be disrupted	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
Witnessing your patients dying alone	Not at all distressed, Somewhat distressed, Quite distressed, Very distressed, Extremely distressed
7. For the following items, please answer based on your <u>professional</u> reflection over the past 30 days:	
To what extent are you experiencing moral distress?	Not at all, A little, A moderate amount, A lot, A great deal
To what extent do difficult ethical situations leave you feeling powerless?	Not at all, A little, A moderate amount, A lot, A great deal
To what extent do you experience moral distress at the prospect of having to assume other responsibilities outside of your current professional role (eg, contributing to the workforce across departments)?	Not at all, A little, A moderate amount, A lot, A great deal
To what extent are you overwhelmed by persistent ethical conflicts?	Not at all, A little, A moderate amount, A lot, A great deal
To what extent do your choices and behaviors consistently reflect your values?	Not at all, A little, A moderate amount, A lot, A great deal
8. Please consider how effective your organization is in providing the following. . .	
Policies regarding crisis response	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Forums with leaders to gather information, ask questions, and share concerns	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Information regarding supplemental hazard compensation	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Individual or team-based opportunities to alleviate stress	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Pathways for requesting ethics consultations	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Information regarding confidential reporting mechanisms	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
An environment that promotes speaking up about concerns without fear of retaliation	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Communication updates regarding system-based changes	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Psychological and emotional support for staff	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
Extended staff services (eg, child care, lodging, respite care)	Not effective, Slightly effective, Quite effective, Very effective, Extremely effective
9. For the following items, please answer based on your <u>personal</u> reflection over the past 30 days:	
To what extent does lingering distress after facing a challenging ethical situation weigh you down?	Not at all, A little, A moderate amount, A lot, A great deal
To what extent do your fears cause you to act in a way that compromises your values?	Not at all, A little, A moderate amount, A lot, A great deal
When confronted with an ethical challenge, to what extent do you push yourself beyond what is healthy for you?	Not at all, A little, A moderate amount, A lot, A great deal
To what extent are you able to think clearly when confronting an ethical challenge, even when you feel pressured?	Not at all, A little, A moderate amount, A lot, A great deal

Continued

Supplemental Table 1
Continued

10. In response to challenging times, how much are you engaging in the following?	
Participating in faith-based organizations or spiritual practices	Not at all, A little, A moderate amount, A lot, A great deal
Participating in work-related activities (debriefings with colleagues, policy/guideline work groups)	Not at all, A little, A moderate amount, A lot, A great deal
Participating in hobbies (eg, reading, crafts, baking, woodworking, gaming)	Not at all, A little, A moderate amount, A lot, A great deal
Spending time with family, friends, pets through the use of technology/social media	Not at all, A little, A moderate amount, A lot, A great deal
Binge watching television or movies	Not at all, A little, A moderate amount, A lot, A great deal
Using alcohol, food, or other substances to relieve stress	Not at all, A little, A moderate amount, A lot, A great deal
Seeking counseling	Not at all, A little, A moderate amount, A lot, A great deal
Feeling morally outraged	Not at all, A little, A moderate amount, A lot, A great deal
Participating in wellness activities (eg, physical exercise, biking, yoga, spending time in nature)	Not at all, A little, A moderate amount, A lot, A great deal
Practicing mindfulness, reflective practice, meditation	Not at all, A little, A moderate amount, A lot, A great deal
Other (please specify)	Not at all, A little, A moderate amount, A lot, A great deal
11. What resources do you need to help you confront the ethical challenges in the pandemic?	Free-text response
12. In which region of North America do you live?	Northeast Southeast Southwest Midwest West
13. What is your age?	25-34 years 35-44 years 45-54 years 55-64 years 65-74 years 75 years or older
14. About how many years have you been in your profession?	Less than 3 years At least 3 years but less than 5 years At least 5 years but less than 10 years At least 10 years but less than 15 years At least 15 years but less than 20 years More than 20 years
15. From your perspective, what do you believe is additionally important for us to know?	Free-text response

Abbreviations: PICU, pediatric intensive care unit; PPE, personal protective equipment.

Supplemental Table 2
Conceptual framework and survey items

Conceptual framework and key concept	Survey items
Rushton Moral Resilience Scale, relational integrity	To what extent do your fears cause you to act in ways that compromise your values?
Rushton Moral Resilience Scale, moral efficacy	How confident are you in your ability to reason through ethical challenges professionally? To what extent are you able to think clearly when confronting an ethical challenge, even when you feel pressured?
Rushton Moral Resilience Scale, response to moral adversity	To what extent do difficult ethical situations leave you feeling powerless? To what extent are you overwhelmed by persistent ethical conflicts? When confronted with an ethical challenge, to what extent do you push yourself beyond what is healthy for you? To what extent does lingering distress after facing a challenging ethical situation weigh you down?
Rushton Moral Resilience Scale, personal integrity	To what extent do your choices and behaviors consistently reflect your values? To what extent do you have the conviction to act in accordance with your values? Implementing the decisions of others when it threatens your own values?
Moral resilience, integrity-preserving actions by health care professionals	Participating in faith-based organizations or spiritual practices Participating in work-related activities (debriefings with colleagues, policy/guideline work groups) Participating in hobbies (eg, reading, crafts, baking, woodworking, gaming) Spending time with family, friends, pets through the use of technology/social media Seeking counseling Participating in wellness activities (eg, physical exercise, yoga, spending time in nature) Practicing mindfulness, reflective practice, meditation
Moral distress, professional integrity challenges	Spreading infection to your patient(s) Protecting your colleagues/staff from increased risks and exposures Working with limited resources (PPE, medications, ventilators, staff, etc) Experiencing negative consequences at work (eg, being fired, demoted, furloughed, etc) if you voice safety concerns Making decisions to limit/forgo interventions for your patients without their usual level of involvement Losing your ability to advocate for your individual patients' needs because of resource constraints Making triage/resource allocation decisions Shifting decision-making authority to hospital triage officers/teams
Moral distress, personal integrity challenges	Spreading infection to your loved ones at home Being infected while performing your professional duties in the hospital Communicating changes in practices/policies about limiting/forgoing interventions with patients/families Your patients not having access to their loved ones while in the hospital Witnessing your patients dying alone
Moral distress, integrity-challenging actions by health care professionals	Using alcohol, food, or other substances to relieve stress Feeling morally outraged Binge watching television or movies
Organizational and predisposing factors in a pandemic	Information regarding professional wellness resources Policies regarding crisis response (eg, the role of triage officers/triage teams) Forums with leaders to share concerns Information regarding hazard supplemental compensation Opportunities for individual or team-based approach to address stress Pathways for requesting ethics consultation or advice Information regarding confidential reporting mechanisms An environment that promotes speaking up about concerns without fear of retaliation Communication updates regarding system-based changes Psychological and emotional support for staff
Ethical principles informing decision-making in a pandemic	The principle of "first come, first serve" The principle of "saving as many lives as possible" The principle of "saving as many life-years as possible" The principle of "life-cycle equity" The principle of "investment refinement" The principle of "instrumental worth"

Abbreviation: PPE, personal protective equipment.

Supplemental Table 3
Principles influencing anticipatory decisions about triage/resource allocation by health care professionals

Principle	Overall (n=337)	Physicians/ APPs (n=165)	Nurses (n=89)	Respiratory therapists (n=53)	Others[a] (n=30)	*P*[b]
	Median score on scale[c] (first quartile-third quartile)					
First come, first serve (which practically means pandemic circumstances would not alter the usual pattern of PICU admissions: beds/supplies/staff are allocated in a roughly sequential fashion to patients as their respective needs for critical care sequentially emerge, in other words, on a case-by-case basis)	2 (2-3)	2 (2-3)	3 (2-4)	3 (2-4)	2 (1-3)	<.001
Saving as many lives as possible (which practically means prioritizing patients who are expected to survive to discharge with the needed resources)	4 (3-4)	4 (3-4)	4 (3-4)	4 (3-5)	4 (4-5)	.41
Saving as many life-years as possible (which practically means prioritizing patients who will not only survive to discharge but also would be expected to survive long-term, eg, for another 5 to 10 years; underlying comorbidities are given consideration)	4 (3-4)	4 (3-4)	3 (3-4)	3 (2-4)	4 (2-4)	.12
Life-cycle equity (which practically means prioritizing patients who have not had the chance to live through all of the expected phases of [long] life, eg, the 17-year-old will receive priority over the 65-year-old)	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	3 (2-4)	.51
Investment refining (which practically means to maximize the amount a person invested in his or her life balanced by the amount of potential life phases left to live)	2 (1-2)	2 (1-2)	2 (1-3)	1 (1-2)	1 (1-2)	.07
Instrumental worth (which practically means prioritizing patients who have and will have the ability to care for others in society, eg, first responders, physicians, nurses, teachers, etc)	2 (1-3)	2 (2-3)	2 (2-3)	2 (1-3)	2 (1-3)	.22

Abbreviations: APP, advanced practice provider; PICU, pediatric intensive care unit.
[a] Others included chaplains, pharmacists, social workers, physical therapists, occupational therapists, and administrators.
[b] Differences between professional groups.
[c] 1=not important, 2=somewhat important, 3=quite important, 4=very important, 5=extremely important.

Supplemental Table 4

Descriptive statistics of potential enablers or situations that induce moral distress and attributes of moral resilience: post hoc analysis table for the significant items

Survey items	*P*
Items related to professional integrity	
Working with limited resources	
Physicians/APPs vs nurses	.001
Physicians/APPs vs respiratory therapists	.004
Experiencing negative consequences at work	
Physicians/APPs vs nurses	.03
Having your close therapeutic clinician-patient relationships be disrupted	
Physicians/APPs vs others	.04
Having to assume other responsibilities outside of your current professional role	
Nurses vs physicians/APPs	.01
Nurses vs others	.04
Items related to personal integrity (affective)	
Spreading infection to your loved ones at home	
No pairwise comparisons were significant; physicians/APPs vs nurses (.07)	
Being infected while performing your professional duties in the hospital	
No pairwise comparisons were significant; physicians/APPs vs nurses (.05) and physicians/APPs vs respiratory therapists (.05)	
Lack of organizational supports	
Forums with leaders to share concerns	
Physicians/APPs vs respiratory therapists	.004
Opportunities for individual or team-based approach to address stress	
Physicians/APPs vs others	.03
Pathways for requesting ethics consultation or advice	
Physicians/APPs vs respiratory therapists	.004
Information regarding confidential reporting mechanisms	
Physicians/APPs vs nurses	.02
Extended staff services (eg, child care, lodging, respite care)	.002
Physicians/APPs vs respiratory therapists	.03
Physicians/APPs vs others	.03
Nurses vs respiratory therapists	
Moral resilience	
Confident in ability to reason through ethical dilemmas in professional role	
Nurses vs respiratory therapists	.03
Extent difficult ethical situations leave feeling powerless	
Physicians/APPs vs nurses	.01
Extent overwhelmed by persistent ethical conflicts	
Physicians/APPs vs nurses	.01
Extent choices and behaviors consistently reflect values	
Physicians/APPs vs respiratory therapists	.03

Abbreviation: APP, advanced practice provider.

Supplemental Table 5

Correlation analysis for moral distress and lingering moral distress items expressed by the respondents with subscale

Survey items	Spearman correlation coefficient (95% CI)	
	Moral distress (1=not at all, 5=a great deal)	Lingering moral distress (1=not at all, 5=a great deal)
Related to professional integrity (1=not at all distressed to 5=extremely distressed)		
Spreading infection to your patient(s)	0.37 (0.27-0.46)[a]	0.41 (0.32-0.49)[a]
Protecting your colleagues/staff from increased risks and exposures	0.49 (0.40-0.56)[a]	0.45 (0.36-0.53)[a]
Working with limited resources	0.46 (0.37-0.54)[a]	0.43 (0.34-0.51)[a]
Experiencing negative consequences at work	0.31 (0.21-0.41)[a]	0.28 (0.18-0.37)[a]
Making decisions to limit/forgo interventions	0.42 (0.32-0.50)[a]	0.40 (0.30-0.48)[a]
Losing your ability to advocate for your individual patients' needs	0.42 (0.33-0.50)[a]	0.45 (0.36-0.53)[a]
Making triage/resource allocation decisions	0.37 (0.28-0.46)[a]	0.44 (0.35-0.52)[a]
Shifting decision-making authority to hospital triage officers/teams	0.33 (0.23-0.42)[a]	0.32 (0.22-0.41)[a]
Having your close therapeutic clinician-patient relationships be disrupted	0.32 (0.22-0.41)[a]	0.31 (0.21-0.40)[a]
Having to assume other responsibilities outside of your current professional role	0.40 (0.30-0.48)[a]	0.39 (0.30-0.48)[a]
Related to personal integrity (affective) (1=not at all distressed to 5 = extremely distressed)		
Spreading infection to your loved ones at home	0.50 (0.42-0.58)[a]	0.48 (0.39-0.56)[a]
Being infected while performing your professional duties in the hospital	0.47 (0.38-0.55)[a]	0.38 (0.29-0.47)[a]
Communicating changes in practices	0.41 (0.32-0.50)[a]	0.42 (0.32-0.50)[a]
Witnessing your patients dying alone	0.33 (0.23-0.42)[a]	0.39 (0.29-0.48)[a]
Lack of organizational support (1=extremely effective to 5=not effective)		
Policies regarding crisis response	0.11 (0.0-0.21)[b]	0.06 (–0.05 to 0.16)
Forums with leaders to share concerns	–0.03 (–0.14 to 0.08)	0.03 (–0.07 to 0.14)
Information regarding hazard supplemental compensation	0.11 (0.0-0.21)	0.06 (–0.04 to 0.17)
Opportunities for individual or team-based approach to address stress	0.12 (0.02-0.23)[b]	0.06 (–0.04 to 0.17)
Pathways for requesting ethics consultation or advice	0.10 (–0.01 to 0.20)[b]	0.01 (–0.10 to 0.11)
Information regarding confidential reporting mechanisms	0.08 (–0.03 to 0.18)	0.01 (–0.10 to 0.12)
An environment that promotes speaking up about concerns without fear of retaliation	0.12 (0.01-0.22)[b]	0.10 (–0.01 to 0.20)
Communication updates regarding system-based changes	–0.03 (–0.13 to 0.08)	0.02 (–0.09 to 0.13)
Psychological and emotional support for staff	0.13 (0.02-0.23)[b]	0.05 (–0.06 to 0.15)
Extended staff services (eg, child care, lodging, respite care)	–0.03 (–0.13 to 0.08)	–0.06 (–0.17 to 0.05)
Moral resilience (scales explained in footnotes)		
Extent fears cause to act in ways that compromise values[c]	–0.38 (–0.47 to –0.28)[a]	–0.43(–0.52 to –0.34)[a]
Confident in ability to reason through ethical dilemmas in professional role[d]	–0.17 (–0.27 to –0.06)[b]	–0.23 (–0.33 to –0.13)[a]
Think clearly when confronting an ethical challenge even when pressured[e]	–0.03 (–0.13 to 0.08)	–0.02 (–0.13 to 0.09)
Extent difficult ethical situations leave feeling powerless[c]	–0.54 (–0.61 to –0.46)[a]	–0.57 (–0.64 to –0.49)[a]
Extent overwhelmed by persistent ethical conflicts[c]	–0.54 (–0.61 to –0.46)[a]	–0.52 (–0.59 to –0.44)[a]
Extent push yourself beyond what is healthy[c]	–0.40 (–0.49 to –0.31)[a]	–0.52 (–0.59 to –0.44)[a]
Extent choices and behaviors consistently reflect values[e]	0.09 (–0.01 to 0.20)	0.08 (–0.03 to 0.18)
Implementing the decisions of others when it threatens own values[f]	–0.35 (–0.44 to –0.26)[a]	–0.43 (–0.51 to –0.34)[a]

[a] Significant at $P<.001$.
[b] Significant at $P<.05$.
[c] Items were reverse coded: 1=a great deal, 2=a lot, 3=a moderate amount, 4=a little, 5=not at all.
[d] Can be read as 1=not confident, 2=somewhat confident, 3=quite confident, 4=very confident, 5=extremely confident.
[e] Item was not reverse coded: 1=not at all, 2=a little, 3=a moderate amount, 4=a lot, 5=a great deal.
[f] Item was reverse coded: 1=extremely distressed, 2=very distressed, 3=quite distressed, 4=somewhat distressed, 5=not at all distressed.