Moral Distress as a Characteristic of Physician Training:

Understanding and Ameliorating a Harmful Phenomenon

By

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Abstract

When health care providers experience moral distress, it influences not only their wellness, but that of their patients. Although moral distress in health care is believed to be universal, the majority of literature on the topic describes the experiences of nurses. Moral distress among physician trainees is poorly understood. In this study, I report the findings of a systematic review of studies of moral distress experienced by physician trainees. I reviewed three key questions: (1) What are the root causes of moral distress (clinical situations, internal constraints, and external constraints) in physician trainees? (2) Is the experience of moral distress influenced by a physician trainee's gender, subspecialty, or level of training? (3) How do physician trainees cope with their moral distress? I screened 1492 articles for eligibility; 38 articles met criteria for full-text review. The final qualitative analysis included eight studies. Five studies employed qualitative methods and three studies used quantitative methods. I could not perform a quantitative synthesis of the 8 appraised articles. The most commonly identified clinical situations leading to moral distress were "powerlessness due to position in the hierarchy," "witnessing unprofessional/unethical/substandard conduct or scenarios," and "caring for critically ill patients at the end-of-life." The most common form of adaptive coping reported was open discussions among staff involved with specific cases. The most common form of maladaptive coping reported was depersonalization. Few studies explored the relationship between moral distress and demographic characteristics. Of the five qualitative studies, the majority were of moderate quality. All three quantitative studies were of low or very low quality. High quality research that enables us to understand the best ways to identify, respond to, and prevent moral distress among physician trainees will support their wellbeing and may be helpful for curriculum development.

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Introduction

Moral distress was originally described by Andrew Jameton as a scenario in which "one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action." In his book, *Nursing Practice: the Ethical Issues,* Jameton used this description to investigate nurses' experiences of the phenomenon. He found that moral distress was often associated with "painful feelings" and "psychological disequilibrium." (Jameton 1984) Although moral distress was originally described within the field of nursing, it is now known to be experienced by diverse health care professionals (Epstein and Hamric 2009).

Moral distress influences the wellness of professionals and the patients they care for. It can lead to suboptimal patient care. Health care professionals experiencing moral distress tend to avoid particular scenarios or "withdrawal from the moral dimensions of patient care," neglecting the needs of patients and families. (Hamric 2012). Morally distressed professionals have reduced job satisfaction, poor psychological and physical well-being, burnout, and are at higher risk of quitting compared to their non-distressed counterparts (Dzeng et al 2015). Moral distress and its sequelae are not typically short-lived. If moral distress is not alleviated, it can persist for years. It is common for clinicians to report feeling "haunted" by morally distressing scenarios that, by definition, violate their sense of professional integrity. (Ponce Martinez 2017)

As moral distress has become more well understood, its definition has evolved. Today, it is accepted that moral distress occurs when a "provider's perception of the ethically appropriate action cannot be taken due to constraints of the situation." (Hamric 2012) Root causes of moral distress are organized into three categories – 1) clinical situations 2) internal constraints, and 3) external constraints. (Hamric 2012)

Morally distressing clinical situations are nearly universal among health care professionals. Providing care at the end-of-life, poor continuity of care, and providing treatments that are inappropriate are situations commonly identified by the literature. (Hamric 2012) Conversely, constraints are more individualized, related to one's individual characteristics and position in the health care system. Internal constraints include self-doubt, feelings of inadequacy, socialization to follow orders, and poor understanding of an issue or scenario (Epstein and Hamric 2009). External constraints that increase the likelihood of moral distress include "inadequate staffing, hierarchies within the health care system, lack of collegial relationships, lack of administrative support, policies and priorities that conflict with care needs, pressure to reduce costs, and fear of litigation." (Epstein and Hamric 2009) However, understanding of constraints that contribute to moral distress relies on studies of nurses' experiences. Many of these situations and constraints are encountered by physician during their training. However, this has yet to be confirmed by the literature. As a result, the experience of moral distress amongst physician trainees is poorly understood. A better understanding of how physician trainees experience moral distress will enhance strategies designed to identify, treat and prevent it. In this study, I report the findings of a systematic review of studies of moral distress experienced by physician trainees.

Questions to be systematically reviewed

- What are the root causes of moral distress (clinical situations, internal constriants, and external constraints) in physician trainees?
- Is the experience of moral distress influenced by an individual's gender, subspecialty, or level of training?
- How do physician trainees cope with their moral distress?

Methods

This systematic review was completed in accordance with current Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA) Guidelines. The review protocol was not registered.

Study Selection

The SPIDER tool was utilized to develop key questions and search strategy. (Cooke, Smith, and Booth 2012) This tool is considered an acceptable alternative to the PICOTS tool for synthesis of qualitative evidence. (Cooke, Smith, and Booth 2012) SPIDER considers the study sample, phenomenon of interest, design, evaluation, and research type. (Cooke, Smith, and Booth 2012) Inclusion and exclusion criteria are reported in Table 1. All studies examining the experience of moral distress among physician trainees were included. Physician trainees were defined as physicians enrolled in an internship, residency, or fellowship program. Opinion and viewpoint pieces, narrative reviews, editorials, book chapters and studies appearing in the gray literature were excluded. Quantitative, non-quantitative, and mixed methods studies were included.

Information Sources

The Cochrane Library, Google Scholar, PubMed/MEDLINE, PsychInfo, and Scopus databases were searched to identify relevant articles. ClinicalTrials.gov was used to identify any unpublished literature. The search was limited to English-language articles. Studies were not excluded based on date of publication. The last literature search was performed on 27 March 2018. The following search terms were utilized: moral, ethical, distress, distresses, stress, stresses, angst, conflict, OR conflicts AND resident, residents, residency, residencies, intern, interns, internship, internships, fellow, fellows, fellowship, fellowships, trainee, OR trainees.

Study selection

All elements of the review process were conducted by a single reviewer. The initial eligibility screen was completed based on reference title and abstract. For all studies that met initial screening criteria, the full-text article was reviewed to determine final eligibility. For full-text articles that did not meet eligibility criteria, the reason for exclusion was documented.

Data items

Root causes of moral distress reported by physician trainees were extracted. These were organized into clinical situations, internal, and external constraints. For studies of moral distress among interdisciplinary groups that included physician trainees, only data regarding trainees' experience was extracted. Subjects' method of coping with moral distress was extracted. Coping strategies were classified as adaptive or maladaptive. The following demographic characteristics of subjects were extracted - gender, medical subspecialty, and level of training. If available, association of moral distress and demographic characteristics was extracted.

Quality Assessment

For quantitative and mixed methods studies, critical appraisal of study quality was conducted using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) assessment tool (ratings of very low, low, moderate, and high). For qualitative studies, the Critical Skills Appraisal Program (CASP) assessment tool was utilized. The CASP tool assigns a point score corresponding to study quality that ranges from zero (lowest quality) to ten (highest quality). Quality score was grouped into three categories – studies with a score between zero and three were classified as low quality, between four and seven as moderate quality, and between eight and ten as high quality. Validation methods used by each study were

graded according to a 6-point scale developed by the author. (Table 2) The scale ranged from 0 (no validation) to 5 (intensive advanced analysis).

Framework to assess method of validation
0 – No validation 1 – Expert consensus 2 – At least some cognitive interviewing 3 – Developmental and field testing of beta version 4 – Analysis of properties in an another instrument if available against and against other markers 5 – Intensive advanced analysis (i.e. Item Response Theory)

Results

Study selection

In total, 1492 articles were identified and screened for eligibility. Of these, 38 articles met inclusion criteria for full-text review. Following full-text review, 30 studies were excluded. The final qualitative analysis included eight studies. Quantitative synthesis could not be performed. For further details, see PRISMA diagram (Figure 1).

Study characteristics

Included studies were published during a ten-year period, between 2007 and 2017. Seven of the eight studies were conducted in the United States and Canada. One study was conducted in Belgium. (Lievrouw) No study used the same instrument to identify and characterize moral distress. Investigators tended to offer unique definitions of moral distress, or none at all. In the majority of studies, it was unclear whether subjects were provided a definition

or moral distress prior to completing the survey. The majority of studies utilized interviewing methods. Three studies relied on survey tools to detect moral distress. (Table 2)

Two studies used a version of the revised Moral Distress Scale (MDS-R). Sajjadi *et al* utilized the original MDS-R. This scale lists 21 potentially morally distressing scenarios and asks subjects to report the frequency they experience them and the level of disturbance they cause on a 4 point Likert scale. This tool was originally developed by Hamric to detect moral distress across health care disciplines. Six parallel versions of the MDS-R exist, including two specific to physicians caring for adult and pediatric patients. It does not, however, contain items specific to physician trainees. While the MDS-R has been implemented widely, it has not undergone rigorous methods validation. The content validity of the survey has been analyzed by experts via hypothesis testing. Houston *et al* modified the MDS-R for use among a group of interdisciplinary professionals including chaplains, nurses, physicians, residents, therapists, pharmacists, and social workers. Subjects completing this survey were asked to report the frequency and intensity of 9 potentially morally distressing scenarios on a 6 point Likert Scale. In addition to these 9 scenarios, subjects were asked to consider additional clinical situations based on their role. Houston *et al* developed five questions specific to resident physicians:

Resident specific questions added to the revised Moral Distress Scale (Houston)
• *I participate in starting or maintaining treatments, including CPR, even when I do not believe such treatments are in the patient's best interest because the attending physician has told me to do so.* • *I participate in withholding or stopping treatments, including CPR, even when I do not believe such withholding or stopping is in the patient's best interest because the attending physician has told me to do so.*

- *I carry out work assignments for which I do not feel adequately trained.*
- *I practice medical procedures such as intubation or line placement on the newly deceased without permission from the family.*
- *I practice medical procedures such as intubation or line placement on the newly deceased with permission from the family.*

The original MDS-R scores range from 0-336 whereas the modified MDS-R scores range from 0-324. For each, the higher scores indicate more intense and/or frequent moral distress.

In order to explore the relationship between moral distress and burnout, the survey created by Saijadi *et al* also included the Maslach Burnout Inventory (MBI), which has been validated to detect burnout syndrome among resident physicians. (Maslach 1996) The MBI assesses for three domains of burnout – emotional exhaustion, depersonalization, and low personal accomplishment. (Maslach 1996)

Chiu *et al* developed a survey specific to pediatric surgery fellows to identify and characterize moral distress.

Questions to detect moral distress experienced by pediatric surgery fellows (Chiu)

- *One source of distress for surgical trainees may result from the lack of knowledge or experience with a procedure or from the lack of staff supervision when performing a procedure. Have you ever felt that you were placed in a position to do a procedure or to provide patient care for which (check yes/no)*
    - *You felt you were not fully competent/experienced?*

- *You felt you were not adequately supervised?*
- *You expressed concern about the lack of expertise or supervision to your supervising staff surgeon?*
- *You were left feeling guilty or restless following such experiences?*

- *Did you ever have a conflict with a staff surgeon pertaining to a patient's treatment on moral grounds?*
- *Did you ever witness unprofessional or unethical behavior in your colleagues, other students or residents, or other medical staff?*
- *How did you cope with or resolve these concerns?*
- *Describe the most serious moral distress you have had in your pediatric surgery experience.*

Clinicians who experience moral distress feel that they cannot uphold the ethics and values of their profession. Chiu's questions, however, do not differentiate professional from personal ethical values, which also have the potential to influence one's experiences.

The remaining five studies relied on focus group discussions and in-depth interviews to gather data. These investigators utilized varying strategies to detect moral distress. Interview questions related to moral distress were available in two of the five studies:

Questions utilized in focus groups and in-depth interviews to detect moral distress

- *"Have you ever felt that you were in a situation during training where your own ethical principles were compromised?" (Hilliard)*

- *Have you ever had to do a procedure (including resuscitation) that you thought to be against your moral beliefs? What did you do in that situation? (Dzeng)*
- *Have you experienced moral distress or conflict over the therapies you were asked to provide? Can you describe that situation? (Dzeng)*
- *Have you had a situation where you felt that your clinical and/or personal beliefs were in conflict with what a patient wanted? With what the team wanted? (Dzeng)*

In studies by Hilliard and Dzeng, subjects were asked to comment on situations when their own ethical principles or their moral, clinical and/or personal beliefs were violated. Similar to Chiu's approach, these questions are inconsistent with how moral distress is currently defined. Failing to make this distinction may have resulted in subjects' identification of scenarios in which personal, rather than professional, beliefs contributed to distress.

Five studies addressed moral distress broadly within the context of training programs. Three studies addressed moral distress related to specific clinical situations – oncology practice (Lievrouw), pediatric resuscitations (Thomas) and adult end-of-life care (Dzeng). All qualitative studies described method of thematic analysis, which included a standard qualitative thematic analysis, modified thematic analysis, and grounded theory. (Table 2)

Synthesis of results

A total of 194 subjects participated in included studies. Participants' gender was reported in six studies. There was nearly equal representation of men and women trainees; among studies reporting gender, the mean percentage of women participants was 55%. (Table 2)

Specific roles of physician trainees - interns, residents, and fellows - were identified in five studies. In these studies, the majority of participants (n=76, 60%) were interns or residents. Studies described moral distress experienced by physician trainees from several subspecialties – pediatrics, pediatric surgery, internal medicine, obstetrics and gynecology, oncology, and gastrointestinal surgery. One study did not report residents' subspecialties. Three studies addressed moral distress among trainees from surgical subspecialties (gastrointestinal surgery, pediatric surgery, obstetrics and gynecology), whereas five studies addressed those from non-surgical subspecialties (pediatrics, internal medicine, and oncology). (Table 2)

Given the similarities between the Moral Distress Scales used by Houston and Saijadi, these scores are somewhat comparable. For residents who completed the modified MDS-R, mean score was 64.33 (95% CI 46.10-82.56). For residents who completed the original MDS-R, median score was 77 (interquartile range 50, 96). Although Houston collected questions specific to residents for the modified MDS-R, the responses to these questions were not included in the manuscript.

Among studies that identified causes of moral distress, the most commonly identified clinical situations leading to moral distress was due to "powerlessness due to position in the hierarchy," "witnessing unprofessional/unethical/substandard conduct or scenarios," and "caring for critically ill patients at the end-of-life." (Table 3) These root causes of moral distress are supported by the literature.

Cause of Moral Distress	**Example**

Powerlessness due to position in the hierarchy	*"I will never go into a discussion about moral themes with my supervisor. I will do as I am told."* (Lievrouw) *"I saw some things done that were just wrong, like in a few cases like you just said … [as a resident] you don't want to discredit the fellow."* (Hilliard)
Witnessing unprofessional, unethical, substandard conduct or scenarios	*"In theory there is a team leader, usually someone running the code, but if the calls are not clear and no one has stepped up to take charge, then there is ambiguity about decision and the decision-maker… we [the team] then wonder, 'what are we supposed to be doing and what is the right thing to do?'"* *(*Thomas)
Caring for critically ill patients at the end-of-life	*"We spend a lot of time at the end of life in the ICU torturing our patients and so, I can't in good conscience say that our current system really seems to serve the best interest of the patient because, we torture them before they die, even though we know they are going to die."* (Dzeng)

Internal and external constraints leading to moral distress were more specific to the roles of physician trainees. Trainees reported inadequate skills (an internal constraint) and inadequate supervision (an external constraint) during clinical and communication tasks as sources of moral distress.

Constraints related to inadequate skills and supervision

*"It felt way over my head. You know I hadn't signed a death certificate before, I hadn't counselled a family through something like that and I didn't feel like I was the right one to do it." (*Hilliard)
"You have a sense and know that something needs to happen, but you don't know what it is that needs to be done or you don't feel like it is your role to do it… you are not smart enough to decide… the 'I'm just a first year' or 'just a nurse' feeling" (Hilliard)
*"Not knowing enough to properly counsel families [regarding end-of-life care]" (*Chiu)

Residents reported various coping strategies in response to moral distress. (Table 4) The most common adaptive form of coping reported among studies was open discussions between staff involved with specific cases. Of the studies that addressed maladaptive coping strategies, depersonalization was reported in the majority (5 of 7). This finding was observed in interviews and survey results. Saijadi *et al* found a positive correlation between moral distress and depersonalization according to the MBI (p=0.01). In response to distressing situations, avoidance and deferral of autonomy was observed.

Avoidance of morally distressing situations
"If you're opposed to doing something, then you distance yourself, you don't involve yourself." (Hilliard)
"It's very hard and very emotional for me definitely to turn off that and have a happy face after I just delivered a dead baby that's 24 weeks … it's very hard to click and turn it off and not be incredibly resentful." (Aultman)

"This code was clearly not going well … and we all know he was going to die, but I did not want to be the one to 'end it' because I wasn't ready to take on that ownership … so I asked the attending to be the leader and we continued to code this child, when in reality you know the child is gone." (Thomas)

"*I distanced myself during the case by taking a purely assisting role."* (Chiu)

For surgical trainees, deferral of autonomy involved "regressing from the operator's role." (Chiu) Performance of procedures and operations that trainees believed were not indicated appeared to produce intense moral distress. One obstetrics resident stated "I mean it was pretty dramatic when you have to hog tie a patient while they're screaming to do a C-section … it's kind of weird; like, how any people have ever done that? But it's got to be pretty exhausting to do that." (Aultman) For residents who provided cardiopulmonary resuscitation they did not believe was indicated, some equated their actions with "torture." (Dzeng) One resident stated "It felt horrible, like I was torturing him. He was telling us we were torturing him. I did not think we were doing the right things." (Dzeng)

Relationship between moral distress and demographic characteristics

Saijadi *et al* found no relationship between moral distress score and gender or postgraduate year among internal medicine residents and fellows ($p=0.48$ and $p=0.81$). In contrast, moral distress scores were significantly elevated among trainees completing inpatient rotations when compared to scores among trainees completing clinical electives ($p<0.0001$). (Saijadi) Hilliard *et al* noted a relationship between moral distress and clinical experience among pediatrics residents, observing that "many of the residents in the study who were in the first part

of their training were more frustrated and confused than their more senior residents about ethical issues, how to address them with others and how to deal with them on their own." This is consistent with the literature which suggests that, unlike nurses, experienced physicians do not experience higher levels of moral distress. (Hamric 2012) Chiu noted a relationship between moral distress and gender among pediatric surgery fellows. Although women trainees were more likely than men to express disagreements with their supervisors, they were also more likely to participate in management plans despite their "experience of moral conflict." (Chiu) In this study, external constraints were more likely to be reported by women. (Chiu) Forty-six percent of women, versus 7% of men, expressed concerns that they lacked adequate supervision while providing patient care to supervising surgeons ($p=0.004$). Furthermore, 46% of women, versus 26% of men, felt "compelled to participate" in supervising staff's plans despite "moral conflict" ($p=0.037$). The remaining five studies did not comment on the relationship between moral distress and demographic characteristics.

Risk of bias within studies

Of the qualitative studies, the majority were rated moderate quality. (Table 5) For these studies, CASP scores are represented in Table 6. All three quantitative studies were rated either low or very low quality. Most studies used preliminary methods of validating results, which reduced their quality.

Discussion

Moral distress is believed to be a widespread phenomenon among healthcare professionals. However, some professional disciplines have embraced this concept with more enthusiasm than others. This is especially true of nursing, in which moral distress was first described. As a result, the non-nursing literature on moral distress is sparse.

Moral distress among physician trainees is less well understood. Studies of moral distress in this population have been heavily influenced by methods utilized in other health care disciplines. However, these methods of inquiry may not be sensitive to the duties and role obligations of physician trainees or reflect the constraints they encounter in their professional lives.

Physician trainees occupy a unique space in the healthcare environment. As they progress through training programs, these physicians acquire some authority over junior colleagues and other staff. However, supervising faculty retain considerable control over trainees' actions in the healthcare workplace. Trainees are not guaranteed independence and professional autonomy; though other healthcare professionals may believe they are. Like other healthcare staff, they may be put into positions in which they are asked to provide care that they do not agree with. Trainees rely on faculty to educate them and to determine if they have achieved milestones necessary for graduation, which contributes to a significant power differential. As trainees acquire and refine diverse clinical skills, they may perceive themselves as inadequate or underprepared to provide care, even when they have achieved competency. A lack of experience and education can cloud clinical judgement and influence what trainees perceive as the right thing to do in a particular situation. All of these factors are likely to influence how trainees experience moral distress.

Summary of evidence and limitations

This review confirms that there is limited literature on moral distress among physician trainees. Though moral distress has been clearly defined in the ethics literature, we noted a lack of agreement with regard to how moral distress was defined among included studies. In several of these, investigators seemed to conflate moral distress with other experiences common among healthcare professionals such as moral angst, emotional distress, compassion fatigue,

and conscientious objection. These misperceptions are common, especially among clinicians without a background in clinical ethics. (Epstein) Related to this, there was a lack of clarity regarding how moral distress was introduced to physician trainees, if at all. Failure to distinguish moral distress from distress more generally is likely to have reduced the investigators' ability to accurately identify it.

The included studies addressed the experiences of trainees from a small number of medical specialties. Many subspecialties, including emergency medicine, general surgery, psychiatry, physical medicine and rehabilitation were not accounted for. There was little to no consistency among studies with regard to methods. No survey tool underwent rigorous methods of validation.

Implications of moral distress

If unaddressed, moral distress has a tendency persist, leading to what is referred to as "moral residue." (Epstein) When moral residue is present, the intensity of morally distressing scenarios is amplified. (Epstein) The harms of unmitigated moral distress are innumerable. Clinicians who experience high levels of moral distress are more likely to leave the healthcare workforce. For those who remain in their positions, moral distress influences wellness, manifesting as "frustration, anger, guilt, anxiety, withdrawal, and self-blame." (Epstein) Burnout, anxiety, and depression can occur. (Epstein) In extreme situations, clinicians lose their moral integrity. (Epstein)

Recent studies have clarified the relationship between wellness and the quality of patient care. Unwell clinicians are more likely to commit medical errors and have reduced empathy. (Dyrbye and Shanafelt, 2011, 2009) The patient-physician relationship suffers - patients are less

adherent to treatment plans and report dissatisfaction with care received. (Dyrbye and Shanafelt, 2011, 2009) It is also likely that poor wellness reduces trainees' learning potential and their progress towards clinical competency.

Many have come to believe that clinician wellness is integral to a high functioning health care system. Not surprisingly, wellness initiatives in healthcare have become a priority in recent years. In 2014, Bodenheimer and Sinsky boldly stated that "care of the patient requires care of the provider." They noted that the goals of the "Triple Aim," a widespread strategy for improving population health developed by Donald Berwick, could not be achieved without also focusing on the health of those who provide care. In response, they proposed the "Quadruple Aim," which acknowledges that "improving the individual experience of care, improving the health of populations, reducing the per capita cost of health care for populations, and improving the experience of providing care" are all required to optimize the performance of the US healthcare system. (Bodenheimer and Sinsky)

Health care systems focused on satisfying the Quadruple Aim tend to focus on burnout, promoting resiliency, recruiting support staff, and streamlining healthcare. Many strategies for reducing burnout fail to address its upstream causes, including moral distress.

Responding to moral distress

Wellness initiatives in health care should incorporate strategies to identify, respond to, and prevent moral distress. In this systematic review, physician trainees indicated that discussing morally distressing cases with involved individuals was helpful. This is supported by the literature, which encourages debriefing and discussion for clinicians experiencing moral distress. (Rosenthal) Rosenthal and Clay identified several strategies to reduce moral distress

among medical students which may be applicable to physician trainees, including clinical ethics consultation, preventive ethics rounding, moral distress debriefing, and Schwartz Rounds™. (Rosenthal) Some centers are developing specific moral distress consultation services, which are similar to ethics consultation but focus more clearly on moral distress experienced by health care staff. (Hamric and Epstein)

While some root causes of moral distress cannot be eliminated, others can. It is suggested that moral distress signifies unit or institutional dysfunction. Not only is identifying and discussing moral distress a helpful coping strategy, it can also help health care leadership to identify problem areas of scenarios. Individuals experiencing moral distress feel unable to intervene or to speak up, referred to as "moral courage." Creating a safe environment for communication and discourse can resolve misperceptions and also a help illuminate problems in the health care context. For instance, if a hospital policy is felt to cause moral distress, allowing individuals to discuss concerns with leadership may affect positive change.

Two root causes of moral distress may be particularly relevant to physician trainees – "lack of understanding the full situation" and "lack of knowledge of alternative treatment plans." (Hamric. Borchers, Epstein) Identifying common causes of moral distress among physician trainees may illuminate gaps in clinical education. Eliciting experiences of moral distress among physician trainees can be used to guide curriculum development. Additionally, these opportunities may allow physician faculty to offer clarifying details of cases to trainees who may have not fully understood clinical scenarios.

Conclusions

Moral distress is experienced by diverse health care professionals. However, its root causes are likely to vary across health care disciplines and based on one's position in the hierarchy. The majority of the literature describing moral distress focuses on the experiences of nurses. Less is known regarding the experiences of physician trainees. This study demonstrates the dearth of data on physician trainees' experiences of moral distress. Given its potential to influence wellness, we believe that wellness initiatives for healthcare staff should include strategies to identify, respond to, and prevent moral distress. Additionally, eliciting causes of moral distress among physician trainees may be helpful for curriculum development.

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Figure 1: PRISMA Flow Diagram

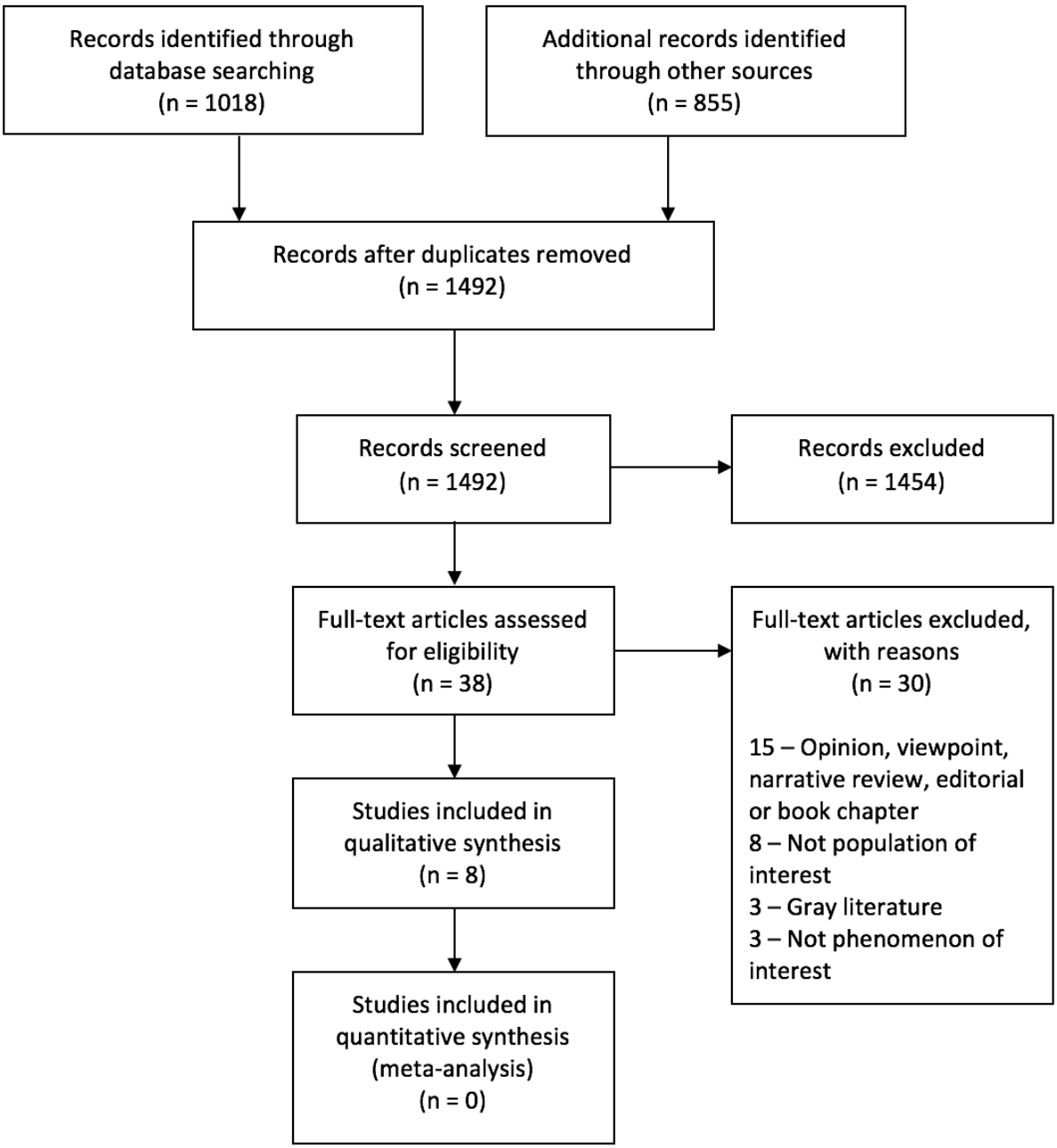

Table 1: Eligibility criteria

Inclusion Criteria	Exclusion Criteria
Population: Resident physicians (interns, residents, and fellows) **Phenomenon of interest:** Moral distress **Study Design:** Questionnaire/survey, interview, focus group **Research type:** Qualitative, quantitative, or mixed methods	**Population:** Medical students, faculty/attending physicians **Phenomenon of interest:** Burnout, emotional distress, stress **Research type:** Editorials, opinion pieces, commentary, and letters; expert opinion; gray literature

Table 2: Study characteristics

Research design	First Author	Year Published	Reported Analysis	Validation Grade*	Training Program	Number of Subjects	Percent women	Level of Training
Electronic survey (original survey tool)	Chiu	2008	n/a	2	Pediatric surgery fellows and recent fellowship graduates	40	32	28 current fellows, 12 recent graduates
Electronic survey (modified version of MDS-R)	Houston	2013	n/a	1	Unspecified	21	Not reported	Unspecified
Electronic survey (MDS-R)	Sajjadi	2017	n/a	1	Internal medicine residents	43	55	14 PGY1, 12 PGY2, 13 PGY3, and 1 PGY4 residents, 3 unspecified
Focus group	Hilliard	2007	Modified thematic analysis	2	Pediatrics residents	21	Not reported	5 PGY1, 8 PGY2, 3 PGY3, and

discussions			(open and axial coding)					5 PGY4 residents
Focus group discussions	Aultman	2014	Standard, qualitative thematic analysis	1	Obstetrics and gynecology residents	31	74	Unspecified
In-depth interviews	Dzeng	2015	Standard, qualitative thematic analysis	2	Internal medicine residents	22	36	12 residents, 10 fellows
In-depth interviews	Thomas	2016	Grounded theory	0	Pediatric critical care fellows	5	80	Unspecified
In-depth interviews	Lievrouw	2016	Standard thematic analysis	0	Gastrointestinal surgery, gastroenterology and medical oncology residents	11	55	5 “limited” experience, 6 “medium” experience

PGY = Post graduate year, MDS-R = Moral Distress Scale Revised

*Methods of validating survey tools and interview guides were graded on a 5-point scale:

0 – No validation

1 – Expert consensus

2 – At least some cognitive interviewing

3 – Developmental and field testing of beta version

4 – Analysis of properties in an another instrument if available against and against other markers

5 – Intensive advanced analysis (i.e. Item Response Theory)

Table 3: Major root causes of moral distress among physician trainees

First Author	Year Published	Clinical Situations	Internal Constraints	External Constrai
Hilliard	2007	• Assisting with procedures/operations the trainee did not feel was indicated • Attendings not directly seeing patients or not listening to their "whole story" • Inflicting suffering due to inexperience • Justifying to families attendings' decisions that the trainee did not agree with or did not understand • Witnessing unprofessional/unethical/substandard conduct or scenarios	• Inexperience and lack of preparation to carry out assigned tasks	• Communica and procedu tasks inappropriat supervised • Position in th hierarchy causes powerlessne • Workload causes unreasonabl expectations
Chiu	2008	• Caring for critically ill patients at the end of life • Witnessing unprofessional/unethical/substandard conduct or scenarios	• Lack of knowledge, experience, or preparation to carry out assigned tasks	• Communica and procedu tasks inappropriat supervised • Powerlessne due to positi in the hierar

				• Unreasonab expectations performance given worklo
Aultman	2014	• Forced to assist with operations and procedures that are not indicated • Pain management for patients with opioid use disorder • Using emergency services for non-emergent conditions		
Dzeng	2015	• Caring for critically ill patients at the end of life • Inflicting unnecessary pain and suffering • Faculty physicians unwilling to heed surrogate decision makers' request to proceed with comfort focused care • Providing inappropriate and aggressive treatments without a clear benefit to the patient		• Powerlessne due to positi in the hierar
Thomas	2016	• Caring for critically ill patients at the end of life • Providing inappropriate and aggressive treatments without a clear benefit to the patient	• Lack of knowledge, experience, or preparation	

		• Variable definitions of resuscitation • Witnessing unprofessional/unethical/substandard conduct or scenarios	to carry out assigned tasks • Role uncertainty	
Lievrouw	2016	• Colleagues' failure to acknowledge moral distress among themselves and each other		• Powerlessne due to positi in the hierar

Table 4: Coping strategies adopted by physician trainees in response to experiencing moral distress

First Author	Year Published	Method of inquiry	Adaptive coping strategies	Maladaptive coping strategies
Hilliard	2007	Focus group discussions	• Debriefing with colleagues, especially co-residents • Open discussions between staff involved with specific cases	• Avoidance or distancing oneself from distressing cases • Internalization
Chiu	2008	Electronic survey (original survey tool)	• Counseling of friends, family, and mentors.	• Avoidance or distancing oneself from distressing cases
Aultman	2014	Focus group discussions	• Crying • Debriefing with colleagues, especially co-residents	• Depersonalization

			• Healthy boundary setting with patients • Humor • Open discussions between staff involved with specific cases	
Dzeng	2015	Semi-structured in-depth interviews	• Open discussions between staff involved with specific cases	• Cynicism • Depersonalization • Rationalization
Thomas	2016	In-depth interviews	-	• Deferral of autonomy
Lievrouw	2016	In-depth interviews	-	• Deferral of autonomy
Sajjadi	2017	Electronic survey (revised Moral Distress Scale)	-	• Depersonalization • Intent to leave one's job

Table 5: Appraisal of evidence for all selected studies

		Qualitative studies	Quantitative studies
First Author	Year Published	CASP* assessment tool	GRADE** Assessment tool
Hilliard	2007	High	
Chiu	2008	-	Low
Houston	2013	-	Very low
Aultman	2014	Low	-
Dzeng	2015	Moderate	-
Thomas	2016	Moderate	-
Lievrouw	2016	Moderate	-
Sajjadi	2017	-	Low

* Critical Skills Appraisal Program

** Grading of Recommendations, Assessment, Development and Evaluation

Table 6: Quality assessment of non-quantitative studies according to the Critical Skills Appraisal Program (CASP) assessment tool

		Criteria*										Score	
First Author	**Year Published**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total/10**	**Quality****
Hilliard	2007	+	+	+	-	+	+	+	+	+		8/10	High
Aultman	2014	+	+	-	-	-	-	-	-	-	+	3/10	Low
Dzeng	2015	+	+	+	+	+	-	-	-	-	+	6/10	Moderate
Thomas	2016	+	+	+	+	+	-	-	-	+	+	7/10	Moderate
Lievrouw	2016	+	+	+	+	+	-	-	-	+	-	6/10	Moderate

A + indicates study met criteria, a - indicates study did not meet criteria.

*Criteria: 1) Was there a clear statement of research aims? 2) Is a qualitative methodology appropriate? 3) Was the research design appropriate to address the aims of the research? 4) Was the recruitment Yes strategy appropriate to the aims of the research? 5) Was the data collected in a way to address the research issue? 6) Has the relationship between researcher and participants been adequately considered? 7) Have ethical issues been taken into consideration? 8) Was data analysis sufficiently rigorous? 9) Is there a clear statement of findings? 10) How valuable is the research?

**Quality rating - 0-3 low, 4-7 moderate, 8-10 high