INTRODUCTION

The concept of Moral Distress (m.d.) was first introduced in the literature by Andrew Jameton in his study "Nursing Practice: the Ethical Issues," published in 1984. He defined the phenomenon as "the experience of knowing the ethically appropriate action to take but feeling constrained from acting on it" [1]. Since its introduction, academic interest in m.d. has increased significantly [2,3]; researchers such as McCarthy J. & Deady R. have contributed to deepening the concept. Today, the scientific community agrees that m.d. manifests when a healthcare professional perceives that their actions differ from what they believe to be right [4].

Several tools have been developed to assess this phenomenon; the most frequently used in the selected studies is the "Moral Distress Scale," developed in 1995 by Corley and updated by the same author in 2001 [5]. These tools are useful for a standardized evaluation of the phenomenon.

M.d. primarily affects healthcare professionals, especially nurses, with a prevalence exceeding 70% among Intensive Care Unit (ICU) nurses [6]. The consequences of this phenomenon manifest at the emotional level (emotional lability, anger, apathy, irritability, and decreased enthusiasm), cognitive level (boredom and inability to concentrate, leading to reduced work activities), and physical level (decreased energy, resistance, and strength, up to a general sense of malaise with consequences in social relationships) [7], ultimately leading to professional dissatisfaction and job abandonment [8]. The negative effects also impact patients, organizations and the quality of healthcare [6].

The causes of m.d. include care complexity and the frequency of stressful and morally difficult events; in particular, the transition from curative to exclusively comfort care is crucial, typically occurring after a patient intentionally forgoes treatment, does not improve with life-sustaining treatments, or when life-sustaining treatment is deemed medically and ethically inappropriate [9].

Jameton himself predicted that the concept of m.d., originating in nursing [1], would spread to other fields such as pharmacy, social work, psychiatry and palliative care (p.c.) [3,10].

The significance of this phenomenon and the multitude of studies aimed at defining its causes, potential solutions, and consequences form the basis of this Systematic Review. The primary

objective of this study is to investigate the main causes that give rise to the m.d. phenomenon, its consequences, and potential solutions, with particular reference to the field of p.c. and the professional relationship between physicians and nurses.

METHODS

We conducted a systematic review of literature published in English or Italian between 01/01/2023 and 31/12/2023. Searches were performed independently by F.D.C. and L.D. We systematically searched three databases: PubMed, Embase and Cinahl (**Table 1**). The retrieved results were then imported into Rayyan [11]. Based on eligibility criteria, two reviewers, F.D.C. and L.D., independently screened titles and abstracts and excluded irrelevant studies. Discrepancies during this screening process were extensively discussed until consensus was reached. The full text of the remaining studies was retrieved and examined to select the included articles.

Data extraction from the individual included records was conducted by F.D.C. through analytical reading of the full texts, in English. The variety of included studies, the methodologies used and the samples necessitated the reworking of common themes addressed by the individual reports; no automated synthesis tools were used.

The entire work was submitted and reviewed by a third researcher, C.P.

Search Strategy

Our study was structured according to a P.E.O., a variant of the P.I.C.O. system, which focuses on Population, Exposure and Outcome.

The research question we aim to investigate and answer is: "What are the causes and consequences of m.d. in nursing staff working in p.c. and what are the potential solutions to address and reduce it?"

The identified P.E.O. is therefore as follows:

- P. = nursing staff working in the field of p.c.
- E. = prevalence and impact of m.d.

- O. = evaluate the causes and consequences of m.d.

Consequently, the research question is as follows:

What is the prevalence and impact of m.d. (E.) in nursing staff working in the field of p.c. (P.), and what are the factors that most determine it and the consequences that result from it (O.)?

RESULTS

A total of 339 studies were identified from the three electronic search databases used (PubMed, n = 114; Embase, n = 196; and Cinahl, n = 29). After removing duplicates (n = 30) and unrelated literature (n = 292), the full texts of the remaining 17 studies were further examined for eligibility. Full-text review led to the exclusion of articles for the following reasons: full text not available (n = 1) and not answering the research question (n = 4). A total of 12 studies met the inclusion criteria and formed the final sample.

The study selection process is illustrated using the PRISMA 2020 Statement method [12] in **Figure 1**.

Of the twelve included articles, five were quantitative [13–17], six were qualitative [18–23] and one was mixed-methods [24].

Among the five quantitative studies, three were cross-sectional [14–16], one was descriptive [17] and one was quasi-experimental [13]. Among the six qualitative studies, one used a phenomenological approach [19], two were exploratory [18,23], one was descriptive qualitative [22], two used a grounded theory approach [20,21] and the mixed-methods study was a prospective cross-sectional study [24].

All studies investigated and analyzed common objectives, namely:

Ten studies [14–20,22–24] investigated the phenomenon of m.d. in relation to demographic characteristics, work experience and specific training.

Specifically, two studies [17,22] correlated m.d. with age, nine studies [14,15,17–20,22–24] with work experience and three studies [16,17,24] with specific training.

Eight studies [14,15,18–23] explored the level of collaboration between physicians and nurses and how this can influence the development of m.d..

Nine studies [13–15,17,18,20–23] assessed the correlation between communication and emotional closeness with m.d..

Two studies [14,16] investigated the relationship between m.d. and the Ethical Environment/Climate.

Six studies evaluated the relationship between m.d. and p.c. and/or Continuous Sedation and/or treatment withdrawal [15,17–21].

While three studies [14,17,22] reported the rate of professional or role abandonment among various professionals (physicians and nurses) due to m.d.; specifically, the only study that reported the abandonment rate of the medical class, in addition to the nursing class, was the study by *Hamric & Blackhall, 2007* [14].

Only one study [15] evaluated the practice of p.c. in End-of-Life during the COVID-19 pandemic.

Finally, five studies [15,19,22–24] analyzed the main critical issues and solutions identified by the various professionals who participated in the respective studies.

The key characteristics of the studies are summarized in **Table 2**.

Population

All studies included in this Review have a population consisting of nurses, but in some of them, the sample was extended to other figures: four studies [14,15,20,21] included physicians, one study [15] included students and midwives and one [21] included relatives of patients.

The nurses invited to participate totaled 1,223 [13–24].

For 967 (79%) of these, the data necessary for the study they participated in were correctly collected, while 256 (21%) were lost to follow-up as they did not complete the questionnaire (*Rezaei et al., 2023*; n = 4, or 1.6%) [16], did not return the survey (*Wiegand & Funk, 2012*; n = 157, or 61%) [22], gave incomplete answers (*Powazki et al., 2014*; n = 86, or 34%) [24], did not participate in the post-test (*DiGangi Condon et al., 2021*; n = 8, or 3%) [13], or fell within the exclusion criteria (*Wolf et al., 2019*; n = 1, or 0.4%) [17].

The physician sample invited to participate consisted of a total of 257 subjects [14,15,20,21], of whom 227 (88%) correctly completed their respective study. In the work conducted by *Hamric & Blackhall, 2007* [14], the researchers opted for the exclusion of the entire physician sample (n = 30, 12% of the total sample of this review) as only 4 of them had decided to participate, consequently making the sample impossible to compare with the nursing staff group.

The only study to include relatives of patients, for a total of 34 subjects with no loss to follow-up, was that of *Raus et al., 2014* [21].

Only six studies [17,19,20,22–24] specified the gender of the sample for both the medical and nursing classes, while four studies [13,16,18,21] preferred not to investigate this variable. Finally, for the last two remaining studies [14,15] it is not possible to identify the gender of the nursing class, unlike the medical class, as it is associated with another variable (ethnicity) [14] or no distinction was made between the medical and nursing classes, consequently expressing a single value between the two classes [15].

The age variable was collected by several studies, both for the nursing class [14–17,19,22–24] and the medical class [14,15], and ranged from a minimum of 21 years to a maximum of 63 years [24].

The population characteristics are reported in **Table 3**.

Setting and Geographical Area

In most studies, the setting is the ICU, specifically, eight studies [13–15,17–19,22,24] were conducted within a general and specialist adult ICU. In two of these eight studies [14,17], the setting was also extended to Neonatal and Pediatric Intensive Care, while one [24] extended the setting to Oncology, Palliative Medicine and Bone Marrow Transplant Units. Two studies [16,23] were conducted exclusively within NICUs, one study [20] was conducted within medical-surgical Operating Units, and one study [21] examined home settings, hospital Operating Units (mainly Oncology Operating Units) and specific p.c. contexts (Hospices and p.c. Units), excluding nursing homes for the elderly due to their particular organization.

The studies examined were conducted in various geographical areas: five studies [13,14,17,22,24] in the U.S.A. (n = 5; 42%), two [16,19] in Iran (n = 2; 17%), one [15] in the Czech Republic (n = 1; 8.2%), one [18] in the United Kingdom (n = 1; 8.2%), one [21] is a study conducted simultaneously in multiple countries, namely the United Kingdom, the Netherlands, and Belgium (n = 1; 8.2%), one [23] in China (n = 1; 8.2%), and one [20] in Canada (n = 1; 8.2%).

The characteristics of the setting and geographical area are reported in **Table 4**.

Impact of Moral Distress

In most of the studies examined, the setting was the ICU, an environment where care and treatment are extremely demanding in terms of both specific knowledge and hard and soft skills [15]; it also represents a unique work environment where nurses often face situations that endanger the lives of their patients and frequently involve ethical dilemmas [19]. In an environment strongly focused on physical care, i.e., solving even severe and extreme health problems, as is the ICU, a patient in irreversible or terminal conditions can trigger a sense of helplessness in nurses [19].

From the analysis of the studies examined, it emerges that m.d. represents a common emotional experience among ICU nurses [16,17,19] and a phenomenon with significant numbers: for example, in the study by *Wiegand & Funk, 2012*, 79% of the participating nurses experienced m.d. [22], while in the study by *Prokopová et al., 2022*, this phenomenon was experienced by 51.8% of the sample consisting of physicians and nurses [15]. In the study by *Wolf et al., 2019*, only 10.2% of nurses reported never having experienced m.d. [17].

Based on the analyzed studies, it is possible to derive some characteristics of the professionals at higher risk:

- Nurses exhibit higher average levels of m.d. compared to physicians [14];
- Older age [17,22] and longer work experience [15,17,22] seem to predispose to a higher risk of experiencing m.d.;

- The absence of adequate specific training or professional experience can affect the development of m.d. [15,17].

Triggers of Moral Distress

The studies included in this review have shown that healthcare professionals experienced two types of situations as particularly stressful:

- The transition from purely curative treatment to p.c. [23];
- The continuation of invasive treatments for terminally ill patients [14].

Although not an exclusive and necessary condition, a patient facing an end-of-life journey is a very fertile ground for the development of the complex phenomenon of m.d. [22]: it is in these circumstances that the factors related to professional suffering indicated by the studies examined develop. In particular, some macro-areas can be identified:

- **Emotional closeness with patients and caregivers and communication processes**

One of the factors that most affects the emotional burden experienced by nurses is the relationships that patients and their families build with these professionals, relationships that can both increase job satisfaction and cause an increasing burden: within this relationship, in fact, requests are made that present discrepancies between the needs of patients, the desires of families and what is permitted by regulations, often leaving nurses trapped in conflicting situations and responsible for decisions [19]. The discrepancy between what the patient and family desire and the actions that are actually taken can lead the nurse to perceive the care provided as inadequate and below standards [16], an element that is indicated by the nurses themselves as one of the most important triggers of m.d. [15].

Furthermore, it emerged that nurses feel more comfortable assisting a patient with ongoing continuous sedation for compassionate purposes, while the moments in which the patient still seems to be suffering despite the ongoing palliative treatment trigger a sense of anguish [21].

In this context, suboptimal communication represents one of the main causes that gives rise to m.d. [13,15]. Most of the sample of health professionals stated that they did not possess adequate knowledge,

skills and abilities to comfort caregivers [23], consequently feeling uncomfortable in high emotionality moments or in talking with the patient and family about death and dying [17]. Nurses' concerns are focused on the emotional management of loss, with the fear of trivializing it [23], but also on the fact that patients and caregivers are guaranteed accurate and adequate information, particularly in situations where they are asked to make a choice about continuing treatment [20]. Medical staff are instead more focused on the content to be communicated to families and on the fear that the final decision is too influenced by their personal values rather than those of those directly involved [20].

- **Palliative Care**

In the context described above, the p.c. service can offer essential support, facilitating discussions on care objectives, the transition between lifesaving and comfort care, and providing support to patients, families and healthcare personnel [17].

Six studies have evaluated the correlation between m.d. and p.c., Continuous Sedation and/or treatment interruption [15,17–21].

Contrary to what one might believe, these topics are still too little known: for example, in the study by *Wolf et al., 2019*, it emerged that 45.8% of the participants did not feel competent in the matter of advance directives, living wills and do-not-resuscitate orders; furthermore, 14.1% stated that in their work context p.c. is never applied or is rarely applied (in these professionals m.d. was higher with a score of 5.2 compared to 2.1 of those who implement p.c. regularly), while 41.1% stated that they are sometimes used on indication [17]. Furthermore, p.c. are perceived as "more demanding than complete treatment" by 56.2% of healthcare professionals [15], particularly with regard to the weight of responsibility that the decision to undertake a path of this type entails. This decision is certainly choral but is substantially the responsibility of medical personnel [18].

Continuous Sedation, one of the most common practices of p.c., has a great emotional impact on professionals, influenced by the degree of emotional and physical closeness to the patient. It is seen

as a treatment that allows the natural process of the disease to follow its course, shifting the causal responsibility of death from the caregiver to the natural order of events [21].

Personal and religious beliefs influence the ability to rationalize and participate in situations of refusal and suspension of care [18], both for healthcare professionals and for users [19].

Wolf et al., 2019 emphasize that nurses who perceived a more appropriate use of p.c. services tended to have lower levels of m.d., while those who found deficiencies in access to the same service were more inclined to develop m.d., particularly if these deficiencies involved a perceived harm to patients, such as a painful death process [17].

- **Role of the physician and relationship with the nurse**

An aspect investigated by many of the studies included in this Review is the relationship between the two main health figures involved in the end-of-life process: physicians and nurses.

The studies analyzed report a series of conflicting interprofessional and intraprofessional situations related to these aspects: the prolongation of useless treatments [13,22], the over or under-administration of analgesic drugs [22], inconsistency of opinions regarding the transition to p.c. [15].

Nurses, while feeling competent in the care of the acute patient, perceive a difficulty in managing the dilemma between palliative and curative care; the emotional burden is aggravated by performing invasive procedures on physicians' orders [23]. Many nurses believe they have an important role in the decision-making process, but they are not always consulted, such as in the case of transfer to Intensive Care or Continuous Sedation [18]; often the nurse has a clear idea of what is acceptable, and they perceive physicians' decisions as useless aggressive treatments [21].

Differences in opinions, objectives and responsibilities within the team can negatively affect the m.d. of healthcare professionals [13–15,18–21]. Although this phenomenon affects both nurses and physicians, the causes are different: physicians are responsible for therapeutic decisions [14,18], while nurses often feel limited by physicians and forced to follow orders that they do not always consider ethical [14,20]; furthermore, the latter perceive that they are subjected to morally stressful situations more frequently

than the former, since they cannot move away from the patient's bed and are therefore immersed in daily care to a greater extent [14]. The moral suffering generated by patient care is however intense for both, but neither professional category seems to recognize the burden borne by the other [14,20].

The hierarchical structure (nurses themselves report being in an "inferior" position) is perceived as a key element in nurses' distress: in fact, the latter do not feel free to act as moral agents in the context of care [19,20] and at the same time perceive that they are not heard either by physicians [15,20,22] or by the administration, which, ignoring the suggestions of these professionals, does not value their contribution [19].

- **Organizational conditions and training**

The studies by *Hamric & Blackhall, 2007* [14] and *Rezaei et al., 2023* [16] examined the issues related to the organization according to the definition of Olson (1998), which defines the ethical climate as "the set of practices and organizational conditions that promote the discussion and resolution of decisions with ethical content". It is therefore a co-constructed and influenced variable over time not only by the individual members of the team, but also by the type of organization set up by the coordination and management.

Hamric & Blackhall, 2007 highlighted that this variable was evaluated negatively by nurses compared to medical colleagues (30.8 vs. 37.9; $p = 0.001$) and that nurses with high m.d. scores perceive a more negative Ethical Climate/Environment, less satisfaction with the quality of care and less collaboration with physicians compared to nurses and physicians with low m.d. [14]. The study by *Rezaei et al., 2023* obtained similar results, demonstrating a significant and inverse relationship between the intensity of m.d. and the Ethical Climate, i.e. as the intensity of m.d. increases, the Ethical Climate becomes less favorable [16].

It is essential however that nurses have a support system to ask for help; debriefing represents an important strategy to externalize negative emotions [22]. A safe environment to discuss, the promotion

of self-care and the sharing of emotions contribute to the creation of a positive Ethical Climate, which also has favorable effects on patients and families [16].

Training can have variable effects on m.d.: nurses with master's degrees may be more exposed to risk [16], while young or inexperienced nurses tend to have lower levels of m.d. [17]. A deficiency in university training on the care of the dying and p.c. emerged [17,24], which has legal and ethical implications. Filling this gap should be a key objective of training initiatives, with regular specific updates regarding the End of Life [24].

Consequences of Moral Distress

The professionals involved in the studies perceive and report negative consequences of m.d. on both patients and nurses.

- For the patient: suffering, prolonged death, undignified death, lack of respect for quality of life, inappropriate care, delayed treatment, prolonged hospitalization, disrespect, inability to be with family, and false hopes [22].
- For the nurse: suffering, unpreparedness, overwhelm, pain, guilt, financial burden, fatigue, stress, anger, inability to spend time at the patient's bedside, and organ donation [22].

In addition, the variable of job abandonment rates in nursing [14,17,22] and medicine [14] correlated with m.d. was investigated.

In the study by *Hamric & Blackhall, 2007*, almost half of the nurses (45% of the total sample of 196 nurses) had left (17%) or considered leaving (28%) their job due to m.d., while only 3% of physicians (out of a total sample of 29 physicians) had considered this possibility [14]. Similar results were also found in the study by *Wolf et al., 2019*, which states that 17.7% of the nurses who participated in the study (out of a total sample of 167 subjects) reported wanting to change jobs due to m.d. [17]; these professionals had a significantly higher degree of m.d. than the other participants (6.5 vs. 3.8 with $p < 0.01$). Furthermore, 7.3% had already left a position in ICU in the past due to this phenomenon, while 38.8% reported wanting to do so. Even in the open-ended survey by *Wiegand & Funk, 2012*,

"some nurses described feelings of decreased morale and job satisfaction, and some nurses stated that they had considered leaving their jobs" [22].

A common dynamic in Western countries, later extended to organizations around the world, is economic rationalization, which has led to the reclassification of healthcare as a business, requiring nurses (and healthcare professionals in general) to do more with fewer resources [23], a condition in which it is often difficult to reconcile the care considered ideal by professionals with the extra workload and the conflicting demands of curative and p.c.. Consequently, nurses find themselves facing conflicting obligations; however, when faced with ethical dilemmas, these professionals are more inclined to decisions that honor their commitment to society as a whole and their patients in particular [22].

Nurses who expressed an intention to leave the profession are characterized by a significantly higher level of m.d. than those who did not have this intention (6.5 vs. 3.8. $p < 0.001$) [17]. Consequently, without appropriate intervention to prevent scenarios that lead to m.d. and improve nurses' resilience, the consequences of the phenomenon can have far-reaching effects on the well-being of professionals, as well as on turnover and staff, which can threaten patient safety and cause unnecessary waste of valuable human and financial resources [17]. The level of m.d. represents an essential factor for the risk of burnout or job dissatisfaction and potential turnover and attrition in the profession [15].

Inadequate staffing, insufficient training, and poor preparation, education, or mentoring have increased nurses' burden and distress [16,17,19]; furthermore, staff shortages compromise nurses' job satisfaction in caring for ICU patients [14,16,19], with a consequent risk of job abandonment due to the resulting m.d. [22]. Staff in human resources management are in a position to support nurses in ensuring adequate staffing and continuous professional development, hence the need for administrators to recognize the burden borne by professionals who are required to witness suffering as part of their daily work [20].

Possible Improvement Interventions

Several included studies have formulated, based on the participants' opinions, some hypotheses on possible improvement interventions that can address the phenomenon of m.d.; the suggestions concern not only professionals but also patient family members.

The study by *Prokopová et al., 2022*, states that ensuring a dignified death would reduce m.d. by 76% among healthcare professionals [15], but how to concretize this goal? Many of the opinions expressed focus on relational aspects, such as relaxing family visitation policies, allowing them greater access to the operating unit in the end-of-life phase [23] or introducing changes in communication methods with patients and families, avoiding giving false hopes but converging efforts on care objectives that promote optimal care [22].

Another important suggestion for reducing m.d. concerns the management of the professional's personal stress, who should be able to express their feelings with peers [19]. Several studies have proposed coping strategies and defense mechanisms to deal with m.d., including maintaining a distant relationship with the patient and family, talking with peers, and practicing spirituality [19,21–24].

Decision-making is often a source of conflict and discontent, but close and collaborative communication can help avoid m.d. [15,18,20]; empowering nurses within the organization can reduce the frequency and intensity of m.d.: in fact, there are less frequent and less intense episodes in nurses who feel empowered [13]. On the other hand, the moral burden perceived by physicians could decrease if these professionals shared their uncertainties and difficulties with nurses [20].

The key factor that must therefore be supported is teamwork, in which everyone has the opportunity to contribute to the decision-making process. This allows exploring differences in perspective and reaching consensus on treatment withdrawal and the provision of p.c. [15,20,21].

Finally, the study by *Powazki et al., 2014* [24], goes so far as to build a "toolkit" for end-of-life care, which includes information on symptom control, communication, and bereavement resources, to increase nurses' confidence.

In summary, improving working conditions and support for healthcare professionals, along with specific care policies and tools, can significantly reduce m.d.

DISCUSSION

The phenomenon of m.d. appears to be a common emotional experience in the healthcare setting, particularly among nurses [16,17,19], and can have, as seen, serious consequences primarily on the professional themselves [14,17,22] and, cascading down, also on the individual patient [22], on families, and on the organization of the care facility in general [23].

The studies included in this review were conducted in various countries, spanning four continents and confirming that m.d. is a common problem internationally that is increasingly attracting research attention due to its growing magnitude. Addressing this phenomenon must become part of the objectives of the administrative sphere, through the recognition of the emotional and professional burden and an attention to psychological aspects in managing a delicate moment such as accompanying death [15,17].

This work has outlined, as seen, four areas that encompass the main factors related to the onset of m.d.:

1. emotional closeness with patients and caregivers and related communication processes [13,15–17,19,20,23], in work environment that sees the therapeutic relationship as one of the main tools for building a care path that is satisfactory for all parties;
2. the system of delivery and use of p.c. [15,17–21], which are still little known and underutilized, despite their high potential: professionals specialized in this area are in fact able to provide support, guidance and relief to both those who provide care and those who receive it;
3. the relationship between medical and nursing staff [13–15,18–23] who, despite or precisely because they work side by side daily, often encounter decisional and managerial conflicts, struggling to recognize each other's emotional burden;
4. organizational conditions and their correlation to specific and continuous professional training [14,16,17,22,24], two elements that are able, according to the collected data, to significantly affect the onset and especially the management of m.d. and its consequences.

There are therefore many aspects on which it is possible to work to improve the management of m.d., which cannot be completely eliminated [2], but which can be improved through the remodeling of care schemes [22,23], spaces for sharing and active listening [15,18–20], implementation of teamwork [13,15,20], care of the professional in terms of psychological well-being [19,21–24], specific continuing education [17,24] and access to specific tools such as the p.c. system [15,20,21].

CONCLUSIONS

The potential consequences of m.d. require the investigation and implementation of strategies to recognize and manage it: in addition to quantitative exploration, further qualitative analyses are therefore necessary to acquire a deeper understanding of m.d. from the staff's point of view. The ultimate aim of this analysis is not purely academic but should aim to provide management with a comprehensive perspective for understanding m.d. and for formulating reliable strategies and structuring more accessible p.c. training for nurses, including opportunities to promote self-care and resilience.

Limitations and Strengths

This Systematic Review has some limitations, including the fact that it refers to a limited period of time and the inclusion of a limited number of studies.

The data extraction of individual records was carried out by a single evaluator.

On the other hand, there are also several strengths, such as the screening of records carried out independently between two authors and only later, through direct comparison, those deemed irrelevant by both were excluded, and the entire work was submitted and reviewed by a third researcher.

AUTHORS' CONTRIBUTIONS

F.D.C. and L.D. contributed to the ideation and design.

F.D.C. contributed to the acquisition, analysis and interpretation of the data, while F.D.C. and L.D. contributed to the drafting of the manuscript.

C.P. and J.E.E. contributed to the critical revision of the manuscript for important intellectual content.

C.P. was involved in the partial and final supervision of the work.

All authors contributed to the critical revision of the manuscript. All authors read and approved the final manuscript.

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Not applicable.

COMPETING INTERESTS

We do not have potential conflicts of interest concerning this article's research, authorship, and publication.

Table 1 – Search Strategy

Medline PubMed	((Perception) OR (Concept Formation)) AND ((Nurs*) OR ((Personnel) AND (Nursing)) OR (Nursing Personnel) OR (Registered Nurses) OR (Nurse AND Registered) OR (Nurses AND Registered) OR (Registered Nurse)) AND ((moral distress) OR (moral stress) OR (moral responsability) OR (moral dilemma) OR (conscience) OR (ethical confrontation)) AND ((Palliative medicine) OR (Palliative care) OR (Terminal Care) OR bereave* OR hospice* OR (advanced cancer) OR (end of life) OR (terminally ill) OR (palliative*))
Embase	(Perception OR "concept formation") AND ((nurse OR nurses OR "health care personnel" OR "hospital personnel") NOT ("clinician" OR "physician") AND "nursing staff" OR nursing OR "registered nurse" OR (nurse AND "registered nurse")) AND ("ethical dilemma"/exp OR "ethical" OR "conscience"/exp OR conscience OR "ethical decision making"/exp OR "ethical decision making" OR "ethics"/exp OR ethics) AND ("palliative therapy" OR "terminal care" OR "hospice care" OR "hospice" OR "terminal care" OR "terminal disease" OR "advanced cancer")
Cinahl Plus with Full Text History and Results	(Perception) AND (nurse OR nurses OR nursing OR "nursing staff" OR "registered nurse") AND ("moral distress" OR "ethical dilemma" OR "moral stress") AND ("palliative care" OR "end of life" OR "terminal care" OR "hospice care" OR hospice OR palliative)

Figure 1 – PRISMA 2020 Statement

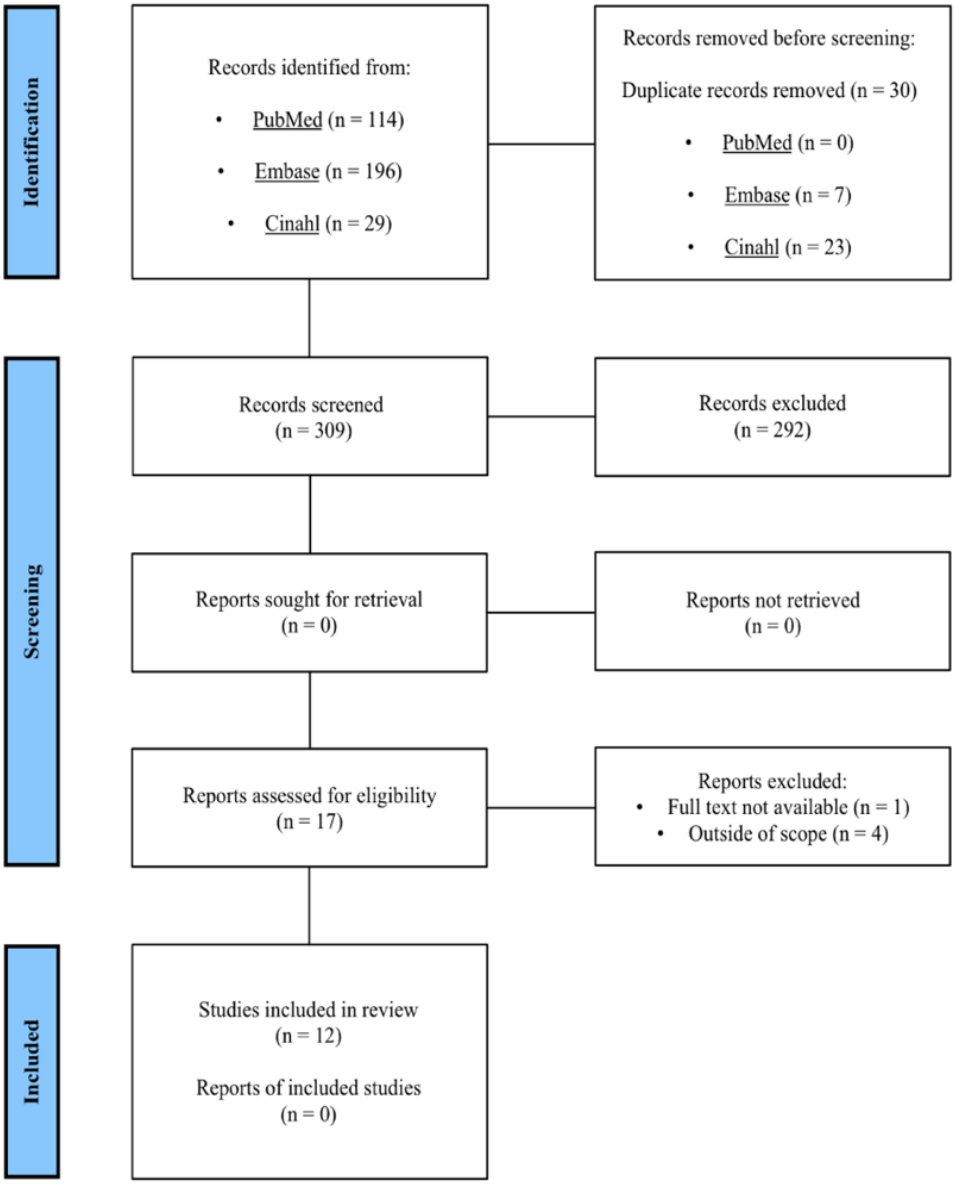

Table 2 – Study Characteristics

Author/Year	Type of study	Study design	Objective
Yam et al., 2001 (23)	Qualitative	Exploratory	To explore the experiences of neonatal nurses in caring for dying infants, their perception of p.c. and the factors influencing their care
Oberle & Hughes, 2001 (20)	Qualitative	Grounded-Theory	To identify and compare the perception of ethical problems by physicians and nurses
Hamric & Blackhall, 2007 (14)	Quantitative	Cross-sectional	To explore the perspectives of nurses and physicians on the care of dying patients in ICUs, with a focus on the relationships between m.d., ethical climate, physician/nurse collaboration and satisfaction with the quality of care
Wiegand & Funk, 2012 (22)	Qualitative	Descriptive qualitative	To determine the clinical situations that caused m.d. to ICU nurses. The authors' three questions: 1) What situations caused m.d. to ICU nurses? 2) What were the consequences of each situation? 3) What would ICU nurses do differently if they were to face a similar situation in the future?
McLeod, 2014 (18)	Qualitative	Exploratory	To explore ICU nurses' perception of the ethics involved in treatment refusal and withdrawal
Raus et al., 2014 (21)	Qualitative	Grounded-Theory	1) How do physicians, nurses and relatives report having dealt with the emotional impact of being involved in continuous sedation until death? 2) How does this relate to the understanding of their own moral responsibility?
Powazki et al., 2014 (24)	Mixed-Methods	Prospective cross-sectional	1) To assess nurses' perceived ability and comfort in caring for the actively dying; 2) To determine whether professional ability and comfort were associated with any of the 6 demographic characteristics: age, clinical experience, education level, gender, nursing unit and continuing education; 3) To identify areas of clinical challenge to promote educational initiatives to stimulate best nursing practices
Wolf et al., 2019 (17)	Quantitative	Descriptive	To examine ICU nurses' perceived knowledge of p.c., their recent experiences of m.d. and possible relationships between these variables

DiGangi Condon et al., 2021 (13)	Quantitative	Quasi-experimental	To assess nurses' moral and structural distress and workplace empowerment before and after an 8-week intervention period
Nikbakht et al., 2021 (19)	Qualitative	Phenomenological	To explore the experience of m.d. among nurses in long-term care of the elderly through a phenomenological study
Prokopová et al., 2022 (15)	Quantitative	Cross-sectional	To evaluate p.c. practice in ICUs during the COVID-19 pandemic, the level of m.d. and its possible modifiable factors
Rezaei et al., 2023 (16)	Quantitative	Cross-sectional	To explore the relationship between m.d., ethical climate and attitudes towards end-of-life care among NICU nurses

Table 3 – Population Characteristics

Author/Year	Sampling type population	Population	Lost to Follow Up	Inclusion Criteria	Exclusion Criteria
Yam et al., 2001 (23)	Convenience sampling	10 nurses	0	* Currently working full-time in NICU * Worked in NICU in the last 3 years * Had to care for at least one terminally ill infant who eventually died while in the Operating Unit * Willing to articulate their feelings and experiences	Not mentioned
Oberle & Hughes, 2001 (20)	Nominal sampling	14 nurses 7 physicians	0	Not mentioned	Not mentioned
Hamric & Blackhall, 2007 (14)	Not mentioned	Site 1: 106 nurses 29 physicians Site 2: 90 nurses 30 physicians	30 physicians from Site 2	Working in one of the ICUs of the two Sites	Not mentioned
Wiegand & Funk, 2012 (22)	All nurses from the six adult ICU	204 nurses	157 nurses	Working in one of the six ICUs	Not mentioned
McLeod, 2014 (18)	Purposive sampling	6 nurses	0	Registered nurses who had completed a post-registration specialist course in Intensive Care Nursing	Not mentioned
Raus et al., 2014 (21)	Not mentioned	164 57 physicians (17 UK, 22 NL, 18 BE) 73 nurses	0	Physicians, nurses and relatives who were most in contact with dying patients/families	Not mentioned

		(25 UK, 28 NL, 20 BE) 34 relatives (8 UK, 13 NL, 13 BE)			
Powazki et al., 2014 (24)	Convenience sampling	209 nurses	86 nurses	All primary (direct) care nurses were eligible and participation was voluntary	Not mentioned
Wolf et al., 2019 (17)	Convenience sampling	168 nurses	1 nurse	* Holding a license as a registered nurse * Working in one of the 7 ICUs	Nurses not permanent such as travel, agency or temporary replacement staff
DiGangi Condon et al., 2021 (13)	Convenience sampling	25 nurses	8 nurses	Nurses who worked at least 50% of their usual daily shift schedule during the study period and completed the required anonymous surveys	Not mentioned
Nikbakht et al., 2021 (19)	Purposive sampling	9 nurses	0	* Holding a Bachelor's or Master's Degree * Working in Intensive Care for at least 1 year	Not mentioned
Prokopová et al., 2022 (15)	Questionnaire open to all operators working in ICUs during COVID-19	313 healthcare workers	0	Questionnaire open to all operators working in ICUs during the COVID-19 pandemic	Not mentioned
Rezaei et al., 2023 (16)	Census of nurses working in NICUs	130 nusrses	4 Excluded	Bachelor's Degree in Nursing	Failure to answer more than 10% of the questionnaire questions

Table 4 – Characteristics of the Setting and Geographical Area

Author/Year	Country	Setting
Yam et al., 2001 (23)	China (Hong Kong)	NICU
Oberle & Hughes, 2001 (20)	Canada	Medical-sirgical Units
Hamric & Blackhall, 2007 (14)	U.S.A. (Virginia)	Site 1: 7 ICUs (Cardiac/vascular surgery, general surgery, neurotrauma, general medicine, coronary care, neonatal and pediatric) Site 2: 7 ICUs (Coronary, general surgery, burns/trauma, neuroscience, cardiovascular/thoracic, pulmonary and vascular surgery)
Wiegand & Funk, 2012 (22)	U.S.A.	6 adult ICUs
McLeod, 2014 (18)	United Kingdom	ICU
Raus et al., 2014 (21)	United Kingdom Netherlands Belgium	Home, hospital (mainly Oncology Operating Units) and specialist p.c. setting (Hospice and p.c. Units)
Powazki et al., 2014 (24)	U.S.A. (Ohio)	Hospital units with known high mortality rates (Cardiological ICU, Oncology Unit, Palliative Medicine Unit, Bone Marrow Transplant Unit, Medical ICU, Surgical ICU)
Wolf et al., 2019 (17)	U.S.A.	7 ICUs of a Level 1 hospital (Neonatal, Pediatric, Cardiothoracic, Neuroscience, Medical, Surgical Coronary)
DiGangi Condon et al., 2021 (13)	U.S.A.	ICU
Nikbakht et al., 2021 (19)	Iran	Units of hospital affiliated with Tehran University of Medical Sciences

	(Teheran)	
Prokopová et al., 2022 (15)	Czech Republic	ICUs during the COVID-19 pandemic
Rezaei et al., 2023 (16)	Iran (Kerman, Jiroft, Bam e Rafsanja)	NICU

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