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REVIEW ARTICLE

Moral Distress and Moral Injury in Military Healthcare Clinicians: A Scoping Review

Melissa A. Wilson, PhD,[1,2] Amy Shay, PhD,[3] J. Irene Harris, PhD,[4] Nicole Faller,[1] Timothy J. Usset, MDiv, MPH,[5] Angela Simmons, PhD[6]

Introduction: Healthcare clinicians are often at risk of psychological distress due to the nature of their occupation. Military healthcare providers are at risk for additional psychological suffering related to unique moral and ethical situations encountered in military service. This scoping review identifies key characteristics of moral distress and moral injury and how these concepts relate to the military healthcare clinician who is both a care provider and service member.

Methods: A scoping review of moral distress and moral injury literature as relates to the military healthcare clinician was conducted on the basis of the Joanna Briggs Institute scoping review framework. Databases searched included CINAHL, Cochrane Central Register of Controlled Trials, MEDLINE (Ovid), Embase (Ovid), PsycInfo, 2 U.S. Defense Department sources, conference papers index, and dissertation abstracts. Reference lists of all identified reports and articles were searched for additional studies.

Results: A total of 573 articles, published between the years 2009 and 2021, were retrieved to include a portion of the COVID-19 pandemic period. One hundred articles met the inclusion criteria for the final full-text review and analysis.

Discussion: This scoping review identified moral distress and moral injury literature to examine similarities, differences, and overlaps in the defining characteristics of the concepts and the associated implications for patients, healthcare clinicians, and organizations. This review included the unfolding influence of the COVID-19 pandemic on moral experiences in health care and the blurring of those lines between civilian and military healthcare clinicians. Future directions of moral injury and moral distress research, practice, and care are discussed.

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From the [1]U.S. Air Force Research Laboratory, Dayton, Ohio; [2]College of Health, Education and Human Services Department of Nursing, Wright State University, Dayton, Ohio; [3]School of Nursing, Indiana University, Indianapolis, Indiana; [4]VA Maine Healthcare System, Lewiston, Maine; [5]Division of Health Policy & Management, University of Minnesota, Minneapolis, Minnesota; and [6]Daniel K. Inouye Graduate School of Nursing, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Address correspondence to: Melissa A. Wilson, PhD, Nursing, College of Health, Education, and Human Services, Wright State University, 3640 Colonel Glenn Highway, Dayton OH 45435. E-mail: Melissa.a.wilson@wright.edu.

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INTRODUCTION

Healthcare clinicians are often at risk of psychological distress due to the nature of their occupation. Military healthcare clinicians experience unique hardships and are at risk for additional psychological suffering related to moral and ethical situations encountered within the environment of military service.[1,2] Moral distress (MD) and moral injury (MI) are 2 types of moral suffering identified in the literature.[3] MD occurs when an individual knows the right action to take, but internal or external constraints lead to actions inconsistent with professional values, thus compromising moral integrity[4] as well as patient care safety.[5–7] MI occurs when a person experiences the psychological consequence of (1) doing something they view as wrong, (2) seeing others behave in ways they view as wrong, (3) witnessing severe human suffering, and (4) betrayal by someone they regard as having legitimate authority over them in a high-stakes situation.[8–10] Military healthcare clinicians are simultaneously caregivers and service members, which places them in situations where conceptually, both MD and MI are applicable.

The concepts of MD and MI are well developed in the literature within specific populations. MD has been studied extensively in civilian nursing and other healthcare professionals since the 1980s. Similarly, MI in military service members has been a well-studied phenomenon since 2009. The military healthcare clinician represents a unique population for examination of these concepts wherein the patient care provider is also a service member, resulting in conceptual overlap, and at times, the terms are used interchangeably.

The literature differs on the specific definitions of MD and MI concepts. Both terms have clear overlapping characteristics and potential distinctions. Recent MI publications involving the impact of coronavirus disease 2019 (COVID-19) on healthcare clinicians illustrate the evolution of MI beyond military service members to healthcare clinicians.[11–14] These recent studies reveal a need for greater conceptual clarity and understanding in general and specifically in the military healthcare clinician population. The intent of this scoping review was not to repeat previous concept analyses on the individual topics of MD and MI[15–18] but rather to build from this work to evaluate what is known about the concepts and how MI is conceptually depicted in healthcare clinicians. The progressive development of concepts allows us to understand how these terms are applied in the literature. This is especially relevant if there are overlapping features so that we can better understand each concept individually and collectively by examining them together. The objectives of this scoping review are to (1) assess available literature and identify similarities, differences, and overlaps in the concepts of MD and MI and (2) describe the relationship of these key characteristics to the military healthcare clinician.

METHODS

A scoping review was performed to identify available literature for MD and MI used to examine key characteristics of the concepts as they apply to the military healthcare clinician. The protocol for this study was developed using the Joanna Briggs Institute framework and can be accessed at https://jbi-global-wiki.refined.site/space/MANUAL/4688844/Appendix+11.2+PRISMA+ScR+Extension+Fillable+Checklist.[19] The protocol was not registered. The PRISMA extension for scoping reviews was used to report results.[20] This scoping review was conducted in 3 phases. First, literature was reviewed that included conceptual principles of MD pertaining to the healthcare clinician. Second, the literature was reviewed separately for MI as it pertains to the healthcare clinician. Finally, literature was reviewed that addressed both MD and MI.

Eligibility Criteria

The team established inclusion criteria for article selection. Studies of MD and/or MI involving healthcare clinicians in a healthcare role, who practice in a facility that conducts healthcare services, within or outside of the U.S. in civilian or military contexts, were included. Exclusion criteria were studies conducted outside the healthcare setting and nonresearch-based sources that did not contribute to the conceptual understanding of MD or MI, such as opinions or editorials. Because the refinement of both concepts has evolved drastically in the past 10–15 years, the study's lower date limit was set at 2009.[21] The upper date limit was 2021. Sources of information included English-language peer-reviewed published and unpublished literature, including primary research studies, both qualitative and quantitative; systematic reviews; meta-analyses; reports; and clinical practice guidelines.

Information Sources

A librarian executed searches after consultation with the research team concerning the study objectives. Databases searched were BIOSIS, CINAHL, Cochrane, MEDLINE, PsycINFO, Scopus, and OVID. The search for unpublished studies included conference papers index and dissertation abstracts. Two U.S. Defense Department sources were also searched: The Joint Trauma System Defense Center of Excellence for Trauma repository and the Defense Technical Information Center

Table 1. Keywords and Search Terms Used

Search Terms
Moral Injury AND Moral Distress; Moral Injury AND Spiritual Distress; Moral Distress AND Spiritual Distress; Moral Distress AND Burnout; Moral Distress AND Compassion Fatigue; Moral Distress AND Secondary Traumatization in Healthcare Providers; Moral Injury AND Burnout; Moral Injury AND Compassion Fatigue; Moral Injury AND Secondary Traumatization in Healthcare Providers; Moral Injury AND Healthcare Provider; Moral Injury AND Nurse; Moral Injury AND Physician; Moral Injury AND Suicide; Moral Distress AND Suicide; Concept analysis and moral distress; concept analysis and moral injury; scoping review and moral distress; scoping review and moral injury. The following query was also performed: moral injury or moral distress or spiritual injury or ethical distress) AND (burnout or compassion fatigue OR secondary traumatization OR PTSD OR suicide OR concept analysis OR scoping review
Query: (moral injury or moral distress or spiritual injury or ethical distress) AND (burnout or compassion fatigue OR secondary traumatization OR PTSD OR suicide OR concept analysis OR scoping review) AND (healthcare providers or nurses or physicians or doctors)

repository for research and engineering information. With regard to the Defense Technical Information Center search, a Department of Defense (DoD) personnel team member conducted the search using designated search terms. A plan was in place so that only DoD personnel on the team had access to reports identified as Distribution B–E with non-DoD personnel access limited to Distribution A reports. It should be noted that no relevant records were identified from the search of the Defense Department repositories.

Search Strategy

The scoping review literature search was carried out at 3 distinct time points between May 2020 and September 2021. Search terms were established by the team (Table 1). The initial search of databases was conducted using all identified keywords and search terms of text words contained in titles or abstracts, excluding those abstract findings that did not meet the objectives of this review. The initial literature search yielded 181 articles. Analysis of words contained in titles and abstracts of retrieved articles as well as index terms revealed no additional relevant search terms. The second literature search was conducted across all databases 9 months later, yielding 193 articles. Owing to the length of time elapsed and the COVID-19 impact on MD and MI research, the team elected to pursue a third literature search in September 2021, which yielded 199 additional articles. For each review phase, reference lists of all identified reports and articles were searched for potential additional published studies, unpublished studies, and gray literature.

Study Selection Process

A designated team member served as the central project coordinator and repository manager of literature and reviewer results. Three topic teams of 2 reviewers each were assigned the topic areas of MD, MI, or MD/MI combined on the basis of reviewer expertise. Titles and abstracts of all articles were screened independently by all 6 reviewers for assessment against the inclusion criteria. Any discrepancies in record selection were discussed among the entire team until consensus was achieved. Once the screening process was complete, full-text versions of all eligible records were retrieved.

Data Charting Process

A scoping review data abstraction form was created using the Joanna Briggs Institute scoping review template.[19] Each topic team member independently reviewed full-text articles identified for relevance to inform the scoping review objectives utilizing the scoping review template. Initially, the team recorded relevant concepts from the full-text review. After multiple meetings to discuss these concepts, we reduced them to key concept characteristics according to the review objectives.

Data Items

These key characteristics became the basis for the concepts table. Conceptual findings were discussed repeatedly with the entire scoping review team to form the final analysis. Factors from the extractions were organized in a table form on the basis of the theoretical concept (MD, MI) similarities, differences, overlaps, and discussion points according to the review objectives.

Synthesis of Results

Further analysis by the team organized supporting statements of the concepts into the subcategories of key components, root causes, risk factors, symptoms or manifestations, and outcomes. This enabled a side-by-side comparison to identify similarities, differences, and overlapping conceptual properties (Table 2). Supporting citations were listed for all the major concept outcomes derived in each subcategory, although this list was not exhaustive of all related articles in this scoping review.

Quality Appraisal

All eligible studies were critically appraised by 2 independent reviewers for strength of evidence using the Army Nursing Evidence Hierarchy[22] and for quality of evidence using the Johns Hopkins Nursing Quality of Evidence Appraisal.[23] The topic team reviewers

Table 2. Conceptual Properties

Categories/ subcategories	MD	MI	MD/MI similarities	MD/MI differences	MD/MI overlap	Discussion points
Key components	Complex and multivariant Underlying professional values of the person May be difficult to separate personal and professional values Moral obligation Not ambiguous; perceived clear right and wrong	Underlying personal and professional values of the person Complex/multivariant Self-assigned moral ownership Moral ambiguity; can impact identity	Personal and professional values Complex/multivariant Duty or moral responsibility Perceived responsibility	MD described mainly in healthcare providers MI described mainly in military personnel MD clear right or wrong versus MI ambiguity	Both complex and multivariant Variances in constructs that can exist concurrently	Ambiguity versus nonambiguous Perceived or assigned duty or responsibility to act or moral obligation Self-assigned ownership Internal and external factors contribute to moral obligation Can experience as other's fault (person, team, organization, system)
Root causes	Internal sources: powerlessness, duty, competing obligations, fear of mistakes, lack of knowledge External sources: organizational policies, incompetent team members, or lack of resources	Internal sources: guilt and shame, inappropriate self-blame, torn between 2 bad choices External sources: blame others, conflicting situations, betrayal by someone in authority	Internal sources are influenced by a person's moral code, experiences and other human factors Blaming something such as leader, organization, or team	MI primarily blames others for cause MD primarily blames self, team, organization, or system	Betrayal by individual and/or team, organization, system	Internal causes not universal; dependent on personal experiences, social influences, etc. Is context for betrayal similar?
Risk factors	Lacking resources or overemphasis on efficiency over quality care Conflict with prioritizing care Unsafe working conditions Inadequate staffing Incompetent team Lacking empowering voice owing to hierarchical structures Futile care Offering false hope Bad end-of-life experiences	Betrayal Lacking specific information or knowledge gap Witnessing human suffering Bad death experiences Powerlessness Helplessness	Persons in higher power can influence MD and MI risk factors Lacking something, for example, knowledge (MI) and resources (MD) Feelings of powerlessness and/or helplessness End-of-life experiences	MI results from a lack of information or knowledge, whereas MD lacks more tangible resources such as supplies Betrayal is a term mainly used in describing MI MD is related to organizational factors, whereas MI is related to more personal factors	Betrayal A perceived deficit A real or perceived cause	Overlap of betrayal by person in MI and betrayal by organization or team in MD?

(*continued on next page*)

Table 2. Conceptual Properties (*continued*)

Categories/ subcategories	MD	MI	MD/MI similarities	MD/MI differences	MD/MI overlap	Discussion points
Symptoms or manifestations	Physiologic response (high heart rate, increased respirations, or fatigue) Psychological response (emotional exhaustion, anxiety, depression) Social response (distance from patients, family, team) Awareness of moral conflict Spiritual distress	Guilt, shame, and loss of trust Incomplete awareness of multiple moral contexts Generally nonacute presentation occurring after long-term effects of depression, alcohol abuse, self-harm, etc. Spiritual distress	Over long term, it may result in chronic anxiety, depression, alcohol abuse, poor coping, etc. Both can have psychological manifestations	MD presents as an early indicator, for example, physiologic response to PMDE; MI presents a more progressed onset MI does not have an immediate physiologic response	Both manifest across multiple person domains such as psychological and physiologic or psychological and spiritual	Are PMDE precursors for PMIE? MI's immediate manifestations are less specific, especially as studied in healthcare clinicians MD immediate manifestations well studied in healthcare clinicians, but long-term impact less studied than the long-term impact of MI in military personnel
Outcomes	Short-term impacts such as interpersonal stressors, depersonalization Long-term impacts such as burnout, compassion fatigue, PTSD, and cumulative effect Organizational impacts such as lack of reporting, fear of reprisal, poor retention, poor quality of care, poor ethical climate, poor team climate Depersonalization Carries over to personal life	Burnout PTSD Associated with other mental health concerns such as depression, alcohol use, anxiety, anger, self-harm, and social issues	Potential for long-term sequelae such as burnout and PTSD	MI viewed better as psychopathology MI studied from personal implications, whereas MD studied from organizational impact	Burnout and PTSD	MI understudied in healthcare clinicians for long-term sequelae

MD, moral distress; MI, moral injury; PMDE, potentially morally distressing event; PMIE, potentially morally injurious event; PTSD, post-traumatic stress disorder.

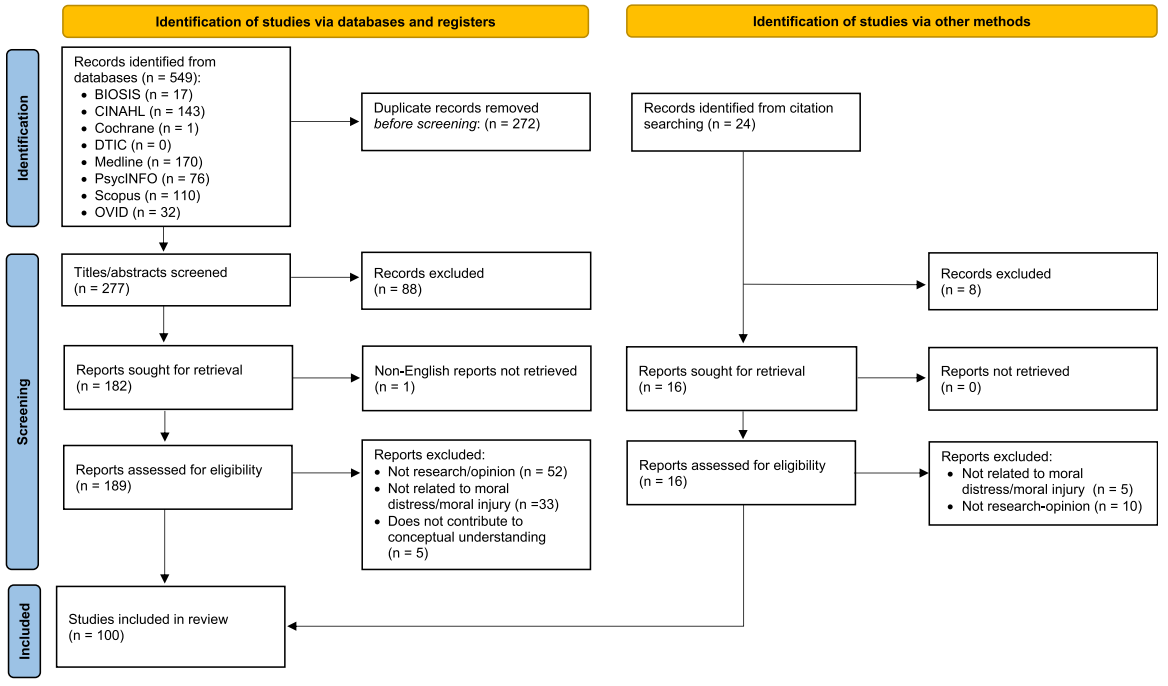

Figure 1. PRISMA flow diagram

submitted results to the project coordinator for assimilation into the overall findings.

RESULTS

A total of 549 records were identified across 9 databases. Twenty-four additional records were identified through reference reviews. After duplications were removed, a total of 281 titles and abstracts were screened. Retrieval and review of 205 full-text articles were distributed to 3 teams of 2 reviewers grouped in concept teams (MD, MI, both MD and MI). After full-text review, 105 were excluded for not meeting inclusion/exclusion criteria, resulting in 100 articles being included in the final scoping review and results (Figure 1).

Appendix 1 (available online) provides a summary of the included studies. Of the 100 studies included in the review, 18 were qualitative, 57 were quantitative, 11 used mixed methodology, 12 were systematic reviews, 1 was a meta-analysis, and 1 was an integrative review. Samples for MD studies represented both military (4) and civilian (96) medical centers and their personnel in the U.S. and other countries. Personnel were primarily nurses and physicians but also included social workers, therapists, dieticians, chaplains, and administrators. Full-text articles reviewed, meeting inclusion criteria, included 88 pertaining to MD only, 8 pertaining to MI only, and 4 addressing both MD and MI.

MD articles consistently reported the overall concept as complex, multivariate, and reliant upon the professional values of the healthcare clinician.[15,24–28] There is clearly a right or wrong perceived response in individuals experiencing MD.[26,28] MI literature characterizes the concept as distress in situations of moral ambiguity that can impact personal identity.[21,29–31] Both concepts are connected to the values of the person experiencing MD or MI. Both professional and personal values are cited as the source of distress in MD, with ambiguity in separating personal values from influencing professional values.[32,33] MI stems from violations or conflicts within and/or between personal and professional values.[21,29–31] Both concepts encompass a moral obligation or duty to care, whether feeling an obligation to care for a patient, team member, organization, or self (MD), or self-assigned ownership of responsibility (MI).[21,29–31]

Sources of MD and MI are both internal and external to the person. Internal causes of MD tend to precede the potentially morally distressing event such as perceived powerlessness, a sense of responsibility, competing obligations, fear of mistakes,[34,35] or lack of knowledge.[7] Internal sources of MI include feelings of intractable guilt/shame, inappropriate self-blame, and being torn between 2 choices that feel wrong, associated with a potentially morally injurious event (PMIE).[21,29–31] External sources of MD are associated with constraints outside the person's control keeping them from acting in a way consistent with their values such as restrictive

organizational policies, incompetent team members, or a lack of available resources.[36,37] External sources of MI can focus on blaming others as the source of the problem as well as external circumstances yielding moral dilemmas.[21,29–31]

Risk factors found primarily in MD literature include unsafe working conditions such as a lack of personal protective equipment,[38,39] inadequate staffing,[39,40] or abuse from colleagues, patients, and families[41,42]; team factors such as incompetence,[39,40] poor communication,[33,40] lack of continuity,[43] undermining professional judgement[42]; and organizational factors such as lack of support,[27,32,37,41,42] lack of action to address problems, and emphasis on efficiency over quality care.[44] Betrayal was a risk factor unique to MI literature and is another classic PMIE.[21,45] Risk factors for MD and MI included some overlapping qualities. MD literature identifies lack of resources or the need to ration care as risk factors for MD.[36–38,46,47] MI literature also revealed insufficient resources as a risk factor but primarily in terms of information or knowledge gaps rather than tangible resources.[29,48,49] Overlapping MD and MI risk factors related to the futility of care, offering false hope, end-of-life or bad death experiences,[25,36,37,40,50–56] and witnessing human suffering[21,57] are also considered classic PMIE. Disempowerment and helplessness were also described as risk factors for both MD[41,42,44,54,58–60] and MI.[29,35,61,62]

Manifestations of MD described in the literature relate to immediate physiologic, psychological, social, or spiritual symptomology. Examples include increased heart rate, increased breathing, and feelings of anxiety or ambivalence progressing to symptoms such as sleep disturbance,[15,63–65] emotional responses,[15,63–65] and self-distancing from colleagues and patients.[59,62,66,67] MI symptoms in healthcare providers outlined in the literature are less specific in manifestation and are associated with other mental health concerns such as depression, alcohol use, anxiety, anger, self−harm, and social problems.[15,63–65] The MI literature reviewed does not reflect immediate physiologic symptomology but rather psychological manifestations such as guilt and shame.[21,29–31] Overlap of MD and MI manifestation was not evident owing to far fewer specific symptom descriptions in the MI literature.

MD literature extensively explored short- and long-term sequelae leading to compassion fatigue,[7,24,25,41,42,61,68–74] burnout,[28,44,47,49,55,65,71,75–86] and post-traumatic stress disorder (PTSD).[45,47,79,87] Interpersonal stressors,[24,27,41,80,88] depersonalization,[37,76,89] and a crescendo or cumulative effect[15,37,41] showed implications for the person and healthcare team. Organizational impact of MD included perceived compromised care,[40,41,59] perceived overwhelming workloads,[32,90] poor retention,[36,49,54,59,76–79,91,92] poor quality of care provided,[43,59,77,85,89] and reduced ethical climate.[26,39,40,58,67,76,78,81,93–96] Outcomes of MI in healthcare clinician literature were limited and primarily reported through its association with other mental health conditions such as depression, alcohol use, anxiety, anger, self−harm, social problems, burnout, and PTSD.[97–99] Burnout[28,44,47,49,55,65,71,75–86] and PTSD[45,47,79,87,97–99] were described as effects for both MD and MI.

DISCUSSION

This scoping review of the literature was conducted to explore the concepts of MD and MI and to identify similarities and differences in these concepts while considering their relationship to the military healthcare clinician. This review clarified key findings in MD and MI concepts to improve understanding and appropriate use of these conceptual terms. In addition, this scoping review identified literature gaps for future exploration.

Key Components

MD and MI are undoubtedly complex, multivariant, and personal experiences. MD involves a clearly right or wrong professional or personal value-based response[26,28] that is constrained by internal or external factors. MI literature describes the concept in the context of situations of moral ambiguity involving more than 1 conflicting moral code.[100,101] Both MD and MI concepts are connected to the values of the person and encompass a moral obligation or sense of duty that is experienced in both civilian and military contexts.

Root Causes

Internal sources of MD and MI are both driven by a person's social encounters, experiences, and personal moral code, which makes determining universal root causes dependent on the person, place, and situation. External sources of MI tend to focus on blaming others as the source of the problem or external moral dilemmas.[10,102,103] External sources of MD are associated with constraints outside the person's control keeping them from acting in a way consistent with their values. Betrayal by someone in authority was a unique characteristic of 1 type of MI.[21,45] MD literature describes precipitating organizational factors such as lack of support,[27,32,37,41,42,104,105] failure to address problems, and emphasis on profit over quality care.[44,104] This raised questions about a potential parallel between the role of authority betrayal in MD and MI. Is there a distinction between how civilian healthcare clinicians blame their organizational authority and the way military members blame their superiors for violations of moral values? Two recent papers potentially support this

theory. The first, a sample of 2,099 healthcare workers, found that 50.7% endorsed other induced PMIEs.[106] In the second study, a latent class analysis of 480 healthcare workers, 26% were in the class where they witnessed PMIEs conducted by others and felt betrayed, and 41% were in the class where they endorsed feeling betrayed by the government and community members.[107]

Risk Factors

MD and MI risk factors have similar characteristics associated with death (futility of care, end-of-life or bad death experiences,[25,36−37,40,50−56,108] and feelings of disempowerment and helplessness[29,35,41,42,44,54,58−62,109]). MD risk factors include lack of resources or the need to ration care.[36-38,46,47,110] MI risk factors include a lack of or insufficient information or knowledge gaps.[29,48,49] MD risk factors in the literature are heavily focused on the organizational work environment.[33,38−43,110]

Symptoms or Manifestations

Manifestations of MD are well described in the literature in terms of immediate physiologic, psychological, social, or spiritual symptomology. MI symptoms in healthcare providers are often described in association with other mental health conditions (depression, alcohol use, anxiety, anger, self−harm)[15,63−65] rather than ascribed to MI itself. MI manifestations outlined in the literature reviewed lacked specificity owing to the absence of extensive studies among healthcare clinicians. This raises the question, does MI truly manifest as more long-term sequelae, or has MI acute symptomology not yet been adequately studied in healthcare providers? It also begs the question, do potentially morally distressing events precede PMIE in healthcare providers? The results of this scoping review highlight the need for further study in these areas.

Outcomes

The literature shows burnout[49,76−79,85] and PTSD[47,85,97,98] as common consequences of MD and MI among healthcare clinicians, although studies are more limited concerning the effects of MI in this population. One recent publication found that "...moral distress explained more variance in COVID-19 related PTSD symptoms than in work and interpersonal functioning."[79] Questions remain regarding the progression of MD or MI to PTSD and whether the PTSD risk is greater in the presence of both MD and MI.

Implications

Key characteristics of MD and MI identified in this scoping review revealed minimal implications specific to the military healthcare clinician. Organization-level impact of MD in civilian healthcare clinicians included perceived compromised care,[40,41,59] perceived overwhelming workloads,[32,90] poor retention,[36,49,52,59,76,77,79,91,92] poor quality of care provided,[43,59,77,85,89] and reduced ethical climate.[76,78,93−95] The military organizational impact of MD in healthcare practitioners is less studied. MI in both civilian and military healthcare clinicians is an emerging concept in the literature as a result of the COVID-19 pandemic. The nature of healthcare organizations and healthcare work was changed by the pandemic, with many of the changes affecting moral experiences. These changes are still developing and will not be fully understood for years to come. Additional construct development and etiologic understanding are needed to further describe the similarities and differences between MD and MI, especially as it applies to the military healthcare clinician.

To this point, MI has been mainly studied in service members and veterans. MI warrants exploration in military healthcare clinicians who are both care providers and service members. However, with the advent of COVID-19, experiential lines have been blurred between civilian clinicians fighting a global pandemic and military clinicians in deployment or other military healthcare settings. New questions arise about the incidence of MI in military and civilian healthcare clinicians. Coexistence of MD and MI in military and civilian healthcare clinicians needs further exploration. If they coexist, are they separate phenomena, or does MD precede MI on a continuum of distress to injury?

Psychometric measures of MI are still evolving, with currently available measures primarily developed for military/veteran populations.[111−116] In addition, many of the available measures do not adequately differentiate between exposure to PMIE and the sequelae of symptoms that follow exposure to those events. If MD and MI can exist concurrently, questions arise about the ability of psychometric instruments to differentiate between MD and MI considering the overlapping concept characteristics identified in this review. The development of an instrument sensitive to both MD and MI validated in the military healthcare clinician would provide a basis for matching the intensity of treatment to the disorder for this population.

In addition to the challenges of psychometric measurement mentioned earlier, neither MD nor MI is formally addressed in the DSM-5-Text Revision, the authoritative guidelines to diagnose mental disorders for healthcare clinicians worldwide. Mainline treatments for PTSD may not address the unique nuances of MD and MI, and recent literature has shown that MI can exist separately from PTSD.[117] Parts of the

literature also note the spiritual components of MI. For military healthcare clinicians, there may be unique opportunities to incorporate chaplains alongside mental health professionals in the care and prevention of MI. Given the system-level components of both constructs, further research is needed in the development of organizational interventions.[4,21] These interventions could focus on preventative measures to address feelings of betrayal and/or external constraints that healthcare practitioners experience as barriers to providing appropriate care.

Strengths and Limitations

This is the only known scoping review to examine both MD and MI concepts simultaneously as they apply to the military healthcare clinician. An additional strength of this review includes the completion of 3 full literature reviews during the 16-month project period for the purpose of capturing emerging MD and MI literature associated with the COVID-19 pandemic. Another strength lies in the composition of the review team, whose members include recognized civilian and military experts in MD and MI. The team also included a singular project coordinator who maintained consistent adherence to the Joanna Briggs Institute review protocol guidelines.

A limitation of this review is the exclusion of non-English language sources, studies conducted outside the healthcare setting, and studies before 2009. Of the studies included, most were not methodologically designed to answer questions of causality, nor were concerns about selection and response bias fully addressed. It is important to restate that information in this review primarily references associations between MD, MI, and various outcomes.

This review was influenced by several limitations inherent in the current MD and MI literature. The results of this review confirm that MI has only begun to be studied in healthcare populations. In the timeframe that it covers, there were very few of these publications to consider, with many of them excluded for not meeting other elements of our inclusion criteria.

CONCLUSIONS

This scoping review evaluated MD and MI concepts individually as well as in combination and extracted key characteristics to identify the commonalities and differences in 2 very similar terms. Results confirmed the complex and multifactorial nature of MD and MI. This scoping review defines unique and overlapping elements of the concepts while revealing gaps in knowledge in our understanding of MD and MI in military healthcare clinicians. The manifestations, risk factors, and effects of MD and MI examined in this review can help inform the conceptually appropriate use of the terms and future research endeavors.

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CREDIT AUTHOR STATEMENT

Melissa A. Wilson: Conceptualization, Funding acquisition, Data curation, Formal analysis, Project administration, Supervision, Validation, Writing - original draft, and Writing - review. Amy Shay: Conceptualization, Formal analysis, Validation, Writing - original draft, Writing - review & editing. J. Irene Harris: Conceptualization, Formal analysis, Writing - original draft, and Writing - review & editing. Nicole Faller: Conceptualization Project administration, and Visualization. Timothy J. Usset: Conceptualization, , Formal analysis, Writing - original draft, and Writing. Angela Simmons: Conceptualization, Funding acquisition, Formal analysis, Project administration, Validation, Writing - original draft, and Writing - review & editing.

SUPPLEMENTARY MATERIALS

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