Moral distress among health care workers in the intensive care unit; a systematic review and meta-analysis

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Abstract

Background: The effect of moral distress among healthcare providers is significant on disease morbidity, especially within the intensive care unit (ICU). In this systematic review and meta-analysis, we aimed to gather all evidence regarding moral distress frequency and severity/intensity among ICU health care providers.

Methods: We conducted a systematic search to gather all relevant studies from six databases, followed by a manual search of references. Fourteen studies consisting of 5905 participants were included in the final moral distress scale analyses.

Results: Overall, there was moderate moral distress severity/intensity among all participants (Mean = 27.79; 95% confidence interval (CI) = 7.40–64.18). On further stratification of the results according to countries, Canada (Mean = 91.99; 95% CI = 80.10–105.65) and USA (Mean = 52.54; 95% CI = 44.78–61.64) showed the highest distress scores, followed by Iran (Mean = 21.20; 95% CI = 7.21–62.30) and Italy (Mean = 3.42; 95% CI = 3.15–3.72). Studies conducted in high income-earning countries reported more severity/intensity (Mean = 22.65; 95% CI = 6.58–78.02) compared to those in the upper-middle income-earning ones (Mean = 18.89; 95% CI = 2.80–127.34). There was significant heterogeneity among the included studies, which could not be explained by the difference in scales, country of the participants, or the female proportion. Moreover, there was a moderate frequency of moral distress (Mean = 46.83; 95% CI = 8.34–262.87), which was found to be much higher (Mean = 87.94; 95% CI = 83.55–92.57), in performing analysis.

Conclusion: Moral distress is a major problem in the ICU setting, in terms of both severity/intensity and frequency. Future large-scale studies are required, through a unified framework, to develop appropriate interventions to address ICU-related moral distress.

Keywords

Moral distress; Intensive care unit; Health care worker; Meta-analysis

1. Introduction

With advances in diagnostic and therapeutic approaches, ethical problems constitute one of the major challenges in clinical society, especially those related to moral distress. The latter was defined as the critical decision made by the health care providers against their practices despite being informed due to several constraints [1]. Evidence shows that the definition of moral distress was previously confined to nurses only, however, recent literature suggests that it includes other healthcare personnel and events where moral distress is suspected or confirmed [2]. Fourie et al. [3] even suggested that moral distress develops as a psychological event attributed to the exposure to moral conflicts. Factors such as inconsistent care plans, a conflict between intensive care unit (ICU) staff among themselves or with their families, lack of resources, and too much care from the family, are known etiologies that trigger moral distress among health care providers [4]. Moreover, working under pressure in developing countries can contribute to moral distress among the clinical team due to poor salaries or staff shortage [5].

Ethical approaches and self-restraint should be considered when differentiating between normal and moral distress events [6]. Moral distress affects health care providers and may lead to serious consequences regarding disease morbidity. Anger,
stress, fatigue, sense of guilt, feeling overwhelmed, headaches, and powerlessness were reported as consequences of exposure to moral distress actions [7]. Moreover, leaving the medical profession is the most notable consequence related to moral distress [8]. The frequency of moral distress was different according to the socioeconomic status of the country, health facilities, the type of medical profession (nurse, physician, and other health care provider), and the sex of the health care providers [9–11].

With the high mortality rates in the ICU department compared to other departments, the ICU team faces the most significant risk factor that drives moral distress, which is the end-of-life decision. This may be due to shortage of therapeutic facilities, prevention of prolonging the patient’s suffering, or the choice to save patients who have a higher probability of survival compared to other patients with low survival probability due to bed occupancy shortage [12, 13]. An Iranian cross-sectional study indicated that ICU nurses are exposed to high levels of moral distress frequency and intensity [9]. Moreover, a nationwide cross-section study among European countries indicated a lower frequency and higher intensity of moral distress compared to other developing countries [9, 11, 14].

The likelihood to develop moral distress may be promoted by several factors, including some aspects of patient care, perception of inappropriate care, and different constraints (internal and external) [15]. The concept of “inappropriate care” may include—but not limited to—providing futile or “ineffectual” treatment, inefficient pain relief, and unreflexive expectations to patients or their families; expediting the dying process; ignoring patients’ desires; working with incompetent caregivers who may not be up to their job responsibilities [15]. Inability to preserve mental and emotional health during difficult experiences may give rise to internal turmoil, which may include lack of self-confidence, unjustified fear, lack of coping with perceived suffering, and contradictions with own religion or cultural beliefs [15]. External constraints may arise from established policies and specific aspects of the ICU work environment [16]. Frequent external constraints include a lack of companionship and cooperation between colleagues, the hierarchical structure present in different healthcare institutions, and deficient communication [17]. To date, there is no comprehensive systematic review that summarizes the literature regarding moral distress among ICU staff. Consequently, in this systematic review and meta-analysis, we aimed to gather all evidence regarding moral distress frequency and severity/intensity among ICU health care providers.

2. Methods

2.1 Search strategy and study selection

This systematic review and meta-analysis were conducted according to the Preferred Reporting Items for Systematic Review and Meta-analyses statement (PRISMA) recommendations [18]. “(moral distress OR moral responsibility OR moral dilemma OR conscience) AND (intensive care unit OR ICU)” were used to gather all relevant studies from six databases: The System for Information on Grey Literature in Europe (SIGLE), Virtual health library (VHL), Web of Science, PubMed, Sco-
remaining five studies included nurses and other health care professionals. Seven studies used Corley’s MDS while four studies used the modified MDS; however, the used scale was not reported in four studies (Table 1) (Ref. [9–11, 25–31, 33–37]).

Regarding the quality of the included studies, most of them scored “good quality” in most assessment aspects and none of them were classified as being of “unsatisfactory quality”. Two of the included studies were “very good quality”, seven studies were “good quality”, and six were “satisfactory quality”. The problems detected were in the “selection” parameter of the assessment scale, specifically, with respect to the “representativeness of the sample”, and “ascertainment of the exposure (risk factor)” (Table 2) (Ref. [9–11, 24–31, 33–37]).

3.3 Moral distress

Following the exclusion of one study [28] due to the heterogeneity in the data presentation, fourteen studies consisting of 5905 participants were included in the final MDS analyses. Overall, there was a moderate moral distress severity/intensity among all participants (Mean = 27.79; 95% CI = 7.40–64.18). The distress severity/intensity measured by both MDS-revised (Mean = 15.87; 95% CI = 3.48–72.39) and Corley’s MDS (Mean = 33.31; 95% CI = 21.85–50.79) was comparable with no significant difference between the two scales, on testing for subgroup differences (p-value = 0.356) (Fig. 2).

On further stratification of the results according to countries, Canada (Mean = 91.99; 95% CI = 80.10–105.65) and USA (Mean = 52.54; 95% CI = 44.78–61.64) showed the highest distress scores, followed by Iran (Mean = 21.20; 95% CI = 12.91–31.70), and Italy (Mean = 3.42; 95% CI = 3.15–3.72). The differences among the single countries were statistically significant (p-value < 0.001). Studies conducted in high income-earning countries reported more severity/intensity (Mean = 22.65; 95% CI = 6.58–78.02) compared to those in the upper-middle income-earning ones (Mean = 18.89; 95% CI = 2.80–127.34); however, the difference was not statistic-
<table>
<thead>
<tr>
<th>Reference ID</th>
<th>Country</th>
<th>Study design</th>
<th>Participants</th>
<th>Sample size</th>
<th>Female (prevalence)</th>
<th>Moral distress measure</th>
<th>Age (Mean (SD))</th>
</tr>
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<tr>
<td>Dodek/2019</td>
<td>Canada</td>
<td>Cross-sectional</td>
<td>428 nurses, 30 physician and 211 other health professionals</td>
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<td>522</td>
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<td>1844 nurses, 459 Registered respiratory therapist, 306 physician, 211 other, 32 not specified</td>
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<td>2484</td>
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<td>214</td>
<td>The Moral Distress Scale—Revised</td>
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<td>45 physician, 77 nurses</td>
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<td>41.7 (2.2)</td>
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<td>Larson/2017</td>
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<td>20 physicians, 159 nurses, 25 RTs, and 2 physiotherapists</td>
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<td>20–50*</td>
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<td>Cross-sectional</td>
<td>87 nurses and 30 physician</td>
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<td>105</td>
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<td>28</td>
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NR, not reported; *, range.
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<th>Outcome</th>
<th>Total score</th>
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NOS, Newcastle-Ottawa Scale; NRSs, Numeric Rating Scales.
FIGURE 2. Moral distress severity/intensity (scales used). MDS, the moral distress scale; MDS-R, the moral distress scale-revised.

For moral distress frequency, five studies consisting of 4087 participants were included in the analysis. Overall, there was a moderate frequency of moral distress (Mean = 46.83; 95% CI = 8.34–262.87); however, the confidence interval was very wide. Therefore, we performed a leave-one-out sensitivity analysis by removing the most heterogeneous study just so the results were much higher (Mean = 87.94; 95% CI = 83.55–92.57). The heterogeneity was significant both before (I^2 = 100%; p-value < 0.001) and after (I^2 = 94%; p-value < 0.001) the sensitivity analysis was performed (Fig. 4).

In the same context, there were only three factors that were tested for a possible correlation to MDS in two or more studies. No significant correlations were found among all tested correlations; including work experience (r = -0.04; 95% CI = -0.17–0.09; p-value = 0.572), work satisfaction (r = 0.08; 95% CI = -0.30–0.45; p-value = 0.678), or compassion toward patient (r = -0.04; 95% CI = -0.77–0.74; p-value = 0.941) (Fig. 5).

4. Discussion

The current study used 14 studies to synthesize a summary of all available evidence regarding measures of moral distress in the ICU setting. Our results showed a considerable moral distress severity/intensity and frequency among health care workers. No significant predictors of the distress level were identified due to the heterogeneity of the tested factors. There were statistically significant distress levels among different countries; higher values seemed to be prevalent in the more developed countries.

Moral distress is often a result of problems within organizations such as staffing shortages, ineffective team communication, procedures performed with insufficient guidance, or policies [38]. Additionally, Dodek et al. [30] suggested that both moral distress and general workplace distress have a mutual cause-and-effect relationship, and both can cause burnout among ICU workers [30, 39]. Hence, levels of moral distress are expected to be higher among organizations with poor ethical climates [38]. Moreover, causes of moral distress among ICU workers include some concerns about the life-support provided, the care provided by other health care professionals, poor communication, end-of-life decision-making, and inconsistent care plans [40].

Over the past few years, moral distress has attracted attention in healthcare practice. A review by Lamiani et al. [41] has found that numerous studies, both quantitative and qualitative, have been published, and these publications mainly focused on nurses working in ICUs. It may be due to the
deep-rooted proximity of the nurse-patient relationship and the relevant ethical aspects embedded in their involvement in end-of-life care, which made moral distress a relevant experience for healthcare professionals [34, 41–45]. Another study by Nuttgens and Chang showed that moral distress may result from substandard supervision, supervisee vulnerability, supervisee non-disclosure, and organizational pressures [46].

The mean distress scores for ICU health care workers ranged...
from 57 to 92 in most of the studies, which reached up to 102 in some cases [10, 34, 42, 47–49]. These reported distress levels are higher than those reported in the previous literature, which may be due to the high heterogeneity. Our results further indicated that the factors of being female and work experience were not significant predictors of moral distress levels, which is consistent with a previous study consisting of 171 British participants [49]. However, other studies reported higher moral distress among female workers, which may be a reflection of women being more able to report symptoms [50–52]. Additionally, some other studies found an inverse relationship between work experience and moral distress levels [53].

Depression and moral distress were identified as results and
precursors of each other, and moral distress was described as a significant predictor of burnout among health care workers [54–56]. However, the means to reduce moral distress among health care workers are still limited in the literature [56, 57]. Improving the communication between the health care workers, patients, and patient’s loved ones is a common feature in successful interventions [53]. In one study of a pediatric ICU setting, communication was associated with a successful reduction in MDS during the patients’ stay [58]. Additionally, the dissociation between the ideas about the medical practice and the reality was suggested as a cause of moral distress in this field [59]. Furthermore, adopting effective mentoring and suitable consultation services proved to be significant assets for health care workers at different career levels [60, 61].

5. Limitations of study

To our knowledge, this is the first meta-analysis to summarize moral distress among health care workers in the context of the ICU setting; however, it has some limitations that should be noted. The included studies were heterogeneous in the tested distress predictors, measured values, composition of their participants, and reporting methods. We could not account for this heterogeneity with subgroup analysis or meta-regression, whenever possible, which is an indicator for the presence of other possible sources that were not tested in the current literature.

6. Conclusions

Moral distress is a major problem in the ICU setting, in terms of both severity/intensity and frequency. The heterogeneity among the current literature is very prominent making it hard to provide solid evidence in this context. Moreover, the most reported factors/predictors could not account for this heterogeneity, which means there is an obvious knowledge gap, and other factors need to be tested. Therefore, future research is required through a unified framework to develop appropriate interventions to address ICU-related moral distress.

AUTHOR CONTRIBUTIONS

RMA: Conceptualization, methodology, writing and editing, adjudication, and supervision. AAS, MIA: Data curation, methodology, writing —original draft preparation. RM, YKA, MME, FA: Investigation, validation, writing —review and editing. MHT, KA: Formal analysis, writing —review and editing.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at https://oss.signavitae.com/mre-signavitae/article/1402535652511316992/attachment/SV2021032101_Supplementary_Figure_1.tif.

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