Journal of Critical Care 50 (2019) 122–125

Contents lists available at ScienceDirect

Journal of Critical Care

journal homepage: www.journals.elsevier.com/journal-of-critical-care

ICU Capacity and Organization

Moral distress is associated with general workplace distress in intensive care unit personnel

Peter M. Dodek [a,b,*], Monica Norena [b], Najib Ayas [a,b], Hubert Wong [b,c]

[a] Division of Critical Care Medicine, St. Paul's Hospital, University of British Columbia, 1081 Burrard Street, Vancouver, BC V6Z 1Y6, Canada
[b] Center for Health Evaluation and Outcome Sciences, St. Paul's Hospital, University of British Columbia, 1081 Burrard Street, Vancouver, BC V6Z 1Y6, Canada
[c] School of Population and Public Health, University of British Columbia, 2206 East Mall, Vancouver, BC V6T 1Z3, Canada

ARTICLE INFO

Keywords:
Moral distress
Workplace distress
Intensive care unit

ABSTRACT

Purpose: To assess the association between moral distress and general workplace distress in intensive care unit (ICU) personnel.
Materials and methods: We administered the Moral Distress Scale Revised and the Job Content Questionnaire to all clinicians (870 nurses, 68 physicians, 452 other health professionals) in 13 ICUs (3 tertiary, 3 large community, 7 small community) in British Columbia, Canada. We used mixed effects regression, treating ICUs as clusters, to examine the association between the Moral Distress Score and each Job Content Questionnaire scale (decision latitude, psychological stressors, social support, psychological strain) after adjusting for age, sex, and years of experience of respondents; separate analyses were done for each profession.
Results: Overall response rate was 45%. Nurses and other health professionals had higher moral distress scores than physicians, but there were no differences in general workplace distress scores among professional groups. After adjustment for demographic characteristics, higher moral distress in nurses was associated with lower decision latitude and social support, and with higher psychological stressors and psychological strain. For physicians and other professionals, these relationships were similar.
Conclusions: Moral distress is associated with general workplace distress in ICU personnel. Interventions that ameliorate either type of distress may also ameliorate the other.

1. Introduction

Moral distress is the stress experienced when a practitioner feels certain of an ethical course of action but is constrained from taking that action [1]. This distress can be measured using a validated survey tool [2], is common in intensive care unit (ICU) personnel, and is associated with burnout and attrition [3]. In a recent publication, we reported the association between the moral distress score and demographic characteristics in ICU personnel [4]. General workplace distress is a separate construct related to control, social support, and psychological stressors in the workplace, and can be measured using the Job Content Questionnaire [5]. Moral distress may be associated with general workplace distress; specifically, moral distress could cause general workplace distress, or vice versa, or they could both be due to a common cause. If so, then addressing the causes of one could ameliorate the consequences of both. The purpose of this study was to assess the association between moral distress and general workplace distress in ICU personnel.

2. Methods

We administered the modified Moral Distress Scale [2] and the Job Content Questionnaire (with permission, [5]) to all health professionals in 13 ICUs in British Columbia, Canada (1 ICU per hospital)—3 tertiary (15–27 ICU beds, all available for mechanical ventilation, all specialty and sub-specialty services), 3 large community (7–15 ICU beds, all available for mechanical ventilation, most specialty services), and 7 small community (4–9 ICU beds, up to 5 mechanically ventilated) hospitals. There were a total of 1390 recipients—870 nurses, 452 other health professionals, and 68 physicians. Surveys originated from the principal investigator's center but were distributed locally at each site; no reminders were sent out. For each of the 21 items on the Moral Distress Scale that describe a situation which might cause distress, we multiplied the score for frequency of experiencing the situation described (0–4) by the score for level of disturbance (0–4). The sum of these products is the Moral Distress Score (possible range: 0—336).

Responses to 49 items on the Job Content Questionnaire were used to derive scores for 4 domains according to the calculations provided

* Corresponding author at: Division of Critical Care Medicine, St. Paul's Hospital, University of British Columbia, 1081 Burrard Street, Vancouver, BC V6Z 1Y6, Canada.
E-mail addresses: peter.dodek@ubc.ca (P.M. Dodek), mnorena@hivnet.ubc.ca (M. Norena), nayas@providencehealth.bc.ca (N. Ayas), Hubert.wong@ubc.ca (H. Wong).

https://doi.org/10.1016/j.jcrc.2018.11.030
0883-9441/

Table 1
Demographic Characteristics and Moral Distress Scores for All Respondents.

	Nurses	Other Health Professionals	Physicians
Number of respondents	428	211	30
Male, %	13	31	87
Mean (SD) Age, years	41 (10)	37 (11)	47 (8)
Median (Q1, Q3) Clinical Experience, years	5 (2, 11)	3 (2, 7)	10 (5, 16)
Worked less than a year in current unit, %	11	12	3
Median (Q1, Q3) Moral Distress Score	83 (55, 119)	76 (48, 115)	57 (45,70)

by the developer of the questionnaire [5]: decision latitude (composed of skill discretion and decision authority; possible range of raw scores: 26–94), total psychological stressors (composed of psychological job demands and job insecurity; possible range of Z scores: −2.43–2.83), social support (composed of supervisor support and co-worker support; possible range of raw scores: 10–36), composite psychological strain (composed of job dissatisfaction, depression, physical/psychosomatic strain, and sleeping problems; possible range of Z scores: −1.85–1.13).

As a preliminary analysis that accounted for the clustering by ICU, we plotted the simple correlation coefficients between moral distress scores and scores for each domain of the Job Content Questionnaire within each hospital and used the Wilcoxon signed-rank test to determine whether the median of these coefficients was different from zero, for each domain of the Job Content Questionnaire. In multivariable analysis, we used linear mixed effects regression to examine the association between Moral Distress Score (outcome) and each of the Job Content Questionnaire domain scores (predictors) after adjusting for age, sex, and years of experience of respondents; separate analyses were done for each profession and a random intercept was included for each ICU. Jaeger et al.'s semi-partial R^2 statistic (implemented in the R package 'r2glmm') was used to summarize the proportion of variability explained by each predictor [6].

This study was approved by the Providence Health Care/UBC Research Ethics Board.

3. Results

Response rates to the surveys were: nurses—428 (49%), other health professionals—211 (47%), and physicians—30 (44%). Nurses and other health professionals reported higher moral distress than physicians (Table 1). There were no obvious differences in general workplace distress scores among professional groups (Table 2, Fig. 1). After adjustment for demographic characteristics of the respondents, moral distress was generally associated with domains of general workplace distress in the direction that would be expected (e.g. higher moral distress in nurses was associated with lower decision latitude and social support, and with higher psychological stressors and psychological strain; Table 3, Fig. 2A and B). The exception was that higher decision latitude in physicians was associated with higher moral distress, though this result did not reach statistical significance. The proportion of variability (semi-partial R^2) in moral distress scale scores explained by each job content questionnaire domain was modest, typically in the range from 0.03 to 0.16, with the exception of a value of 0.29 for Composite Psychological Strain in physicians.

4. Discussion

We found that moral distress is associated with each of the four domains of general workplace distress for ICU nurses and with three of these domains for physicians and other non-physician health professionals. This association suggests that moral distress causes general workplace distress, general workplace distress causes moral distress, or that there is a common cause of both moral distress and general workplace distress. Both types of distress are associated with burnout in ICU personnel [3,7,8]. For example, the perception of high demands and low control in ICU physicians (based on data using the same general workplace distress survey as was used in the current study), is associated with burnout [7]. Considering the risk of attrition due to burnout and the costs of training ICU professionals, it is important to understand the modifiable causes of these types of distress.

Causes of moral distress in ICU personnel include concerns about care provided by other health care workers, amount of life-support provided (especially too much life-support at the end of life), poor communication, inconsistent care plans, and decision-making at the end of life [9]. Similarly, factors associated with highest levels of general workplace distress in ICU nurses are dealing with death and dying, conflict with physicians and co-workers, workload, and uncertainty concerning treatment [10].

Other individual and workplace factors are associated with general workplace distress, as measured using a variety of instruments. For example, higher scores on the personality traits of openness and extraversion are associated with less stress related to difficult patients and family members. A higher score on conscientiousness is associated with less stress related to time pressure, management, or lack of confidence or competence, and a higher score on active coping [11]. Female sex, fulltime work, and skipping breaks are associated with higher stress in ICU nurses and nurses' aides [12]. In contrast, rotating shift assignment, greater support from supervisors, and not having tasks outside ICU are associated with lower stress [12]. In another study of ICU nurses,

Table 2
Job Content Questionnaire Scores for all Respondents.

	Nurses		Other Health Professionals		Physicians	
	Mean (SD)	Median (Q1, Q3)	Mean (SD)	Median (Q1, Q3)	Mean (SD)	Median (Q1, Q3)
Skill Discretion	36.6 (4.0)	36 (34,40)	36.5 (4.7)	38 (34,40)	39.4 (3.3)	40 (36,42)
Decision Authority	34.5 (5.4)	36 (32,36)	36.0 (6.0)	36 (32,40)	41.6 (4.5)	40 (40,44)
Decision Latitude	71.1 (8.4)	72 (66,76)	72.5 (9.6)	74 (66,80)	81.0 (6.5)	80 (76,88)
Psychological Job Demands	35.0 (4.8)	34 (32,38)	34.5 (5.6)	34 (30,38)	37.5 (5.8)	38 (32,43)
Job Insecurity	4.5 (1.4)	5 (3,5)	4.4 (1.3)	4 (3,5)	4.3 (1.3)	4 (3,5)
Total Psychological Stressors (z-score)	0.01 (0.95)	0 (−1,1)	−0.09 (1.07)	0 (−1,0)	0.45 (1.11)	0 (−1,1)
Coworker Support	12.3 (1.5)	12 (12,13)	12.3 (1.5)	12 (12,13)	12.3 (1.7)	12 (12,13)
Supervisor Support	11.8 (2.9)	12 (10,13)	11.9 (2.8)	12 (11,13)	15.1 (4.1)	14 (12,20)
Social Support	24.1 (3.7)	24 (22,26)	24.2 (3.6)	24 (23,26)	27.6 (4.8)	27 (24,33)
Job Dissatisfaction	0.4 (0.1)	0 (0,0)	0.4 (0.1)	0 (0,0)	0.3 (0.1)	0 (0,0)
Depression (Life Dissatisfaction)	0.2 (0.2)	0 (0,0)	0.2 (0.2)	0 (0,0)	0.2 (0.2)	0 (0,0)
Physical/Psychosomatic Strain	0.2 (0.2)	0 (0,0)	0.2 (0.2)	0 (0,0)	0.3 (0.2)	0 (0,0)
Sleeping Problems	0.4 (0.3)	0 (0,0)	0.4 (0.3)	0 (0,1)	0.2 (0.3)	0 (0,0)
Composite Psychological Strain (z-score)	0.00 (1.03)	0 (−1,1)	0.05 (0.94)	0 (−1,1)	−0.30 (0.90)	0 (−1,0)

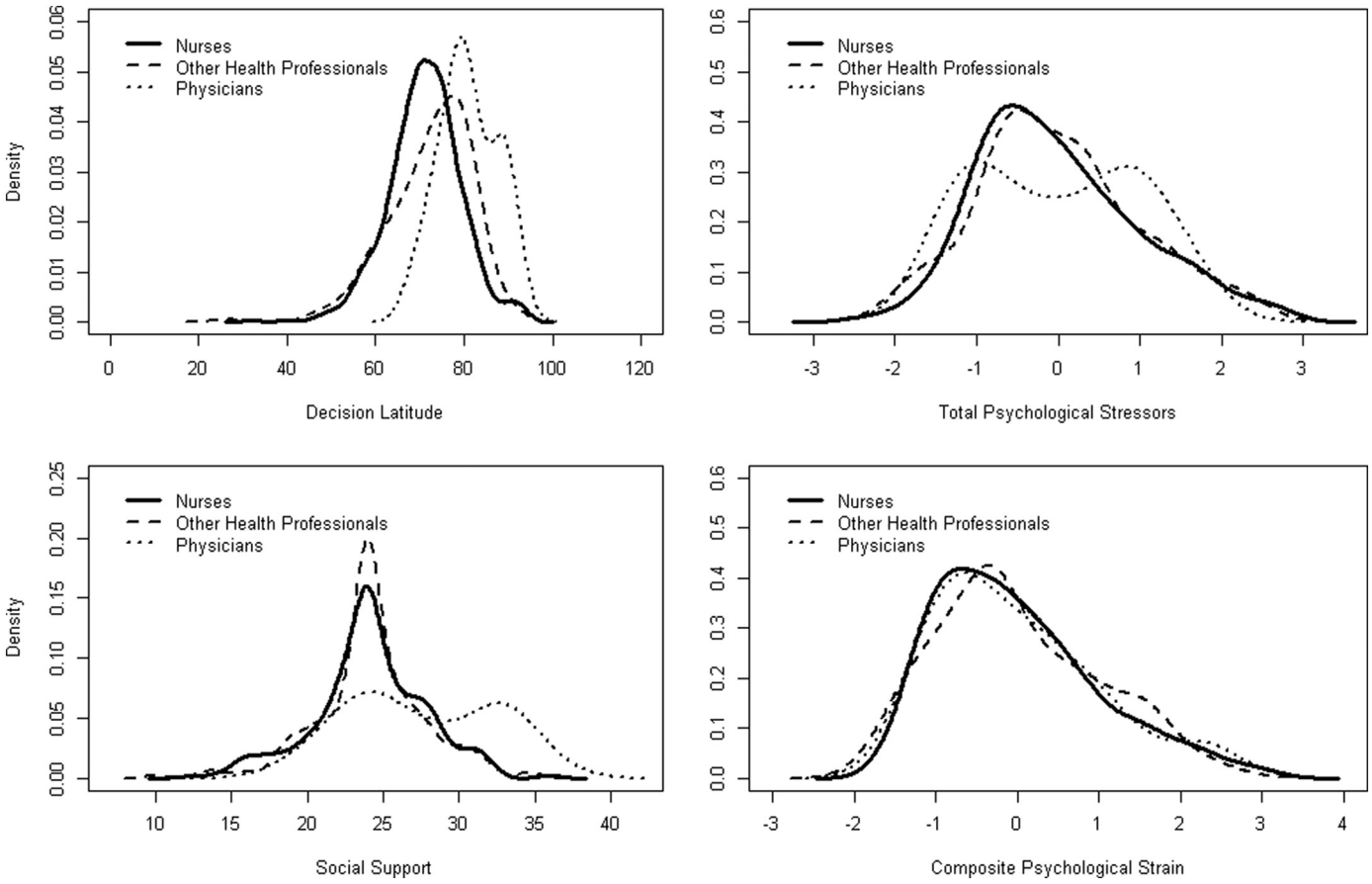

Fig. 1. Distributions of Job Content Questionnaire domain scores by profession of respondent.

Table 3
Association between Moral Distress Score (MDS) and General Workplace Distress as measured by Job Content Questionnaire (JCQ) Domain Scores.*

	Decision Latitude	Total Psychological Stressors	Social Support	Composite Psychological Strain
Nurses	−7.9 (−12.7, −3.1) [0.03 (0.00, 0.07)]	15.3 (10.5, 20.0) [0.10 (0.05, 0.16)]	−14.2 (−18.9, −9.5) [0.09 (0.04, 0.15)]	14.0 (9.4, 18.6) [0.08 (0.04, 0.14)]
Other health professionals	−3.5 (−9.9, 2.9) [0.01 (0.00, 0.04)]	14.1 (7.7, 20.7) [0.09 (0.03, 0.18)]	−12.8 (−18.9, −6.7) [0.04 (0.02, 0.16)]	13.3 (7.2, 19.4) [0.08 (0.03, 0.17)]
Physicians	8.8 (−1.4, 19.0) [0.11 (0.00, 0.40)]	9.4 (0.6, 18.2) [0.16 (0.00, 0.45)]	−10.2 (−20.1, −0.3) [0.15 (0.00, 0.46)]	12.7 (4.9, 20.3) [0.29 (0.05, 0.57)]

Mean change (95% CI) in MDS per one standard deviation change in each JCQ Domain Score. The number in square brackets [] is the semi-partial R^2 (95% CI), a measure of the proportion of variability in the MDS explained by the JCQ Domain Score.

* Models adjusted for age, sex, and years of experience of respondent.

sources of stress included not only nursing activities such as end-of-life care and meeting family members' needs, but also administration of personnel and coordination of activities [13]. Interestingly, general workplace distress in ICUs can be reduced by creating a 'quiet time' (decreased intensity of sound and light) in mid-afternoon [14].

One of the linkages between moral distress and general workplace distress may be epistemic injustice, especially related to end-of-life care [15]. Epistemic injustice refers to a bias against an individual or group related to a presumed hierarchy of knowledge. This injustice may be due to a bias based on credibility or on social identity. Nurses or other non-physician health professionals may be the inappropriate victims of either type of bias. It is not difficult to imagine how this kind of injustice could lead to silencing of nurses or other health professionals during critical discussions about patient care, and subsequent moral and general workplace distress.

Strengths of this study include the fact that we included responses from staff in 13 ICUs in both tertiary-care and community settings. This increases the generalizability of our findings. In addition, we had a fair response rate to the surveys. In our analysis, we adjusted for possible confounders and used a clustered analysis and a separate correlation analysis to adjust for non-independence of observations within hospitals. Limitations include the fact that this was a cross–sectional study; therefore it is difficult to infer the direction of association or causality.

In conclusion, we found that moral distress is associated with general workplace distress in ICU personnel. Therefore, general workplace distress could be a mediator of moral distress, or vice versa, or they could be due to a common cause. In the interest of reducing the consequences of these kinds of distress, causes of each kind that can be prevented or ameliorated ought to be addressed.

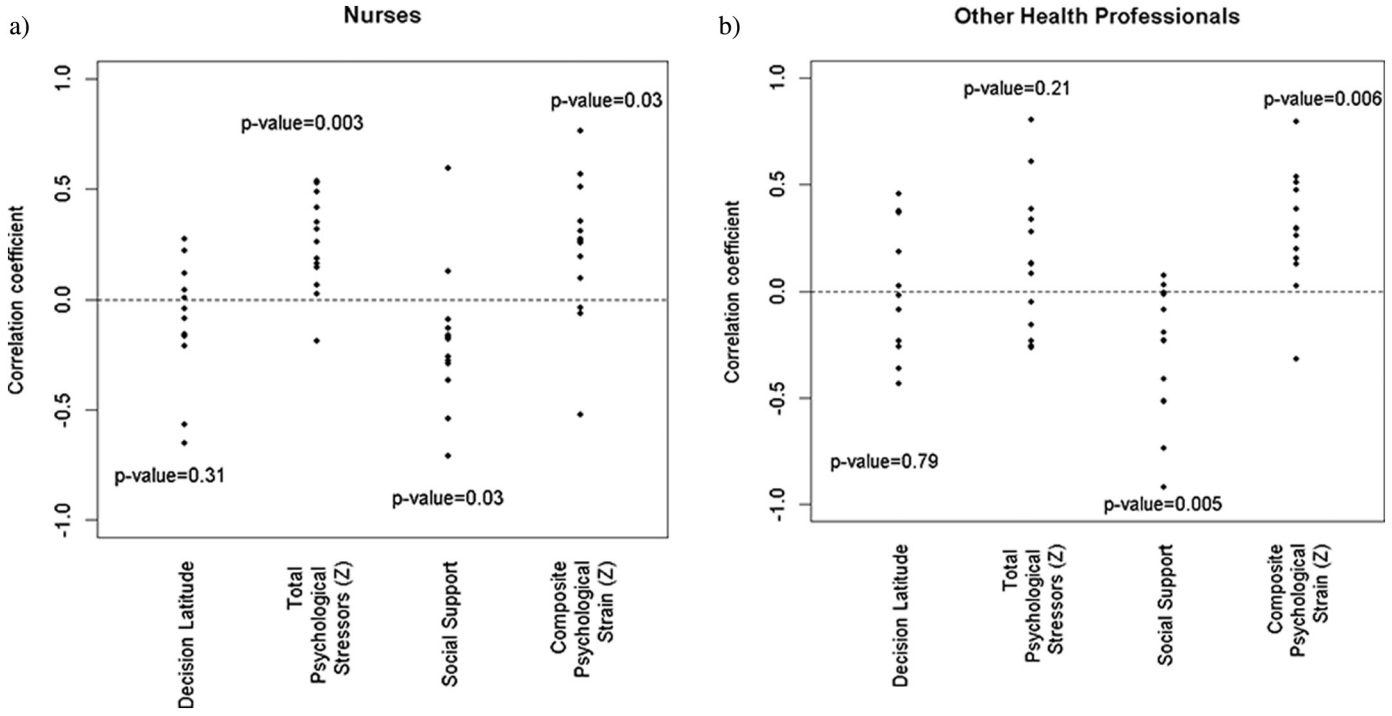

Fig. 2. Correlation of Moral Distress Scale scores with Job Content Questionnaire domain scores. Each dot represents the correlation within one hospital. (p-values were obtained using the Wilcoxon signed rank test; physician data not shown due to small sample sizes at each hospital).

Acknowledgements

The authors wish to thank Sarah Carriere for her help in organizing distribution and collection of surveys.

Funding

Canadian Institutes of Health Research (No. 216779), Providence Health Care Research Institute, Center for Health Evaluation and Outcome Sciences, St. Paul's Hospital Foundation, B.C. Patient Safety and Quality Council, B.C. Nurses' Union, and B.C. Chair in Patient Safety. None of the funding agencies had any role in study design; in the collection, analysis and interpretation of data; in the writing of the report; or in the decision to submit the article for publication.

References

[1] Hamric AB, Blackhall LJ. Nurse-physician perspectives on the care of dying patients in intensive care units: collaboration, moral distress, and ethical climate. Crit Care Med 2007;35:422–9.
[2] Hamric AB, Borchers CT, Epstein EG. Development and testing of an instrument to measure moral distress in healthcare professionals. AJOB Prim Res 2012;3:1–9.
[3] Meltzer LS, Huckabay LM. Critical care nurses' perceptions of futile care and its effect on burnout. Am J Crit Care 2004;13:202–8.
[4] Dodek PM, Wong H, Norena M, Ayas N, Reynolds SC, Keenan SP, et al. Moral distress in ICU professionals is associated with profession, age, and years of experience. J Crit Care 2016;31:178–82.
[5] Karasek R, Brisson Q, Kawakami N, Houtman I, Bongers P, Amicket B. The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. J Occup Health Psychol 1998; 3:322–55.
[6] Jaeger BC, Edwards LJ, Das K, Sen PK. An R^2 statistic for fixed effects in the generalized linear mixed model. J Appl Stat 2017;44:1086–105.
[7] Tironi MOS, CLN Sobrinho, BarroDdeS Reis EJFB, ESM Filho, Almeida A, Bitencourt A, et al. Professional burnout syndrome among intensive care physicians in Salvador, Brazil. Rev Assoc Med Bras 2010;56:656–62.
[8] Lin T-C, Lin H-S, Cheng S-F, Wu L-M, Ou-Yang M-C. Work stress, occupational burnout and depression levels: a clinical study of paediatric intensive care unit nurses in Taiwan. J Clin Nurs 2016;25:1120–30.
[9] Henrich NJ, Dodek PM, Alden L, Keenan SP, Reynolds S, Rodney P. Causes of moral distress in the ICU: a Qualitative Study. J Crit Care 2016;35:57–62.
[10] Salem AH. Critical care nurses' perceptions of ethical distresses and workplace stressors in the intensive care units. Int J Nurs Educ 2015;7:93–9.
[11] Burgess L, Irvine F, Wallymahmed A. Personality, stress and coping in intensive care nurses: a descriptive exploratory study. Nurs Crit Care 2010;15: 129–40.
[12] Jones G, Hocine M, Salomon J, Dab W, Temime L. Demographic and occupational predictors of stress and fatigue in French intensive-care registered nurses and nurses' aides: a cross-sectional study. Int J Nurs Stud 2015;52: 250–9.
[13] Monte PF, Teixeira Lima FE, de Oliveira Neves FM, Borges Studart RM, Dantas RT. Stress among professional nurses working in intensive care units. Acta Paul Enfermagem 2013;26:421–7.
[14] Riemer HC, Mates J, Ryan L, Schleder BJ. Decreased stress levels in nurses: a Benefit of Quiet Time. Am J Crit Care 2015;24:396–402.
[15] Reed PG, Rishel CJ. Epistemic injustice and nurse moral distress: Perspective for Policy Development. Nurs Sci Q 2015;28:241–4.