International Journal of Occupational Safety and Health

ISSN: 2091-0878 (Online) ISSN: 2738-9707 (Print)

Original Article

Multicenter investigation of moral distress among physicians and its impact on the intention to leave working position

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Date of submission: 20.12.2022
Date of acceptance: 18.12.2023
Date of publication: 01.04.2024

Conflicts of interest: None
Supporting agencies: None
DOI:https://doi.org/10.3126/ijosh.v14i2.47182

ABSTRACT

Introduction: Moral Distress (MD) is relatively poorly studied for physicians. The purpose of this study is the investigation of Moral Distress among physicians in Greece and the validation Moral Distress Scale-Revised (MDS-R) as a reliable method for the measurement of MD in the Greek language.

Methods: This is a multicenter study in which 200 physicians of all specialties and degrees participated. A self-reporting questionnaire was used. The MDS-R questionnaire is constituted of 21 items that describe conditions met in clinical practice, aiming to investigate the frequency and intensity of such cases. This study was conducted from March 2020 to May 2020 in seven hospitals in Athens and Thessaloniki. The questionnaire was translated and validated in the Greek language.

Results: All 21 items of the MDS-R questionnaire were found suitable for inclusion in the Greek version of MDS-R, as the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.85, above the commonly recommended value of 0.60. A model of four main factors emerged after the analysis of the results with a total variance of 46.8% and all these factors were correlated with each other. MD was detected to a significant degree in more than half participants. The incidence and intensity of MD were higher in physicians who worked in general hospitals compared to those working in cancer hospitals.

Conclusions: The Greek version of MDS-R is a valid and reliable instrument for the investigation of MD among Greek physicians. MD is also associated with the intention to leave a working position among Greek physicians.

Keywords: burnout, Greek version MDS-R Moral Distress, Moral Distress Scale-Revised (MDS-R), syndrome, validation

Introduction

In 1984, Jameton was the first author to describe the term Moral Distress (MD) in nurses by the following definition: "Moral distress is the feeling nurses experience when institutional constraints prevent the ethically appropriate course of action from being carried out".[1] It should be mentioned that such thoughts and feelings can be triggered by simple matters, such as pointless laboratory tests, to very serious conditions, such as life and death decisions. According to Corley et al., moral distress is the consequence of the individual's effort to maintain his personal integrity and dignity during actions that are opposite to his ethical beliefs.[2]

MD is quite often among all health care professionals and subsequently physicians are also experiencing such feelings. However, the role of the physician differs substantially from the other health workers, as the central responsibility for the clinical outcome is in his hands. More specifically, the physician's responsibility is multilevel, as it constitutes the responsibility for the individual (coverage of the patient's needs in health), social responsibility (promotion of public health), legislative responsibility and personal responsibility (need to be accepted as a good doctor by his colleagues and patients).[3] All these factors can contribute to the development of non-controlled MD with presentations such as outbursts of rage, burnout syndrome and secondary acute anxiety disorders.[4] Moreover, MD is associated with inadequate medical judgment which can lead to serious medical errors.[5]

A lot of studies have been performed worldwide regarding MD in nursing staff, but the evidence for the physicians is limited.[6] However, the incidence of MD is high among physicians. Houston et al. found that the incidence and severity of MD were higher for nurses, but physicians followed in proximity, especially the residents.[7] The investigation of MD among physicians is limited worldwide and in Greece, there is no evidence reported in this field.

Methods

The purpose of this research was the investigation of MD among Greek physicians of all specialties who are working in the Greek National Health System GNHS. This study was conducted from March 2020 to May 2020 in seven hospitals (6 general hospitals and 1 cancer hospital) in Athens and Thessaloniki. Through the personal interview, the participants fulfilled the Moral Distress Scale-Revised (MDS-R) questionnaire which was translated by two independent bilingual speakers from English to the Greek language. A total number of randomly chosen 200 physicians, of all specialties and degrees, participated in the survey through direct interview.

The MDS-R questionnaire, as revised by Hamric et al. in 2012, was used for the purposes of this study.[7] This questionnaire constituted 21 items that describe situations commonly met in clinical practice that are associated with MD. The score for each item ranges from 0 (never) to 4 (very frequently) for the frequency and from 0 (none at all) to 4(very extended) for the intensity respectively. The aggregate of all the items, which is a composite score ranging from 0 to 336, reveals the degree of MD. More specifically, the greater score of the MDS-R corresponds to a higher degree of MD, with a cutoff value for its presence at 100 units.[7]

The study was conducted after written approval of the ethics committee of Evangelismos General Hospital (141-23/04/2020). All participants were informed about the purpose of the study. The whole investigating and experimenting process is in accordance with the Declaration of Helsinki and the Greek legislation in Bioethics. The personal data and rights were protected according to the law.

Quantitative variables were expressed as mean values (Standard Deviation) or as median (Interquartile Range), while qualitative variables were expressed as absolute and relative frequencies. Exploratory factor analysis was carried out to evaluate construct validity, disclose underlying structures and reduce the number of variables of MD scale. Principal component

analysis (PCA) was chosen as the extraction method using Varimax rotation. Kaiser-Meyer-Olkin procedure for measuring sample adequacy was applied. The cut-off point for factor loadings was 0.40 and for Eigenvalues it was 1.00. Intraclass correlation coefficients (ICCs) were used in the test-retest procedure. Internal consistency reliability was determined by the calculation of Cronbach's α coefficient. Scales with reliabilities equal to or greater than 0.70 were considered acceptable. Convergent validity was tested through intercorrelations (Spearman's rho) among the factors that emerged from the factor analysis. All reported p values are two-tailed. Statistical significance was set at $p<0.05$ and analyses were conducted using Statistical Package for Social Sciences (SPSS) statistical software (version 22.0).

Results

The sample consisted of 200 physicians with a mean age of 36.8 years (SD=11.5 years). Participants' sociodemographic characteristics are reported in Table 1. Six out of ten were males, 63% were unmarried and 35% had children. The majority of the participants had a bachelor's degree and were working in a general hospital, with the percentages being 61% and 62.5% respectively. Mean working experience was 10 years (SD=9.6 years) and 28% of the sample had worked abroad as a physician.

Table 1. Demographic characteristics

Characteristics	N (Total number 200) (%)
Sex	
Males	120 (60.0)
Females	80 (40.0)
Family status	
Unmarried	126 (63)
Married	72 (35)
Divorced-Widowed	2 (1)
Children	70 (35)
Educational status	
Bachelor degree	122 (61.0)
MSc	36 (18.0)
PhD	34 (17.0)
University title holder	8 (4.0)
Hospital	
General	124 (62)
Oncological	76 (38)
Working experience (years), mean (SD)	10.0 ± 9.6
Ever worked abroad as a physician	56 (28)

Table 2. Descriptive measures for items of the Moral Distress scale

	Frequency		Level of disturbance		Frequency x Level of disturbance	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.	2.27 (1.28)	2 (1 – 3)	2.37 (1.37)	3 (1 – 4)	6.19 (5.21)	6 (2 – 12)
2. Witness healthcare providers giving "false hope" to the patient or family.	1.98 (1.33)	2 (1 – 3)	2.41 (1.4)	3 (1 – 4)	5.48 (5.27)	5 (1 – 9)
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient.	2.6 (1.21)	3 (2 – 4)	2.13 (1.32)	2 (1 – 3)	6.18 (5.29)	6 (2 – 9)

	Frequency		Level of disturbance		Frequency x Level of disturbance	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)
4. Initiate extensive life-saving actions when I think they only prolong death.	2.53 (1.32)	3 (1.5 — 4)	2.22 (1.35)	2 (1 — 3)	6.20 (5.20)	6 (2 — 9)
5. Follow the family's request not to discuss death with a dying patient who asks about dying.	2.25 (1.37)	2 (1 — 3)	2.31 (1.39)	2 (1 — 4)	5.94 (5.32)	4 (2 — 9)
6. Feel pressure from others to order what I consider to be unnecessary tests and treatments.	2.28 (1.37)	2 (1 — 3)	2.27 (1.33)	2 (1 — 3)	6.17 (5.36)	6 (1 — 12)
7. Continue to participate in care for a hopelessly ill person who is being sustained on a ventilator, when no one will make a decision to withdraw support.	1.98 (1.46)	2 (1 — 3)	1.96 (1.40)	2 (1 — 3)	4.83 (5.14)	3 (0 — 9)
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.	1.61 (1.34)	1 (1 — 3)	1.95 (1.42)	2 (1 — 3)	3.74 (4.46)	2 (0 — 6)
9. Assist another physician who in my opinion is providing incompetent care.	2.24 (1.30)	2 (1 — 3)	1.92 (1.46)	2 (0 — 3)	4.95 (5.09)	4 (0 — 8)
10. Be required to care for patients I don't feel qualified to care for.	1.80 (1.29)	2 (1 — 3)	1.98 (1.51)	2 (0 — 3)	4.38 (4.82)	3 (0 — 6)
11. Let medical students perform painful procedures on patients solely to increase their skills.	1.43 (1.38)	1 (0 — 3)	1.20 (1.38)	1 (0 — 2)	1.91 (3.45)	0 (0 — 3)
12. Provide care that does not relieve the patient's suffering because I fear that increasing the dose of pain medication will cause death.	1.54 (1.28)	1 (1 — 3)	1.56 (1.36)	1 (0 — 3)	2.73 (3.73)	1 (0 — 4)
13. Request nurses or others not to discuss the patient's prognosis with the patient or family.	1.58 (1.36)	1 (0 — 3)	1.73 (1.40)	2 (0 — 3)	3.25 (4.27)	2 (0 — 4)
14. Increase the dose of sedatives/opiates for an unconscious patient that I believe could hasten the patient's death.	0.95 (1.26)	0 (0 — 2)	1.77 (1.64)	1.5 (0 — 3)	1.94 (3.79)	0 (0 — 2)
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.	1.57 (1.3)	1 (1 — 2)	2.28 (1.52)	3 (1 — 4)	4.28 (4.88)	3 (0 — 7)
16. Follow the family's wishes for the patient's care when I do not agree with them, but do so because of fears of a lawsuit.	1.61 (1.33)	1 (0 — 3)	2.59 (1.54)	3 (1 — 4)	4.67 (5.09)	3 (0 — 8)
17. Work with nurses or other healthcare providers who are not as competent as the patient care requires.	2.12 (1.31)	2 (1 — 3)	2.47 (1.37)	3 (1 — 4)	6.12 (5.23)	4 (1 — 12)
18. Witness diminished patient care quality due to poor team communication.	2.01 (1.27)	2 (1 — 3)	2.55 (1.37)	3 (2 — 4)	5.91 (5.04)	4 (2 — 9)
19. Ignore situations in which patients have not been given adequate information to ensure informed consent.	1.46 (1.25)	1 (0 — 2)	2.18 (1.44)	2 (1 — 3)	3.37 (4.06)	2 (0 — 6)
20. Watch patient care suffer because of a lack of provider continuity.	1.96 (1.37)	2 (1 — 3)	2.46 (1.48)	3 (1 — 4)	5.46 (5.25)	4 (0 — 9)

	Frequency		Level of disturbance		Frequency x Level of disturbance	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)
21. Work with levels of nurse or other care provider staffing that I consider unsafe.	2.08 (1.32)	2 (1 – 3)	2.64 (1.46)	3 (1 – 4)	6.17 (5.5)	4 (1 – 12)

*Standard Deviation (SD), Interquartile Range (IQR)

Moral distress items are presented in Table 2.

The test-retest procedure was undergone in a sample of 18 physicians and it was found significant and high agreement in all of the MD scale items, as shown in Table 3.

Initially, the factorability of the 21 items was examined. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.85, above the commonly recommended value of 0.60. Bartlett's test of sphericity (test of at least one significant correlation between 2 of the items studied) was also significant at $p<0.001$. The loadings for all items were above 0.40, further confirming that each item shared some common variance with other items. Given these overall indicators, factor analysis was regarded to be suitable for all the 21 items.

Table 3. Test-retest results (N=18)

Item	ICC	95% CI	P
1	1.00	.98 - 1.00	<.001
2	.99	.97 - 1.00	<.001
3	.99	.98 - 1.00	<.001
4	.99	.96 - .99	<.001
5	1.00	1.00 - 1.00	<.001
6	.97	.92 - .99	<.001
7	.98	.95 - .99	<.001
8	.98	.95 - .99	<.001
9	.98	.94 - .99	<.001
10	.98	.95 - .99	<.001
11	.97	.91 - .99	<.001
12	1.00	.99 - 1.00	<.001
13	1.00	.99 - 1.00	<.001
14	1.00	.98 - 1.00	<.001
15	.99	.97 - 1.00	<.001
16	1.00	1.00 - 1.00	<.001
17	.98	.93 - .99	<.001
18	1.00	1.00 - 1.00	<.001
19	1.00	.99 - 1.00	<.001
20	1.00	1.00 - 1.00	<.001
21	1.00	1.00 - 1.00	<.001

Four factors emerged from exploratory factor analysis, whose results are presented in Table 4. The first factor "Ability/ Adequacy" consisted of 8 items and explained 17.7% of the variance.

The second factor "Utility" consisted of 4 items and explained 14.3% of the variance. The third factor "Bioethics" consisted of 5 items and explained 13.4% of the variance. Finally, the fourth factor "Fear of sanctions" consisted of 4 items and explained 1.4% of the variance. All factors combined explained 46.8% of the variance.

Table 4. Exploratory factor analysis results with PCA method and Varimax rotation

	Factor loadings			
	Ability/ Adequacy	**Utility**	**Bioethics**	**Fear of sanctions**
1. Provide less than optimal care due to pressures from administrators or insurers to reduce costs.	.46			
2. Witness healthcare providers giving "false hope" to the patient or family.		.53		
3. Follow the family's wishes to continue life support even though I believe it is not in the best interest of the patient.		.78		
4. Initiate extensive life-saving actions when I think they only prolong death.		.72		
5. Follow the family's request not to discuss death with a dying patient who asks about dying.		.69		
6. Feel pressure from others to order what I consider to be unnecessary tests and treatments.				.44
7. Continue to participate in care for a hopelessly ill person who is being sustained on a ventilator, when no one will make a decision to withdraw support.				.60
8. Avoid taking action when I learn that a physician or nurse colleague has made a medical error and does not report it.			.45	
9. Assist another physician who in my opinion is providing incompetent care.	.50			
10. Be required to care for patients I don't feel qualified to care for.	.60			
11. Let medical students perform painful procedures on patients solely to increase their skills.			.83	
12. Provide care that does not relieve the patient's suffering because I fear that increasing the dose of pain medication will cause death.			.71	
13. Request nurses or others not to discuss the patient's prognosis with the patient or family.			.66	
14. Increase the dose of sedatives/opiates for an unconscious patient that I believe could hasten the patient's death.			.73	
15. Take no action about an observed ethical issue because the involved staff member or someone in a position of authority requested that I do nothing.				.71
16. Follow the family's wishes for the patient's care when I do not agree with them, but do so because of fears of a lawsuit.				.48
17. Work with nurses or other healthcare providers who are not as competent as the patient care requires.	.70			
18. Witness diminished patient care quality due to poor team communication.	.71			
19. Ignore situations in which patients have not been given adequate information to ensure informed consent.	.48			
2. Watch patient care suffer because of a lack of provider continuity.	.70			

21. Work with levels of nurse or other care provider staffing that I consider unsafe.	.81			
% Variance explained	**17.7**	**14.3**	**13.4**	**10.4**

Table 5. Cronbach's α coefficient for each factor

Factor	Item	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Ability/ Adequacy	1	.52	.84	.85
	9	.45	.85	
	10	.47	.84	
	17	.68	.82	
	18	.68	.82	
	19	.51	.84	
	20	.64	.82	
	21	.72	.81	
Utility	2	.45	.79	.78
	3	.69	.67	
	4	.65	.70	
	5	.57	.74	
Bioethics	8	.37	.78	.76
	11	.64	.68	
	12	.54	.71	
	13	.53	.71	
	14	.59	.69	
Fear of sanctions	6	.47	.65	.70
	7	.44	.66	
	15	.50	.63	
	16	.54	.60	

Cronbach's α coefficients were all above 0.7, indicating acceptable reliability in all factors, as shown in Table 5.

All four factors were positively correlated with each other, as presented in Table 6. Thus, higher ability/adequacy is correlated significantly with greater utility and bioethics concerns. Also, greater utility is correlated significantly with greater bioethics concerns. Furthermore, greater fear of sanctions is positively correlated with greater ability/adequacy, utility and bioethics concerns.

Table 6. Descriptive measures and correlation coefficients among factors

Factor		Number of items	Mean (SD)	Median (IQR)	Correlation coefficients			
					1	2	3	4
1	Ability/ Adequacy	8	5.18 (3.48)	4.84 (2.25 — 7.50)	1.00	.52	.58	.62
2	Utility	4	5.93 (4.12)	4.88 (2.75 — 9.00)		1.00	.35	.63
3	Bioethics	5	2.66 (2.83)	1.80 (0.60 — 3.60)			1.00	.49

4	Fear of sanctions	4	4.97 (3.73)	4.50 (2.00 — 7.50)	1.00

Note. All correlation coefficients were significant at p<.0.001

The score for MD ranged from 0 to 266 units with a mean value of 101, 4 units (SD=57, 0 units). There was no correlation detected between MD and demographic characteristics and educational level. On the contrary, MD was found higher for consultants in comparison to the other hierarchical levels (p=0.031) (values according to hierarchical level: residents 102, fellow 74, resident 121, head of department 104). The study also revealed a significant difference in the MDS-R score between general and cancer hospitals. More specifically, the mean score for workers in general hospitals was 109 (36) compared to 87 (9) for workers in cancer hospitals (p=0.021). In addition, in the physicians who declared intention to leave their current clinical position, the score of MD was significantly higher (p=0.001).

Discussion

The impact of MD is a field that concerns the scientific society more and more due to the consequences of this phenomenon for both the health workers and the quality of the medical care provided. According to Fumis et al., the incidence of burnout syndrome was elevated for the individuals who recorded scores of the MDS-R greater than 100 units.[9] In this study, most of the scores of most participants surpassed the limit of 100 units and this is indicative of increased incidence of MD among Greek physicians.

Although other studies in the field of disorders related to work showed that these entities are correlated with demographic characteristics, in this research there wasn't any such correlation detected.[10] However, the degree of the consultant and working in a general hospital were independent factors contributing to higher MDS-R scores. Austin et al. showed that MD was higher for physicians with 6-10 years of working experience which is compatible with the findings of this research.[11] One useful finding of this survey is that physicians who worked in general hospitals presented higher scores of MD compared to those working in cancer hospitals. This result is reported for the first time in the literature, as far as we know from our research. Additionally, MD was associated with the intention to leave the current job, a finding that was also reported from other studies.[12,13]

The results of this study showed that MDS-R, in its Greek version, is a reliable and valid instrument for the investigation of MD among physicians working on GNHS. Moreover, the factor analysis confirmed that all the items of MDS-R are suitable for inclusion in the Greek version of the questionnaire.

The examination of factorability revealed four factors that implicate MD, which are the following: Ability/ Adequacy, Utility, Bioethics, and Fear of sanctions. In previous studies on this domain, the emerging factors were either 3 to 6. More specifically, three factors were used by Corley et al., by whom the MDS was introduced for MD measurement in nurses, and by Hamric et al., who made a revision of the initial scale (MDS-R) which is suitable for the study of others categories of health workers.[2,8] On the other side, the Italian version of MDS-R used the following four factors: futile care, deceptive communication, ethical misconduct and poor teamwork. Moreover, the total variance was found 59% for the four-factor model, significantly more suitable than the 3-factor model in which the variance was 19%.[14] Other researchers used 5 or 6 factors in the analysis of MD concerning nursing stuff.[15,16] In our research, the total variance was 46,8% which is quite satisfactory. In addition, all the factors were positively correlated with each other, although the degree of correlation varied. (Table 6)

In daily practice, physicians find ways to cope with MD intentionally or unconsciously. The diligence, the autonomy, the compromise and the intuition are some techniques used for this purpose based on the statements of physicians and nurses.[17] However, MD is a condition that affects the organization's function. Morris and

Dracup support that methods and mechanisms for the detection of MD are required and at the same time, the collection of more evidence is essential for the investigation of this multimodal phenomenon.[18] According to Tigard, interventions are needed and the recording of their efficacy will permit the evaluation of these measures. Therefore, the experience will augment this domain during experimenting with more effective choices in the future.[19] In any case, Garros declares that the culture of frank dialogue and good team communication is a beneficial preventative measure for the elimination of MD among physicians.[20]

The sample of the study constituted physicians of all specialties, all degrees, and different hospitals of the two largest cities of Greece. In this thought, the results of the study can be generalized and depict the MD incidence and characteristics among physicians of the GNHS. In regard to the study limitations, it should be mentioned that the research took place during the first wave of the pandemic COVID-19 in Greece (March 2020 – May 2020) under unusual conditions. Despite this fact, the validity and the integrity of MDS-R for the investigation of MD in the Greek language were proven by the results.

Conclusions

In this study, the MDS-R questionnaire was translated and validated in its Greek version. The examination of factorability showed that all 21 items of MDS-R are suitable for inclusion in the Greek version. Four main factors emerged from the exploratory factor analysis and the total variance was 46.8%. MD was detected in a significant degree in more than half participants. The incidence and intensity of MD were higher in physicians who worked in general hospitals compared to those working in cancer hospitals, which is reported for the first time. In addition, MD was higher for the individuals with the intention to leave their current clinical position. To sum up, the Greek version of MDS-R is a valid and reliable instrument for the investigation of MD among physicians working in GNHS.

Acknowledgments

The statistical analysis was performed by CharaTzavara, Biostatistician, MSc, PhD.

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