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Predictors and consequences of moral distress in home-care nursing: A cross-sectional survey

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Abstract

Background: Nurses frequently face situations in their daily practice that are ethically difficult to handle and can lead to moral distress.

Objective: This study aimed to explore the phenomenon of moral distress and describe its work-related predictors and individual consequences for home-care nurses in Germany.

Research design: A cross-sectional design was employed. The moral distress scale and the COPSOQ III-questionnaire were used within the framework of an online survey conducted among home-care nurses in Germany. Frequency analyses, multiple linear and logistic regressions, and Rasch analyses were performed.

Participants and research context: The invitation to participate was sent to every German home-care service (n = 16,608).

Ethical considerations: The study was approved by the Data Protection Office and Ethics Committee of the German Federal Institute for Occupational Safety and Health.

Results: A total of 976 home-care nurses participated in this study. Job characteristics, such as high emotional demands, frequent work-life-conflicts, low influence at work, and low social support, were associated with higher disturbance caused by moral distress in home-care nurses. Organizational characteristics of home-care services, such as time margin with patients, predicted moral distress. High disturbance levels due to moral distress predicted higher burnout, worse state of health, and the intention to leave the job and the profession, but did not predict sickness absence.

Conclusions: To prevent home-care nurses from experiencing severe consequences of moral distress, adequate interventions should be developed. Home-care services ought to consider family friendly shifts, provide social support, such as opportunities for exchange within the team, and facilitate coping with emotional demands. Sufficient time for patient care must be scheduled and short-term takeover of unknown

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tours should be prevented. There is a need to develop and evaluate additional interventions aimed at reducing moral distress, specifically in the home-care nursing sector.

Keywords
Moral distress, moral stress, ethics, home-care nursing, home-care nurses, working conditions

Introduction

In their daily practice, nurses frequently face ethical issues and are confronted with ethical decision-making due to the particularly vulnerable situations of patients. The importance of ethical issues in nursing is defined in the Code of Ethics, which nurses are urged to follow.[1] Impacted by the COVID-19 pandemic, nurses are exposed to serious ethical dilemmas, for instance, witnessing inadequate provision of care or dilemmas regarding prioritization.[2,3] When nurses cannot act according to their ethical beliefs, they may experience moral distress.[4] Jameton, who first conceptualized moral distress (MD) after observing nurses, stated that MD arises "when one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action".[4]

Several changes were made to further develop the construct. For instance, a broader understanding of MD including concepts such as moral insecurity—the confusion regarding the morally correct decision that can also lead to MD—was introduced.[5] Additionally, the risk of overlooking other suffering experiences of nurses in case of moral coercion, for example, of an institution (eg compromised moral agency), was considered a necessary condition for MD.[6]

The American Association of Critical Care Nurses highlighted that MD is a significant problem among nurses that not only affects nurses' physical and emotional health but also the quality, quantity, and costs of nursing care.[7] Thus, MD can have various deleterious effects at different levels. Previous systematic reviews have shown that MD can negatively affect nurses' health, leading to biopsychosocial responses such as anger, guilt, emotional withdrawal, anxiety, feelings of powerlessness, and depression, or physical symptoms such as insomnia, headache, loss of appetite, and stomach ache.[8,9] Other results indicate that the quality of care is at risk and that patients' health outcomes may be affected when nurses experience MD.[8] Furthermore, MD is linked to the intention to leave the job and the profession.[10,11] The unique aspect of MD that separates it from other forms of stress is the threat to nurses' moral integrity.[12,13]

The root causes of MD are at the patient, team, and system levels.[14,15] Morally stressful situations for nurses at the *patient level* can be the task of conducting life-prolonging or aggressive treatment, which is associated with suffering,[16] witnessing healthcare providers giving false hope to the patient,[14] feeling pressured to conduct unnecessary tests,[14,15] or lack of respect for the patient's will.[17] Examples of morally stressful situations at the *team level* are, lack of involvement in nursing-specific decision-making processes, the necessity to cooperate with insufficiently qualified colleagues,[18,19] and inefficient communication between colleagues leading to errors.[19,20] At the *system level*, the distribution of resources or a lack of resources plays an important role in creating morally difficult situations. Regarding the influence of job and organizational characteristics on nurses' MD, a systematic review showed that factors such as poor cooperation and ethical climate, professional attitudes such as low work satisfaction and engagement, and psychological characteristics such as low psychological empowerment and influence at work, are related to MD.[21] Furthermore, it was reported that job characteristics such as task significance, influence at work, and dealing with others influenced MD in Chinese nurses.[22]

In addition to individual and work environment factors, the specific practice setting may affect the experience of MD.[23] Thus, many practice settings for nurses were examined: critical care,[24] oncology,[25]

pediatrics,[26,27] mental health nursing,[28] and intensive care.[29] However, although home-care nursing is becoming more important, only a few studies regarding moral aspects in this context have been conducted.[30,31] Moreover, the predictors and consequences of MD on nurses have not been empirically investigated. Other strains and health complaints (eg emotional exhaustion) are experienced to a comparable extent in home-care nursing as in long-term care and hospitals, but the underlying situations are different.[32] Therefore, it seems worthwhile to investigate the specific predictors of MD in home-care nursing to develop suitable interventions for its prevention in home-care setting. Understanding the specifics of home-care nursing will foster the development of preventive measures to counteract the burden of MD on home-care nurses (HCN).

Aim

This study aimed to explore the frequency and extent of disturbances caused by MD in HCN (research question 1). We analyzed on the one hand job characteristics and on the other hand organizational characteristics to predict MD in HCN (research question 2).

Additionally, we investigated the associations between MD and health-related outcomes (burnout, sickness absence, health status, intention to leave a job, and profession) (research question 3) in a sample of German HCN.

Methods

Research design

Embedded in the framework of a nationwide online survey, a cross-sectional study was conducted between 1 May 2022 and 30 June 2022. Reporting was guided by the Checklist for Reporting of Survey Studies (CROSS) statement.[33]

Participants and research context

The target group for the online survey were HCN who (1) were employed in home-care services (HCS) with social insurance, (2) had finished their professional nursing education training, (3) were at least 18 years old, and (4) consented to participate in the online survey. The study participants were recruited using a variety of methods. First, an invitation postcard containing background information on the survey, the link, and a QR code to the online questionnaire were sent by email to all HCS in Germany. The Association of Substitute Health Funds provided addresses for HCS. This dataset included 16,608 addresses and approximately 14,000 email addresses. The German Federal Institute for Occupational Safety and Health agreed that the addresses would be used only once for the survey. A digital reminder was sent to all available email addresses after 3 weeks.

Second, the supporting associations of HCS were asked to participate in the survey. Third, the survey was distributed via multipliers and social media platforms (Xing, LinkedIn, Facebook, Instagram, and Telegram). As incentives can increase the response rate,[34] participation in a lottery was offered.

Ethical considerations

The study design was approved by the Data Protection Office and Ethics Committee of the German Federal Institute for Occupational Safety and Health (BAuA: No. 049_2022). The Ethics Committee reviewed the study in compliance with ethical guidelines. Each participant was informed of the procedure and agreed to

participate. The data of the participants were treated confidentially. No conclusion can be drawn from the statements in the survey about identifiable persons. No risk to HCN resulted from study participation. The standards of responsible research by Wager[35] and Kleinert were met.

Instruments

After a comprehensive literature search for the appropriate instrument to measure MD in home-care nursing in Germany, the German version of the Moral Distress Scale (MDS) was selected.[36] This scale is based on the conceptual model proposed by Corley.[37] The original version of the scale has been supplemented several times and linguistically validated for different countries.[28,38] Instruments based on Corley's scale of MD are most useful for measurement purposes.[39] A Swiss study adapted Hamric's version of Corley's MDS for the German-speaking countries and added three items to the nine existing items on lack of collegial collaborations, inadequate orders of physician, and informal assumption of other staff members' responsibilities.[36,40,41]

Moral distress is in context of the scale understood as "the burden felt by a nurse who believes he or she knows what the professionally ethical behavior would be in a particular care situation but, due to impediments, is unable to act accordingly."[36] The scale includes two sections: frequency of morally distressing situations and level of disturbance in those situations for the 12 items. Frequency was assessed using a 5-point response scale ranging from 0 (never) to 4 (several times a week). Participants assessed the level of disturbance, using a 5-point response scale, ranging from 0 (no disturbance) to 4 (very high level of disturbance). Clear numerical ranges were provided for each response, and corresponding smiley icons were mapped for the levels of disturbance. Additionally, one separate item was added to measure the importance of professional ethical principles in daily business to the nurses using a 5-point verbal rating scale and brief definitions of ethical principles and MD were provided.[36] In addition to the MDS, the survey included (1) items on job characteristics following Copenhagen Psychosocial Questionnaire (COPSOQ III):[42] work intensity (B.1 Item 1–3), emotional demands and concealment of emotions (B.1 Part2), work-life-conflicts (B.2), influence at work (B.3), possibilities for development (B.5 Item 1,2,4), and social support from colleagues (B.8 Item 1,2,6,8,9); (2) items on organizational characteristics: time margin with patients, functional care, familiarity with patients before the tour, items based on the guideline "Good Ward organization" on organizational characteristics;[43] (3) items on health indicators (health situation, burnout, intention to leave the job/profession, sick leave, as part of COPSOQ III); and (4) sociodemographic variables. Items were selected based on a model created from the literature review. The COPSOQ III is a well-validated and common instrument for capturing psychosocial factors at work.[44]

Procedure

The first draft of the questionnaire was discussed with experts (HCN, nursing scientists, and political stakeholders with a focus on nursing) (n = 23). The preliminary instrument was pretested at the unit "Designing service work" of the BAuA (n = 8) and, after revision, another pretest on the target group of HCN (n = 10) was conducted. Additionally, three experts from the home-care sector were consulted to evaluate the applicability of MDS to the outpatient sector. Considering the positive feedback from the experts, the MDS was not edited. Only an explanation (referring to the term "staffing levels") was added via footnote, so that the HCN could imagine the situation in their care setting more easily. The pretests and the survey were conducted using the survey tool SoSciSurvey. The questionnaire could be accessed via link or QR code. Because the study used convenience sampling, no personalized links were created. The average time for answering the questionnaire was 20–30 min according to the respondents in the pretests.

Data analysis

All analyses were performed using SPSS software (version 28). Prior to the survey, a power analysis was conducted using G*Power. Accordingly, a minimum of 350 participants would be necessary to determine the expected effects. Descriptive statistics were performed by calculating absolute numbers (n) and prevalence rates (%) with mean and standard deviation (SD) according to the data type for all sociodemographic variables, and frequency and disturbance level caused by MD.

As MD is a latent variable and the scale was being applied in a new setting (home-care nursing), it was appropriate to use Rasch analysis as an alternative to classical test theory measurements.[45] Rasch analysis belongs to the family of item response theory models and is used in constructing interval-scaled measures of latent traits.[46] Especially for research questions in nursing science Rasch analysis provides helpful insights into the investigation of measurement properties.[47] Thus, the items related to disturbance were analyzed through Rasch analysis using the software RUMM2030.[48] Responses from nurses who had never experienced MD situation(s) were excluded from the analysis. A calculation with the product of frequency and levels of disturbance was not performed owing to theoretical convictions, for example, the complex relationship between frequency and disturbance level caused by MD, as mentioned in previous studies.[36,49] Thus, for further calculations, the Rasch score of the level of disturbance was used because it was more specific than the mean score.

The mean was calculated based on the scales for job characteristics, burnout, health status, and sick leave. One-way analyses of variance (ANOVA) were conducted, including a test for homogeneity of variances, to verify if there were significant differences between sociodemographic groups and the level of disturbance caused by MD. The same procedure was conducted to test for significant differences between the sociodemographic groups and metric health-related outcomes. To explore the relationships between job characteristics (work intensity, emotional demands, work-life-conflicts, influence at work, possibility for development, social support), organizational characteristics (functional care, time margin, knowing the patients before providing care), and health-related outcomes and the level of disturbance caused by MD, the Pearson product-moment correlation was used. All variables that showed a significant correlation ($p < 0.01$) with the respective dependent variables were included in the multivariate analysis.

Multivariate linear regression analysis with the level of disturbance caused by MD as a dependent variable and job and organizational characteristics as independent variables was performed to identify predictors of MD in German HCN.

To investigate the health-related consequences (burnout, sickness absence, health status, intention to leave) of MD, multivariate logistic and linear regressions (depending on data type) were used, adjusting for other identified explanatory variables. Parameter estimates with p-values (two-tailed) < 0.05 were considered significant. To evaluate the influence of the common method bias (CMB), Harman's single-factor test was conducted with a resulting variance of 38.7%, which indicated that it was unlikely that the CMB had any influence on the results.[50]

Results

The online questionnaire received 6012 clicks. Of these, 2025 participants started the questionnaire and 976 HCN completed it up to the last page (completion rate). All participants completed the frequency scale. However, among these, 169 participants completed the level of disturbance scale, although they did not experience a morally difficult situation and thus, disobeyed the instructions. This proportion of individuals was excluded for further analyses.

So that the dataset consisted of 807 individuals, except for the response to the frequency items.

Characteristics of the participants

The majority of respondents were female (81.7%) and between 35 and 54 years old (mean: 46.8, SD = 10.5). Of the respondents, 50.1% were in management positions (Table 1). In terms of gender, age, and migration background, the sample largely represented HCN in Germany (Destatis, nd; Federal Minister of Health, 2011).[51,52,53]

The participants had been working in home-care nursing for an average of 15.7 years (SD = 9.2). The level of disturbance caused by MD was independent of gender, age, marital status, migration background, professional experience, organizational tenure, shift work, type of employment, and leadership role (Online Supplement 1).

Frequency and level of disturbance caused by moral distress

The results showed that the frequency and level of disturbance caused by MD among German HCN varied between moral stressors (Tables 2 and 3). More than half of the respondents included ethical aspects in their decision-making weekly. 2 to 15% of the participants experienced morally challenging situations at least monthly, 1 to 9% weekly, and 1 to 6% several times per week. The disturbing situations that were mentioned most frequently were: Item 1 ("Was unable to deliver care in keeping with my professional ethical principles due to administrative or budgetary reasons"), Item 3 ("Have carried out physician's orders for tests or treatments that I consider to be inappropriate in view of the treatment"), and Item 6 ("Have worked with nurses or other healthcare providers I felt were lacking competence, resulting in quality of care being diminished or patients being put at risk"). The mean frequency score varied between 0.28 and 1.09 (research question 1).

Among respondents, 5 to 19% stated that the disturbance caused by MD was high and 1 to 10% indicated that the disturbance was very high.

The situations that led to the highest levels of disturbance were: Item 11 ("I was unable to prevent or alleviate the suffering of a patient due to inadequate physician's orders"; 45.5% stated high or very high disturbance), Item 6 ("Have worked with nurses or other healthcare providers I felt were lacking competence, resulting in quality of care being diminished or patients being put at risk"; 35.5% stated high or very high disturbance), and Item 9 ("Have worked in a nursing team with staffing that I considered inadequate"; 33.9% stated high or very high disturbance). The mean score for level of disturbance ranged from 1.62 to 2.28 (research question 1).

Predictors of moral distress

Correlations between job and organizational characteristics and Rasch score of the disturbance level caused by MD are available in Online Supplement 2.

All job characteristics (work intensity, emotional demands, work-life-conflicts, influence at work, possibility for development, and social support) correlated significantly in the expected direction with level of disturbance caused by MD. Regarding organizational characteristics, the fact that patients were already known before an HCN had to provide care and the time margin with patients correlated significantly. Functional care did not correlate significantly with level of disturbance caused by MD. Variables that were significantly associated with disturbance level caused by MD in bivariate analyses were included in the multivariate regression analysis, thus the item "functional care" was excluded.

Table 4 presents the results of linear regression analysis. Emotional demands, work-life-conflicts, influence at work, social support, and the time margin with patients predicted the level of disturbance caused by MD (research question 2).

Table 1. Sociodemographic data of the participants.

Variable	Participants N (%)	
	n	%
Gender		
Female	659	81.7
Male	146	18.1
Diverse	2	0.2
Age		
15–34 years	122	15.1
35–54 years	439	54.4
>54 years	245	30.4
Material status		
Married/partnership	510	63.2
Single	154	19.1
Divorced	127	15.7
Widowed	16	2.0
Migration background		
Yes	65	8.1
No	742	91.9
Qualification[1]		
Nurse aid	28	3.5
Geriatric nursing Assistant	16	2.0
Geriatric nurse	276	34.2
Nursing Assistant	10	1.2
Nurse	344	42.6
Pediatric nurse	55	6.8
University qualified nurse	82	10.2
Professional experience in home-care nursing		
<2 years	49	6.2
3–5 years	90	11.4
6–10 years	148	18.7
>11 years	504	63.7
Organizational tenure		
<2 years	114	14.8
3–5 years	146	18.9
6–10 years	178	23.1
>11 years	333	43.2
Shift work		
Yes	380	47.1
No	427	52.9
Type of employment		
Part-time	268	39.8
Full-time	406	60.2
Leadership role		
Yes	404	50.1
No	403	49.9

Note. $N = 807$. There are missing values in the variables age ($n = 1$), organizational tenure ($n = 36$), professional experience ($n = 16$), and type of employment ($n = 133$).
[1]Multiple answers were possible.

Table 2. Frequency of moral distress of home-care nurses (n = 976).

		Frequency (n = 976), Percentage of answers (n, %)						
		Mean	**SD**	**0** (= never)	**1** (less than once a month)	**2** (monthly)	**3** (weekly)	**4** (several times a week)
	I Have relied on professional ethical principles when making decisions regarding patient care	2.65	1.25	51 (5.2%)	173 (17.7%)	178 (18.2%)	243 (24.9%)	331 (33.9%)
	Moral distress							
1	Was unable to deliver care in keeping with my professional ethical principles due to administration or budgetary	1.09	1.20	392 (40.2%)	303 (31.0%)	138 (14.1%)	83 (8.5%)	60 (6.1%)
2	Have experienced patients or family members being given "false hope," contrary to what is known about their situation	0.79	0.90	430 (44.1%)	395 (40.5%)	97 (9.9%)	36 (3.7%)	18 (1.8%)
3	Have carried out physician's orders for tests or treatments that I consider to be inappropriate in view of the treatment	0,97	1,01	383 (39.2%)	350 (35.9%)	151 (15.5%)	73 (7.5%)	19 (1.9%)
4	Have taken no action when a member of the multidisciplinary team made a medical error and failed to report it	0.27	0.61	774 (79.3%)	162 (16.6%)	21 (2.2%)	16 (1.6%)	3 (0.3%)
5	Have had to provide care to patients for which I felt unqualified, resulting in quality of care being diminished or patients being put at risk	0.25	0.59	783 (80.2%)	157 (16.1%)	21 (2.2%)	11 (1.1%)	4 (0.4%)
6	Have worked with nurses or other healthcare providers I felt were lacking incompetence, resulting in quality of care being diminished or patients being put at risk	0.92	1.01	409 (41.9%)	348 (35.7%)	133 (13.6%)	61 (6.3%)	25 (2.6%)
7	Have taken no action in instances where signs of possible verbal or physical abuse* of patients or patient neglected**	0.28	0.61	762 (78.1%)	172 (17.6%)	30 (3.1%)	6 (0.6%)	6 (0.6%)

(continued)

Table 2. (continued)

		Frequency (n = 976), Percentage of answers (n, %)						
		Mean	**SD**	**0** (= never)	**1** (less than once a month)	**2** (monthly)	**3** (weekly)	**4** (several times a week)
8	Have seen the quality of care and treatment suffer due to a lack of provider continuity within the treatment team	0.86	0.98	443 (45.4%)	318 (32.6%)	138 (14.1%)	63 (6.5%)	14 (1.4%)
9	Have worked on a nursing team with staffing that I considered inadequate	0.71	0.99	550 (56.4%)	245 (25.1%)	120 (12.3%)	37 (3.8%)	24 (2.5%)
10	Because of uncollegial collaboration, I was unable to deliver a level of care in keeping with my professional ethic	0.45	0.76	665 (68.1%)	217 (22.2%)	68 (7.0%)	20 (2.0%)	6 (0.6%)
11	I was unable to prevent or alleviate the suffering of a patient due to inadequate physician's orders	0.87	0.95	418 (42.8%)	347 (35.6%)	146 (15.0%)	49 (5.0%)	16 (1.6%)
12	I have had to informally assure responsibility for work done by other professions	0.72	1.08	581 (59.5%)	206 (21.1%)	105 (10.8%)	45 (4.6%)	39 (4.0%)

*Patients were deliberately physically, emotionally, or mentally abused, frightened or put in risk.
**Patients' needs were deliberately not met or required services were not performed though the necessary resources were available.

Work intensity, opportunities for development, and familiarity of patients were no longer significant predictors of the disturbance level. The total model was significant ($p < 0.001$) and accounted for 16% of the variance (corrected R^2).

Consequences of moral distress

Burnout and health status. One-way ANOVA revealed that the mean values of the burnout score concerning the sociodemographic variables differed only within the marital status (F = 4.167, $p = 0.006$) and age groups (F = 3.898, p-value = 0.021). The marital status (F = 4.992, $p = 0.002$) and employment type groups (F = 5.250, $p = 0.022$) differed significantly in terms of health status score. Therefore, these variables were included in the corresponding linear regressions (marital status via dummy variables).

Disturbance level caused by MD was a significant predictor of burnout (research question 3). With the increase of one on the MDS, the burnout score increased by 0.251 points. Furthermore, disturbance level caused by MD significantly predicted health status. With the decrease of one on the MDS, health status increased by 0.450 (Table 5).

Table 3. Level of disturbance caused by moral distress of home-care nurses.

		Level of disturbance by moral distress, Percentage of answers over scale (*n*, %)							
		n	Mean	SD	0 (none)	1 (low)	2 (average)	3 (high)	4 (very high)
Moral distress									
1	Was unable to deliver care in keeping with my professional ethical principles due to administrative or budgetary	522	1.88	1.00	41 (7.9%)	148 (28.4%)	195 (37.4%)	110 (21.1%)	28 (5.4%)
2	Have experienced patients or family members being given "false hope," contrary to what is known about their situation	475	1.62	0.96	46 (9.7%)	191 (40.2%)	153 (32.2%)	69 (14.5%)	16 (3.4%)
3	Have carried out physician's orders for tests or treatments that I consider to be inappropriate in view of the treatment	543	1.66	0.98	59 (11.0%)	186 (34.8%)	187 (35.0%)	84 (15.7%)	18 (3.4%)
4	Have taken no action when a member of the multidisciplinary team made a medical error and failed to report it	175	1.94	1.15	17 (9.7%)	52 (29.7%)	49 (28.0%)	39 (22.3%)	18 (10.3)
5	Have had to provide care to patients for which I felt unqualified, resulting in quality of care being diminished or patients being put at risk	171	1.80	1.17	18 (10.5%)	66 (38.6%)	36 (21.1%)	34 (19.9%)	17 (9.9%)
6	Have worked with nurses or other healthcare providers I felt were lacking incompetence, resulting in quality of care being diminished or patients being put at risk	504	2.04	1.11	38 (7.5%)	135 (26.8%)	152 (30.2%)	129 (25.6%)	50 (9.9%)
7	Have taken no action in instances where signs of possible verbal or physical abuse* of patients or patient neglected**	187	1.92	1.18	22 (11.8%)	52 (27.8%)	52 (27.8%)	41 (21.9%)	20 (10.7%)
8	Have seen the quality of care and treatment suffer due to a lack of provider continuity within the treatment team	475	1.88	0.99	32 (6.7%)	141 (29.7%)	181 (38,1%)	94 (19.8%)	27 (5.7%)
9	Have worked on a nursing team with staffing that I considered inadequate	372	1.98	1.13	27 (7.3%)	119 (32.0%)	100 (26.9%)	87 (23.4%)	39 (10.5%)
10	Because of uncollegial collaboration I was unable to deliver a level of care in keeping with my professional ethic	278	1.71	0.97	21 (7.6%)	112 (40.3%)	79 (28.4%)	58 (20.9%)	8 (2.9%)
11	I was unable to prevent or alleviate the suffering of a patient due to inadequate physician's orders	501	2.28	1.12	18 (3.6%)	131 (26.1%)	124 (24.8%)	149 (29.7%)	79 (15.8%)
12	I have had to informally assure responsibility for work done by other professions	350	1.72	1.13	45 (12.9%)	122 (34.9%)	97 (27.7%)	57 (16.3%)	29 (8.3%)

Table 4. Results from multivariate linear regression analysis on relationship between job and organizational characteristics and the level of disturbance caused by moral distress.

	B	SE.	ß	t-value	*p*-value	LL	UL
(Constant)	−0.488	0.539	—	−0.906	0.365	−1.547	0.570
Work intensity	0.028	0.063	0.019	0.449	0.653	−0.095	0.152
Emotional demand	0.248	0.062	0.152	4.018	<0.001	0.127	0.369
Work-privacy conflicts	0.261	0.058	0.175	4.481	<0.001	0.147	0.375
Autonomy	−0.163	0.076	−0.086	−2.140	0.033	−0.313	−0.013
Opportunity for development	0.098	0.079	0.046	1.235	0.217	−0.058	0.254
Social support	−0.159	0.080	−0.071	−1.997	0.046	−0.316	−0.003
Patients not known before tour	−0.010	0.052	−0.006	−0.183	0.855	−0.112	0.092
Time margin with patients	−0.171	0.044	−0.146	−3.916	<0.001	−0.257	−0.085

Note. $N = 807$, B = regression coefficient; SE = standard error; R = 0.417; R2 = 0.174; R2 corrected = 0.166, $p < 0.001$; LL/UL = lower and upper limit of odds ratios (ORs) 95% confidence interval.

Sickness absence. Considering the results of the one-way ANOVA, the linear regression analysis was adjusted for employment type ($F = 16.153$, p-value <0.001), organizational tenure ($F = 3.858$, $p = 0.009$), professional experience ($F = 4.612$, p-value = 0.003), and leadership role ($F = 9.038$, $p = 0.003$). The level of disturbance caused by MD was not a significant predictor of sickness absence (research question 3) after including the relevant covariates (Online Supplement 3).

Intention to leave (job and profession). The influence of the level of disturbance caused by MD on the intention to leave the current position and profession was examined using logistic regression. The results of the correlation matrix showed that no sociodemographic variable correlated significantly ($p < 0.01$) with the intention to leave the profession. However, age, type of employment, and leadership role influenced the intention to leave the current position and were thus included in the analysis (Table 6). Despite this, the level of disturbance caused by MD had a significant influence on the intention to leave the current job and profession (research question 3). Higher scores on the disturbance level caused by MD implied significantly higher odds of reporting the intention to leave the job (odds ratio [OR] = 1.40) and profession (OR = 1.48).

Discussion

Disturbance caused by MD was predominantly experienced if HCN were unable to prevent patients from suffering due to inadequate physicians' orders, if they had to carry out physicians' orders for tests or treatments that they considered inappropriate, or if they had to work with nurses or other healthcare providers judged to be incompetent, which endangered patient safety. These morally distressing situations in home-care nursing refer to the value conflicts "welfare versus loyalty" and "welfare versus autonomy" that were identified in a qualitative study by Lauxen.[31] In other nursing fields, poor communication and working with colleagues deemed unqualified also lead to MD.[18, 19] However, both the frequency and level of disturbance of these morally distressing situations were lower in our sample of HCN than in hospital care in Switzerland.[36] One reason for this might be the higher scope of influence at work, which buffered the experience of MD and nurses' experience in home-care nursing.[21]

In our dataset, no sociodemographic variables correlated with the level of disturbance caused by MD. Other studies, conducted in other nursing fields, revealed that lower age, lower professional experience, or

Table 5. Results from multivariate linear regression analysis on relationships between the level of disturbance caused by moral distress and burnout and the health status.

	B		SE.		ß		t-Value		*p*-Value		LL		UL	
	BO	H	BO	H	BO	H	BO	H	BO	H	BO	H	BO	H
(Constant)	3.478	6.454	0.108	0.288	—	—	32.144	22.408	<0.001	<0.001	3.265	5.889	3.690	7.020
Age	−0.074	—	0.046	—	−0.056	—	−1.615	—	0.107	—	−0.164	—	0.016	—
Type of employment	—	0.449	—	0.169	—	0.098	—	2.651	—	0.008	—	0.116	—	0.782
Single	0.088	0.023	0.077	0.218	0.040	0.004	1.134	0.104	0.257	0.918	−0.064	−0.406	0.239	0.452
Divorced	0.262	−0.530	0.078	0.233	0.110	−0.086	3.347	−2.276	<0.001	0.023	0.108	−0.987	0.416	−0.073
Widowed	0.468	−1.547	0.201	0.582	0.075	−0.099	2.332	−2.656	0.020	0.008	0.074	−2.690	0.863	−0.403
Level of disturbance caused by moral distress	0.251	−0.450	0.020	0.058	0.403	−0.285	12.563	−7.717	<0.001	<0.001	0.212	−0.565	0.291	−0.336

Note. $N = 807$, Burnout (BO): R = 0.428; R2 = 0.183; R2 corrected = 0.178, $p < 0.001$; LL/UL = lower and upper limit of odds ratios (ORs) 95% confidence interval. Health status (H): R = 0.319; R2 = 0.102; R2 corrected = 0.095, $p < 0.001$; LL/UL = lower and upper limit of odds ratios (ORs) 95% confidence interval.

Table 6. Results from multivariate logistic regression analysis on relationships between the level of disturbance caused by moral distress and the intention to leave the job and to leave the profession.

	Intention to Leave the Job					Intention to Leave the Profession				
	B	SE	Wald	p	Exp(B)	B	SE	Wald	p	Exp(B)
Constant	1.816	0.393	21.330	<.001	6.150	0.445	0.077	33.740	<.001	1.560
Age	−0.284	0.127	4.985	.026	0.753					
Type of employment	−0.512	0.195	6.919	.009	0.599					
Leadership	−0.164	0.192	0.728	.393	0.849					
Level of disturbance caused by moral distress	0.337	0.060	31.333	<.001	1.401	0.395	0.056	49.120	<.001	1.484

Note. $N = 807$, all df = 1.

being a female nurse was associated with higher MD.[54,55] This might be due to the fact that they measured the frequency of morally distressing situations, but not the disturbances caused by it, or due to cultural influences.

Regarding job characteristics, high emotional demands, frequent work-life-conflicts, low social support, and low influence at work predicted higher levels of disturbance caused by MD in our sample. Low influence at work and dealing with others as social support could be identified as influencing job characteristics for nurses working in hospitals.[20,22] Possibly, work-life-conflicts play a special role in understanding MD among HCN. Due to the longer-term relationships with care recipients in private homes, nurses have to balance between proximity and distance as well as their role between private and professional life in a particular way,[30,56] which is also associated with specific emotional demands.[57]

It is surprising that high work intensity, such as experiencing time pressure during work, was not a significant predictor of the level of disturbance caused by MD in our sample. Perhaps having enough time to maneuver during the tour is an important organizational characteristic for nurses' well-being in home-care nursing.

Thus, if it is due to HCS tour planning, less space to maneuver for nurses at the patient's home resulted in higher disturbance levels caused by MD. The negative consequences of time pressure on HCN have already been proven.[58]

Knowing the patients before starting the tour and having a functional view of nursing (ie splitting nursing tasks according to the qualification level) did not seem to affect the level of disturbance caused by MD in our sample. However, other studies mentioned that a functional view of nursing is a risk factor for MD.[59] One reason for the lack of correlation could be that the other organizational characteristics investigated in this study had a much higher effect on the experience of MD.

Regarding the consequences of MD, associations with burnout have been reported in different nursing settings.[11,60] This was proved for HCN in our study. Moreover, in our study, MD was associated with a lower health status of HCN, which is in line with results from studies conducted in other nursing settings.[8,9] A career change due to the experience of MD has also been reported for nurses in other settings and for other healthcare professionals.[11,21] Although the disturbance level caused by MD correlated with the days of sickness absence, the relationship was not significant in the regression analysis after adjusting for other variables. However, associations between MD and higher sickness absence as well as poor self-reported health have been reported in the literature.[61] One reason for this discrepancy could be the widespread presentism in home-care nursing due to the nurses' high sense of responsibility towards colleagues and patients.[57]

Interventions to prevent nurses from MD and its harmful consequences already exist.[62,63] Although several interventions dealing with educational aspects (eg moral empowerment programs or moral resiliency

training), multidisciplinary rounds, debriefing or facilitated discussions, reflective exercises, specialist consultation services, and narrative writing have been evaluated, their effectiveness remains uncertain.[63] Reasons for this could be on the one hand, the fact that moral distress is a complex phenomenon with possible external confounders and on the other hand lie in methodological weaknesses of intervention studies.[62,63] Promising interventions, despite pending effectiveness tests, are reflective rounds to discuss the ethical problem, and the underlying values of the parties concerned and to identify appropriate possibilities to act.[24] Such measures can also be considered as a part of health promotion for nurses.[64] Moreover the ethical climate, the "common perception among the members of the organization, that is, a set of standards, values, and practices related to work behavior"[65] seems to play an important role in how nurses deal with ethical problems. Future studies with robust designs and relevant outcomes are required to prove the effectiveness of existing interventions or to develop new effective interventions to reduce MD considering the nursing setting. Furthermore, the role of moral resilience, a person's ability to maintain or restore integrity in response to moral adversity in home-care nursing should be investigated.[66] Further research should take into account possible new ethical problems that could arise from the use of digital technologies or artificial intelligence in home-care nursing.[67] Moreover, it is necessary to prove if additional items, considering the specifics of home-care nursing (e.g., billing for services in home-care nursing, cooperation with general practitioners), help capture the phenomenon of MD and therefore, improve the targeting of Rasch analysis.

Methodological discussion

Rasch analysis

Rasch analysis was conducted by an experienced statistician using the program RUMM2030. The item-trait interaction test showed no significant deviation from the Rasch model ($p = 0.055$). The Pearson separation index, an index typically used in Rasch analysis, had a value of 0.71. All item fit residuals were satisfactory, and the person fit residuals were within the acceptable limits.

The test for uni-dimensionality in RUMM2030 (based on t-tests) was also satisfactory. There was no differential item functioning (DIF) (tested with ANOVA) with respect to sociodemographic variables. Moreover, there was no local dependence (LD) on the items. Targeting could be improved, which means that easier items, that is, situations that trigger strong MD in home-care nursing, should be added.

Limitations

This study has some limitations. While online surveys are convenient and allow data collection independent of geographic locations,[33] a self-selection according to barriers of participating in online surveys may exist. Feedback to our email invitations suggests that congestion and lack of time intensified by the ongoing COVID-19 pandemic is making it difficult to participate in additional activities, such as scientific surveys. However, a systematic recording of the reasons for nonparticipation was not available. In further studies, responding to the disturbing aspect of MDS should be technically prevented if respondents state that they have never experienced the corresponding situation. Due to the high number of cases and the representativeness of the sample regarding gender, age, and migration background of the HCN, the results might draw a realistic picture of the value of the researched variables in German home-care nursing.

Conclusions

This study provided data on the frequency and level of disturbance caused by MD. Moreover, job and organizational characteristics were associated with the level of disturbance caused by MD, as well as possible

consequences for HCN in Germany. Although the frequency and level of disturbance caused by MD appear to be lower in home-care nursing than in acute care, the health-related outcomes are severe. Therefore, appropriate interventions must be developed and implemented. These interventions, on the one hand, should focus on human-centered design of job characteristics to reduce MD by considering emotional demands and work-life-conflicts. On the other hand, the organizational characteristics of HCS, such as sufficient time margins with patients during tours, must be considered. To achieve this, sufficient staffing should be available for the respective tours, and sickness absences should be consistently considered ahead, for instance, with Jumper Pools.

Our data showed that MD is not only an individual problem, but also an organizational and societal challenge due to its far-reaching consequences and threat to the security of care for patients. Future studies should test which interventions are most suitable for HCN to reduce and prevent MD.

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Supplemental Material

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