

Thai Translation and Psychometric Testing of the Measure of Moral Distress for Healthcare Professionals

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Abstract

Objective: This study aimed to describe the translation process and to test the psychometric properties of the Measure of Moral Distress for Healthcare Professionals (MMD-HP) among Thai nurses.

Material and Methods: The MMD-HP was administered via an electronic survey to registered nurses at 2 large tertiary care hospitals in a southern province in Thailand. The MMD-HP was translated into the Thai language using the modified Brislin's cross-cultural instrument translation method. Reliability was analyzed using Cronbach's alpha coefficient and validity was assessed using exploratory factor analysis with promax rotation.

Results: In total, 448 surveys were included in the final analysis. A three-factor structure was understandable and appropriate. The 3 factors were labeled as system-level, team-level, and patient/family-level root causes of moral distress. The overall internal consistency of the MMD-HP was 0.94; with 0.89, 0.89, and 0.85 for the system-level, team-level, and patient/family-level root causes, respectively.

Conclusion: Our analysis found that the 3-factor solutions of the Thai version of the MMD-HP was most appropriate in our context. Our study found it to be a reliable, valid, and useful tool to measure moral distress among nurses in the Thai context. It is an appropriate tool to be used cross-culturally.

Keywords: measurement, moral distress, reliability, Thailand, translation, validity

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Introduction

Moral distress is a significant problem facing healthcare professionals as it is associated with consequences such as burnout¹⁻³, withdrawal from the moral dimensions of patient care, or leaving the profession altogether⁴⁻⁸. Moral distress was first defined by Jameton⁹ as a phenomenon in which one knows the right action to take but is constrained from taking ethically appropriate action. Epstein et al⁵. recently highlighted five key components that have made the concept more concrete, which include “complicity in wrongdoing, lacking of voice, wrongdoing associated with professional (not personal) values, repeated experiences, and three levels of root causes (patient, unit, system)”⁵. “Providing aggressive treatment for patients unlikely to survive regardless of treatment is often identified as the most important cause of moral distress among nurses and physicians^{3,5,8,10-12}, and is a good example of the five key elements of moral distress. In these instances, healthcare professionals recognize unnecessary suffering and are unable to adequately address it and hence feel complicit in wrongdoing and lacking the power to change the situation. Further, these situations occur at the patient level but reflect unit-level problems such as poor communication and collaboration within the healthcare team, or system-level problems such as poor policy guidance regarding end-of-life decision-making⁵. For example, a mixed-methods study on moral distress among Thai nurses reported that nurses expressed a sense of powerlessness when compelled to follow a family member’s or a doctor’s decision that they felt caused suffering or prolonged death. They believed this to be ethically wrong and to contradict the standard of end-of-life care, and that insitutional hierarchies prevented them from having their voices heard¹³.

Although moral distress has been studied internationally, most studies have been in Western countries and only one study has been done in Thailand. Although

more than 98% of Thai citizens have access to primary and advanced healthcare through a universal coverage scheme^{14,15}, Thai nurses face numerous challenges. For example, there is currently a nursing shortage, and job dissatisfaction is becoming problematic¹⁶⁻¹⁸. In addition, as in other countries, traditional hierarchies that impede healthcare professionals from contributing to important discussions about treatment decisions or goals of care may put Thai nurses at risk of experiencing moral distress.

To help understand the magnitude of moral distress and to identify the most common causes of moral distress among healthcare professionals or within a healthcare setting, an important foundation for the development of interventions to prevent and mitigate moral distress, a valid and reliable way to measure this in the Thai language is needed. The Measure of Moral Distress for Healthcare Professionals (MMD-HP), a newly revised measure, was developed in English⁵ and was selected to be translated and tested for its psychometric properties because the MMD-HP was intensively revised according to the recent literature in both Western and non-western cultures. It includes items addressing organization- and team-level root causes of moral distress and could be a reliable and valid measure of moral distress for Thai nurses. Therefore, this study was undertaken to describe the translation process and psychometric testing of the MMD-HP among Thai nurses.

Evolution of the measure of moral distress

The moral distress scale (MDS) was the first widely used instrument for measuring moral distress¹⁹. The challenges in using the MDS include its length (38 items), its intensive care (ICU) and nursing focus, and items that no longer reflect current practice (e.g., engaging families in the discussion about organ donation). Later, Hamric and Blackhall²⁰ adapted the MDS in their study by shortening the scale to 21 items, however, this adaptation was narrowly

focused on end-of-life care in ICU settings and it lacked utility for non-ICU settings. The MDS was revised in 2012 to the Moral Distress Scale-Revised (MDS-R) which consists of 21 items and broadens applicability beyond critical care and beyond nursing to all patient care settings and healthcare professionals⁶. The MDS-R has demonstrated good reliability with Cronbach's alpha coefficients of 0.89 for nurses and 0.88 for various healthcare professional groups and its construct validity was confirmed using hypotheses testing⁶. The MDS-R has successfully replaced the MDS and has been widely used internationally²¹⁻²⁴. Five years later, additional root causes of moral distress have been identified via additional research^{8,25,26}. Additionally, the MDS-R had 6 versions, adult and pediatric versions for nurses, physicians, and other providers which detracted from its ease of use. One standard measure would be easier to use in multidisciplinary studies than six versions of the MDS-R. Therefore, the MDS-R was extensively revised again in 2017 and named as the (MMD-HP)⁵.

The MMD-HP consists of 27 items and aims to measure moral distress among healthcare professions in any critical, acute, or long-term acute care setting. The MMD-HP uses a five-level Likert-style format scored by participants in terms of frequency (how often the situation arises) and level of distress (how distressing the situation is when it arises). Both scales range from 0 (never or none) to 4 (very frequently or very distressing). A composite score is computed by multiplying the frequency score by the distress score of each item, creating a new variable (named "fxd") which ranges from 0 to 16. Next, an overall score is obtained by summing each item's fxd score, with scores ranging from 0 to 432. Higher scores indicate higher levels of moral distress. The MMD-HP's reliability was 0.93 for all participants combined⁵. Construct validity testing showed statistically significant results on all hypotheses and indicated a four-factor structure, reflective of patient, unit, and system levels of moral distress⁵.

Material and Methods

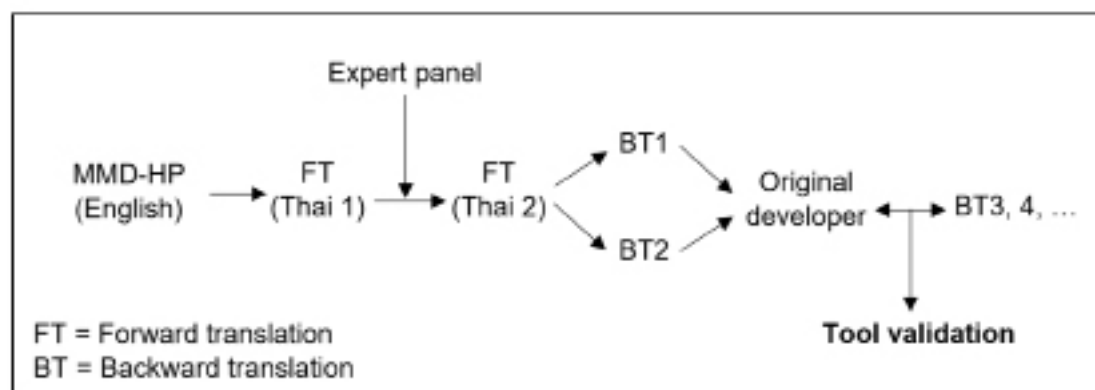
Study design

This was a two-phase study: translation of the MMD-HP from English to Thai, and psychometric evaluation of the Thai version of the MMD-HP.

Phase 1 instrument translation procedure:

We used a modified version of Brislin's²⁷ cross-cultural instrument translation method, maintaining the good practice of employing at least two competent bilingual translators, one to translate forward and another to translate back to the original language without knowledge about the research topic or having seen the original text. This modified version consisted of a 5-step process in which bilingual expert panel discussion was added into Brislin's original model.

In this study, the translation process involved seven bilingual translators and one native English speaker (Figure 1). Forward translation was done by the PI (bilingual, native Thai speaker). A bilingual expert panel including one nursing ethics professor, one scholar with experience in research instrument development, and one advanced practice nurse (APN) reviewed the initial translated version. Group discussion with the translator (PI) led to arrival at consensus regarding the most accurate and easily understood terms. The cultural appropriateness and relevance of each item to the Thai context was also considered. Then, two bilingual native Thai speakers who were not familiar with the MMD-HP independently performed back-translation from Thai to English. A native English speaker, an American professor and author of the MMD-HP, compared the original MMD-HP with the back-translated English versions. Any errors in meaning were retranslated and again blindly back-translated by another bilingual translator. In this stage, five items were back-translated again by the seventh bilingual translator. Finally, the Thai language MMD-HP was ready to be psychometrically tested.



MMD-HP=measure of moral distress for healthcare professionals

Figure 1 Modified Brislin's translation model for the MMD-HP.

Phase 2 reliability and validity testing: Construct validity was done by exploratory factor analysis (EFA) in order to determine the dimensions of the scale. In addition, internal consistency reliability was assessed for total scale and sub-dimensions by computing Cronbach's alpha coefficients.

Sample and setting

The translated MMD-HP was then distributed via Qualtrics, paper flyers, and study invitation cards to approximately 1,000 Thai registered nurses who had worked in inpatient units for at least a year at two large tertiary care hospitals in a southern province in Thailand. The two large tertiary care hospitals were selected because these settings are quaternary care centers that use high-tech equipment to save the lives of critically ill people. The head nurse and nurse administrator were excluded since they do not provide direct care to patients. Minimum sample size was calculated based on the expectations for exploratory factor analysis, that is, the communalities and the number of strong factor loadings²⁸. Fabrigar and Wegener²⁸ suggest planning on moderate conditions in which communalities range from **0.40 to 0.70** and there are at least three strong loadings per factor, which implies a minimum sample size of 200.

Ethical considerations

Ethical approval for this study was obtained from the Institutional Review Boards at the University of Virginia (IRB-SHR study: 20928) and the two hospitals in Thailand (HY 79/2561 and REC.61-261-19-6). All participants were informed about the project and provided informed consent by completing and submitting all the questionnaires. Participants were informed that participation in the study was voluntary. Their answers would be anonymous and confidential and would not be used for any other purpose than this study.

Data analysis

SPSS Version 23 was used for the analyses. Four hundred sixty-two participants completed the survey. Assumptions of normality, univariate outliers, and multivariate outliers were tested. Log 10 transformation was conducted and 14 responses were removed in order to maintain those assumptions. Finally, 448 cases were used for data analysis.

The reliabilities of the MMD-HP and its sub-dimensions were analyzed using a Cronbach's alpha coefficient with an acceptable coefficient of ≥ 0.70 for the new instrument²⁹. Dimensionality of the MMD-HP was assessed

using exploratory factor analysis (EFA). Both varimax and promax rotations were considered in an attempt to uncover a simple structure. The number of relevant factors was determined based on the following criteria: 1) satisfied Kaiser's criterion of eigenvalues ≥ 1 ³⁰, 2) met Cattell's minimum scree requirement³¹, 3) satisfied Horn's parallel analysis³², 4) appreciable percentage of total score variance of $\geq 50\%$, 5) each rotated factor included at least two appreciable factor loadings of $\geq .30$, 6) no more than 5% of the items loaded on more than one factor; and 7) resultant dimensions demonstrated good internal consistency³³.

Results

Sample characteristics

The dataset consisted of 448 completed responses from nurses working with both critical and non-critical patients on adult and pediatric wards. Most participants were female (n=435, 97.1%). In total, 90.2% of the participants had a bachelor degree (n=404) and 9.8% had a master degree (n=44). Participant ages ranged from 22 to 58 years (mean=34.01, S.D.=8.53) and the average years working in the current setting ranged from 1 to 34 years (mean=9.71, S.D.=7.95). Most participants were working in acute care units (n=243, 54.2%), the remainder were working in ICUs (n=161, 35.9%) or intermediate units (n=44, 9.8%). More participants were providers for adult patients (n=375, 83.7%) than for pediatric patients (n=77, 16.3%).

Exploratory factor analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.948, above the commonly recommended value of 0.6, and Bartlett's test of sphericity was significant ($\chi^2_{351} = 6396.564$, p-value<0.001), confirming sample adequacy, suitability of data for structure detection, and appropriateness for EFA. A preliminary step, an EFA through principal component (PC) extraction, revealed the presence of four factors with eigen values greater

than 1.0 which accounted for approximately 58% of the total observed score variance. However, a scree plot and Horn's parallel analysis suggested a 3 factor solution. PC extraction revealed that the 3-factor solution accounted for approximately 54% of the total observed score variance. Additionally, interpretation of the 3-factor solution was more logical than of the 4-factor solution. For these reasons the extraction process was fixed at 3 factors. Examination of the component matrix of an unrotated PC extraction failed to reveal a clear simple structure pattern because all variables highly loaded on the first factor. As a result, both varimax (orthogonal) and promax (non-orthogonal) rotation were conducted. The factor correlation matrix revealed a strong correlation between factors, ranging from 0.60 to 0.65, supporting the use of a non-orthogonal rotation (Table 1). In addition, promax rotation provided a clearer structure compared to the others. The first factor included system-level causes of moral distress and consisted of 7 variables. The second factor was team-level causes and consisted of 12 variables, while the last 8 variables were patient/family level causes (Table 2).

Table 1 Correlation between MMD-HP factors

Factors	1	2	3	Cronbach's alpha
1	–			0.897
2	0.46	–		0.896
3	0.603	0.618	–	0.849

MMD-HP=Measure of Moral Distress for Healthcare Professionals

Reliability

Internal reliability estimates were strong for the overall MMD-HP and for each dimension, system-level, team-level, and patient/family-level. The overall MMD-HP demonstrated a satisfactory internal consistency with a cronbach's α of 0.944, coefficients of 0.897, 0.896 and 0.849 for system, team and patient/family levels, respectively.

Table 2 Exploratory factor loadings of items in the MMD-HP

No.	Item	Factors		
		1	2	3
16	Be required to care for more patients than I can safely care for.	0.962	-0.046	-0.268
23	Feel required to overemphasize tasks and productivity or quality measures at the expense of patient care.	0.959	-0.229	0.061
17	Experience compromised patient care due to lack of resources/equipment/bed capacity.	0.863	-0.053	-0.063
19	Have excessive documentation requirements that compromise patient care.	0.798	-0.089	0.090
18	Experience lack of administrative action or support for a problem that is compromising patient care.	0.777	0.159	-0.091
24	Be required to care for patients who have unclear or inconsistent treatment plans or who lack goals of care.	0.595	0.044	0.226
22	Be required to work with abusive patients/family members who are compromising quality of care.	0.530	0.066	0.161
21	Feel unsafe/bullied amongst my own colleagues.	-0.001	0.909	-0.287
20	Fear retribution if I speak up.	-0.044	0.900	-0.145
27	Work with team members who do not treat vulnerable or stigmatized patients with dignity and respect.	-0.029	0.867	-0.133
6	Be pressured to avoid taking action when I learn that a physician, nurse, or other team colleague has made a medical error and does not report it.	-0.285	0.710	0.164
11	Witness a violation of a standard of practice or a code of ethics and not feel sufficiently supported to report the violation.	-0.162	0.651	0.288
7	Be required to care for patients whom I do not feel qualified to care for.	0.019	0.556	-0.033
26	Participate on a team that gives inconsistent messages to a patient/family.	0.225	0.527	-0.009
25	Work within power hierarchies in teams, units, and my institution that compromise patient care.	0.342	0.424	0.024
12	Participate in care that I do not agree with, but do so because of fears of litigation.	0.028	0.423	0.326
14	Witness low quality of patient care due to poor team communication.	0.227	0.420	0.170
9	Watch patient care suffer because of a lack of provider continuity.	0.227	0.376	0.197
13	Be required to work with other healthcare team members who are not as competent as patient care requires.	0.194	0.313	0.296
2	Follow the family's insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient.	-0.101	-0.213	0.979
5	Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.	-0.097	-0.163	0.899
3	Feel pressured to order or carry out orders for what I consider to be unnecessary or inappropriate tests and treatments.	-0.023	-0.021	0.813
1	Witness healthcare providers giving "false hope" to a patient or family.	-0.037	0.079	0.625
8	Participate in care that causes unnecessary suffering or does not adequately relieve pain or symptoms.	0.189	0.025	0.565
10	Follow a physician's or family member's request not to discuss the patient's prognosis with the patient/family.	0.104	0.129	0.464
15	Feel pressured to ignore situations in which patients have not been given adequate information to ensure informed consent.	0.258	0.226	0.348
4	Be unable to provide optimal care due to pressures from administrators or insurers to reduce costs.	0.118	0.289	0.313
Eigenvalues		11.13	1.79	1.71
Variance		41.23	6.63	6.33
Cumulative variance		41.23	47.85	54.18

MMD-HP=Measure of Moral Distress for Healthcare Professionals

Discussion

Over the past 10 years, the phenomenon of moral distress has received increased interest from researchers and clinicians in nursing and other healthcare professions and in settings outside critical care. Measuring moral distress levels among various healthcare professionals and in varying settings is important, especially as interventions to mitigate moral distress are being developed and tested. This study is the first to translate the newly revised MMD-HP to Thai and to test the psychometric properties of the Thai language version MMD-HP in Thai nurses.

Our EFA showed that the Thai version of the MMD-HP is a multidimensional construct among nurses, with a three-factor solution fitting the data best. A multidimensional construct is in line with several previous studies that used the MDS-R.^{23,34,35} One previous study found that moral distress was unidimensional³⁶.

The three-factor structure of the Thai version MMD-HP represents root causes of moral distress at the system level, team level, and patient/family level. These three levels of root causes of moral distress were proposed by Hamric and Epstein³⁷. In a study on moral distress consultation in an academic medical center setting, Hamric and Epstein³⁷ identified that although consults were generally initiated by a specific patient case, the root causes underpinning the situations often involved unit- or organizational-level problems. In addition, the items loaded in each factor of the present study were generally parallel with the original study which tested the MMD-HP among American healthcare providers in the US. Although the study in the US indicated a four-factor structure, these were mainly grounded in system, team, and patient level root causes⁵.

Of the three factors, system-level root causes yielded the highest dimensional mean even though this dimension consisted of the fewest items. Most items in this factor are new items to the MMD-HP and most align

with Factor 1 from the Epstein et al. study⁵. Factor 2, team-level root causes, included situations that occurred regarding interactions within the team or as a result of personal threat by a team member. In the Epstein et al. study⁵, these were two separate factors. Poor team communication, working with incompetent colleagues, and lack of provider continuity were commonly reported as causes of moral distress in several studies that used the MDS-R as its measure^{4,21,36-39}. Communication between nurses and physicians is considered a principal part of the information flow in healthcare and a growing body of evidence suggests that inefficient or poor communication impacts patient outcomes and leads to moral distress.⁴⁰⁻⁴² Hierarchies within teams are common and necessary in healthcare settings, yet, if they inhibit information sharing and are dismissive of certain voices, patient care can suffer and moral distress can occur. Epstein et al.⁵ reported that in the MMD-HP, items such as feeling unsafe/bullied, fearing retribution for speaking up, participating in care because of fear of litigation, and being pressured to stay silent about a medical error or ethical violation were the personal threats from other team members. These threats aligned with qualitative reports from Thai nurses about causes of moral distress, such as feeling pressured to participate in care they knew was inappropriate for fear of punishment¹³.

The third factor was patient/family level root causes. Several previous studies found that situations of prolonged aggressive treatment for dying patients and unnecessary or inappropriate treatments tended to be significant causes of moral distress among nurses and other healthcare providers^{4,5,7,10,21,38,39}. Culture may be a factor causing moral distress at the patient or family level. The southern part of Thailand where this study was conducted is predominantly Muslim. Religious beliefs influence all aspects of life, including nursing and healthcare⁴³. For example, studies have reported that Islamic patients and

families made decisions about care and treatments based on religious beliefs^{44,45}. They decided to withdraw the treatments because they believe that after death they can be with God. In some cases, they decided to continue the treatments because euthanasia is a sin. They also believe that whatever happens in their lives is God's will⁸. Within the Muslim faith, there are at least three branches that have different beliefs on health and illness. Among Thai Buddhists, patients and their families may decide to forgo life-sustaining treatments because they believe that prolonging death is a sin¹³. Therefore, caring for patients with diverse cultures and beliefs might be a precipitating cause of moral distress in Thai nurses.

The reliability coefficients of the MMD-HP in the present study showed that the instrument and sub-dimensions have good reliability among Thai nurses. Thus, the Thai language MMD-HP appears to be a valid and reliable instrument to measure moral distress among Thai nurses.

Conclusions

The MMD-HP was systematically translated into the Thai language with the consideration of language and cultural appropriateness using Brislin's cross-cultural instrument translation method. A strong three-factor solution was obtained and the items loaded on each factor were similar to the primary study. The findings of this study support the use of the MMD-HP as an appropriate tool for cross-cultural use. The scale demonstrates a reliable, valid, and useful tool to measure moral distress among nurses in the Thai context. Although this study evaluated the MMD-HP among nurses, previous studies have tested the instrument among other healthcare professionals (e.g., doctors, physical therapists) with good reliability. Thus, the MMD-HP appears to be a useful measure for researchers, healthcare organizations, and others interested in evaluating moral distress among healthcare professionals. Further

testing of the psychometric properties of the Thai language MMD-HP in other Thai healthcare professionals is an important next step.

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Conflict of interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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