Development of Thai Moral Integrity Scale in Professional Nurses

Jinda Nunthawong, Jintana Yunibhand, Waraporn Chaiyawat*

Abstract : Moral integrity is fundamental to morality that represents the ability of nurses to face a moral/ethical situation and provide direction for nursing practice. Moral integrity assessment is necessary for nurses. In Thailand the Code of Professional Conduct and Registered Nurses Competence in Ethics is a guideline for moral integrity and ethical standard. The aim of this study was to develop the Thai Moral Integrity Scale and to test its psychometric properties. The construct definition and content domains of this instrument were developed through intensive literature reviews and testing of its content validity by five experts.

The Moral Integrity Scale consists of 27 items with a Likert-type scale. The result of testing with 502 professional nurses by using exploratory factor analysis indicated that there were four dimensions that can explain the moral integrity in professional nurses that consists of: (1) express intention to follow the Thai Code, (2) adhere to and follow the Thai Code, (3) continue to follow the Thai Code, and (4) show courage to act according to the Thai Code's tenets. All these dimensions can explain 55.98% of the total variance. The construct validity was tested by using confirmatory factor analysis when tested with professional nurses. The results indicated that the measurement model had good fit with the data. The Cronbach's alpha coefficient reliability of the total scale was .92.

The results indicated acceptable validity and reliability of the final version of the Thai Moral Integrity Scale that provides an alternative way to assess moral integrity in Thai professional nurses, especially for new graduates to assess their moral integrity in nursing practice representing highest levels of quality of care.

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Introduction

Moral integrity (MI) represents thoughts, feelings, and actions; it is a key ingredient of professional practice, and enables registered nurses (RNs) to perform good nursing care; it represents both the profession's and RNs' beliefs and values. are expected to treat individual patients in health and illness with dignity and respect, thus their actions include shielding people from hurt, while giving consideration that is beneficial to them.[1, 2, 3, 4]

There are a number of tools available to measure MI such as Defining Issues Test (DIT), which measures an aspect of behavior[5], MISSA and Moral Integrity Survey (MIS), focusing on self-concept[6], Moral Judgment Test (MJT)[7], and Trust in Nurses.[8] They are all utilized in instruction and spotlight moral opinion and behavior. As well, it has been noted that some of the tools lack appropriate psychometric properties to adequately evaluate moral integrity.[6] Moreover, the majority of the tests were developed in western countries and there are no reports that they represent perspectives/values in countries other than the west; nor that they are oriented toward professional practice. In Thailand, Jormsri[11] developed the Moral Competence Scale (MCS) to assess nursing competence with three dimensions of affective, cognitive, and behavioral. However, this may not represent MI in as conceived here.

Appraisal of MI in requires considerations and needs for purposes of assuring high quality nursing practice, as well as for recruitment and orientation in the clinical field. MI assessment could help the RN to understand nurse's thinking, feeling, and actions when they are giving nursing care to patients and are faced with moral situations. This tool is developed to describe the construct of MI in nursing. Moreover, evaluation of MI in can help stimulate and confirm the beliefs of nurses to perform MI in order to continue to give the best nursing care for patients.

Review of Literature

The literature review was carried out using the CINAHL, Scopus, and Pub Med databases, for the period from 1996 to, 2018. The inquiry terms were utilized MI, integrity, MI in nurses, assess/measure MI and assess/evaluate MI in. The main focus on MI in the business, social science, psychology, philosophy, and education fields seem to have been specific to their disciplines, and have generally used a qualitative research approach in the study of MI.

At the outset, Carter's notion of the construct of moral integrity was the inspiration.[9] The theoretical concept that defined the construct consists of three dimensions as follows: (1) Discernment: refers to the capacity to consider and weigh the belief to assess what is good and appropriate from an ethical standpoint: (2) Consistent act: refers to the capacity to follow up on those convictions over time and circumstance: (3) Public Justification: refers to the capacity of persons to be certain about their belief, doing right and sharing their belief with others publicly. Olson[6] developed the MIS from Carter's construct of MI to assess relationships between MI, psychological well-being, and anxiety in general populations based on Christianity and western culture. This may not be reflective of the phenomena in the nursing field, nor of the Thai culture.

In the field of nursing codes of ethics[23] are the primary values and ethical standards that help nurses to provide their nursing care. In Thailand there is the Code of Professional Conduct and Registered Nurses Competency in Ethics (the Thai Code), as a guideline that represents the scope of practice for.[10-19] Ethical guidelines for nurses generally articulate conduct toward patients. In the case of this Thai Code, it explicates twelve elements that nurses have to follow; these are based on the idea that nurses must not practice without considering the security and safety of patients; nursing care needs to be based on nursing competency both in ethics and the knowledge to perform nursing care with a scientific base, as well as kindness and compassion.[10, 20, 23]

The Thai Code is a set of values that reflects the attributes of MI in this study. Identifying an empirical index of MI is necessary for the profession to capture the unique nature of the idea of MI in terms of thinking, feeling, and actions specific to the nursing field. MI was defined as the presence of a well-developed inner conscience, the ability to maintain the belief in themselves, be able to express beliefs felt strongly, and act according to those

convictions. This ability is said to signify the superlative level of moral growth which is expected in every nurse.[21, 22, 24]

As indicated by the intensive literature review of MI in this study, MI refers to the ability of nurses to adhere to the Thai Code to give the best nursing consideration for the patients, expressing the guidance and intent of the Thai Code, and continue giving nursing care to the patients according to that Code, even when other people disagree or are difficult. This definition guided the framework for the development of the TMIS to assess MI. The aim of this study was to develop a tool to assess MI, and ascertain the tool's psychometric properties.

Methods

The development process of the TMIS consisted of two phases in scale development and psychometric determination.[25-29, 31]

Sample and Setting

The information was collected who are working in four types of the selected hospitals which are classified by the Ministry of Public Health, in Thailand by multi-stage sampling. These consisted of tertiary, secondary, primary, and specialized hospitals. The criteria for the samples were that who received a bachelor's degree in nursing, were working in clinical practice, and were willing to take part in this study. The details on the participants are presented in each step of the scale development process.[30]

Ethical Considerations

The study was approved by the Ethical Committee on Human Rights Related to Research Involving Human Subjects, from the tertiary hospital (ID076059), the secondary hospital (PT/0032.203.3/2813), the primary hospital (PPHO-REC2561/006), and the specialized hospital (ID156/2561). All participants gave informed consent; participant anonymity and rights were assured throughout the study. The results of this study are reported as a whole.

Data Collection

The researcher distributed the questionnaire to the nurses. The participants received data about the aim, benefits, and risks of this study and completed a demographic information sheet, informed consent sheet, and the TMIS. After receiving the completed questionnaires, the researcher checked for missing data from the demographic sheet that were less than 5%. There were no missing data in consent form, and TMIS. Data collection occurred from March to May 2018.

The Process of Instrument Development

Phase I: Scale Construction Phase

Step 1: Construct definition: Following intensive literature reviews and Carter's definition, the construct of MI was defined as comprising three dimensions that consist of discernment, consistent act, and public justification. This dimensions led to developing the conceptual framework of MI.

Step 2: Generating item pool: this procedure relied on the Thai Code and three dimensions of MI were used as the framework and scope of Rn practice by the Thailand Nursing & Midwifery Council. The preliminary item pool of 54 items was created to reflect all elements of MI. The first domain consists of 23 items, the second domain consist of 26 items, and the third domain consist of 11 items.

Step 3: Defining the format for measurement: This process utilized a Likert-type scale with five-point scaling: 5 strongly agree, 4 agree, 3 not sure, 2 disagree, and 1 strongly disagree.

Step 4: Determining content validity: Five experts with expertise and experience in clinical practice, ethics, research and measurement were

invited to evaluate the content validity of the items. TMIS was revised based on the experts' comments. Some items required revision for clarity. The content validity index for items: I-CVI of 54 items ranged from .6 to 1.0, the items that had I-CVI less than .80 were deleted. The experts recommended the final version with 27 items was retained.

Step 5: Assessing the clarity and readability of the tool: cognitive interviewing was used in this process. The TMIS was considered appropriate and clear in terms of wording and comprehension of the language. Based on ten from one hospital, the clarity of the wording, length of TMIS were under standable and appropriate.

Step 6: Conducting preliminary item tryouts, the TMIS was tested to assess internal consistency utilizing Cronbach's alpha coefficient. This process involved 30 nurses at a university hospital with the same criteria as the study population. The item means ranged from 2.5 to 4.50. Cronbach's Alpha coefficient ranged from .80 to .90. The total for the scales was .90, so 27 items were preserved.

Phase II: Psychometric testing phase

Psychometric testing composed of construct validity and reliability. Construct validity testing used both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to confirm the dimensions of the TMIS.

Step 7: Construct validity testing

7.1 EFA

The aim for utilizing EFA in this study was to explore and identify data about the important factors that represent the MI. Items that were related to the factors would be retained. Multi-stage sampling process was used to invite the working in the selected hospitals in Thailand. According to Comrey and MacCallium sample size to conduct factor analysis is adequate at 500 nurses, allowing for attrition.[25, 27, 32, 39] Participants were recruited at the same time and divided into two groups to perform EFA with one half, and to perform CFA with the second half, along with reliability testing. In the EFA process, 575 questionnaires were distributed, and 502 were returned, 350 from tertiary care, 60 from secondary care, 58 from primary care, and 34 from special care hospitals.[34]

The assumptions of EFA were tested. The process consisted of four steps. First, assumption test for Bartlett's test of sphericity was significant (χ^2 = 6610.91, p <.01) and Kaiser-Meyer-Olkin (KMO) value was .95, that is considered to be sufficient for the relationship between the items. It was thought that the data were appropriate for EFA. Second, evaluating the result of EFA: The items that had eigenvalues more than .3 were retained. Third, identify the dimension: the criteria used to select the factor were eigenvalues greater than one, characteristics of scree plot, and cumulative percentage of variance explained was greater than 50-60%.[33-35] There were four factors (express intention to follow the Thai Code, adhere to and follow the Thai Code, continue to follow the Thai Code, and show courage to act according to the Thai Code's tenets) with Eigen values more than 1.0 that explained 55.98% of TMIS, factor loading ranged from .39 to .78. Those with high loadings on each factor were grouped together (Table 2).

7.2 CFA

CFA was utilized to evaluate the factors which explain the relationship between factors. It is used to test whether the measured variable represents the number of factors and is utilized to affirm or disconfirm the measurement theory. The final draft of TMIS comprising 27 items was tested in this phase. Assumption test needs to test the same as with EFA. Bartlett's test of sphericity was significant (χ^2 = 5358.27, p <.01) and Kaiser-Meyer-Olkin (KMO) equal to .94. The correlation coefficients ranged from .30 to .69. It demonstrated that the correlation matrix was not an identity matrix and was appropriate for leading to CFA.

Multi-stage sampling process was used to invite the participants for CFA were the same as with EFA process. The group was split into two and half the sample was used for EFA and other half for CFA. The questionnaires were returned 502 case from

Table 2 The Result of EFA of TMIS and Reliability of Each Factor (n=502)

Items	Contents	Factor loadings				Commonalities
		Factor 1	Factor 2	Factor 3	Factor 4	
1	I consider honesty my first priority when providing nursing care.		.77			.665
2	I am determined to always tell the service recipients the truth.		.70			.629
3	I am ready to be responsible for the service recipients for whom I provide nursing care no matter what happens.		.75			.650
4	The first thing that comes to my mind when providing nursing care is following the ethics of nursing care.		.73			.691
5	I consider service to recipients and their care recipients my first priority.	.40				.372
6	I always check all the equipment required for nursing care and go over the procedures of providing standard nursing care.	.65				.499
7	I always think carefully before deciding which equipment or things should be used for providing nursing care for the service recipients to save resources and for optimum benefits.	.63				.498
8	When I make a promise to the service recipients, I always keep it.	.49				.454
9	I consider fairness my first priority when providing nursing care.	.58				.494
10	I consider the service for the recipients' benefit my first priority when providing nursing care.	.64				.561
11	I am ready to sacrifice my own benefits for the benefits of service recipients.	.47				.463
12	I always observe the rules set by my organization.	.58				.502
13	I always take nursing ethics into consideration before making decisions to provide nursing care so that the service recipients can have quality nursing care.	.62				.585
14	I always prioritize the privacy of the service recipients and their relatives.	.62				.540
15	I am determined not to put service to recipients in a situation that can harm them when providing nursing care.	.56				.534

Table 2 The Result of EFA of TMIS and Reliability of Each Factor (n=502) (Con't)

Items	Contents	Factor loadings				Commonalities
		Factor 1	Factor 2	Factor 3	Factor 4	
16	When providing nursing care that causes an uncomfortable situation or pain to the service recipients, I do my best to relieve such feeling or pain.	.48				.567
17	I always follow up with the nursing care plans that have been provided for service recipients.			.49		.503
18	I insist on strictly following the rules even though some are relaxed or waived.			.61		.468
19	I insist on providing nursing care according to nursing ethics guidelines even if it is difficult to achieve.			.74		.517
20	I insist on achieving my nursing care plans according to a professional standards and values.			.69		.517
21	I provide proper nursing care plans for service recipients according to their rights.			.64		.692
22	I am confident that the nursing care plans that I have provided to service recipients since I started working at my organization follow the professional standards and values which I always adhere to.			.54		.630
23	I always tell service recipients the truth even if it may hurts their feelings.				.68	.600
24	I am willing to let my colleagues receive praise or a reward from the assignment that was accomplished mostly by me.				.50	.697
25	I will tell service recipients the truth even if some are against this.				.78	.622
26	When facing a difficult situation in providing nursing care, I am willing to be criticized by the public rather than not strictly follow the nursing ethics that I always adhere to.				.60	.669
27	I am willing to accept negative attitudes from those who do not agree with me when I want to provide nursing care according to the nursing ethics to which I always adhere to with the service recipients.				.56	.493
	Variance Explained (%)	18.13	11.23	16.05	10.57	
	Eigenvalue	10.75	1.21	2.13	1.03	
	Number of items in each factor	12	4	6	5	
	Cronbach's Alpha of each item	.86	.80	.83	.78	

tertiary care (350), secondary care (60), primary care (59), and special care hospital (33). The goodness of fit showed the following the chi-square goodness of fit (non-significant), the ratio of the chi-square/degree of freedom (< 2), the goodness of fit index (GFI) (>.90), the adjusted goodness of fit index (AGFI) (>.90), the standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA) values (<.05), and the comparative fit index (CFI) and non-normed fit index (NNFI) (>.95).[35] The indicator loadings for statistical significance were evaluated by t-value (+1.96 for the .05 significance level). The squared multiple correlations (R^2) or the extracted variance was utilized to verify the reliability of the item with criteria equal to .50 or greater[35] (Table 3).

Table 3 The Results of the CFA(1st order) of the TMIS (n=502)

Items	Factor loadings			R^2	Factor scores regression
	B	SE	t		
1	.31	.02	13.05	.39	.10
2	.43	.03	15.06	.58	.68
3	.38	.03	11.92	.50	.37
4	.41	.03	13.58	.68	.95
5	.33	.02	13.52	.34	.18
6	.32	.02	13.71	.35	.21
7	.29	.02	12.75	.31	.09
8	.35	.03	11.67	.27	.12
9	.31	.02	12.77	.31	.14
10	.33	.03	13.21	.34	.12
11	.36	.03	13.67	.35	.17
12	.32	.03	11.83	.27	.06
13	.37	.02	16.99	.49	.33
14	.37	.02	16.32	.45	.23
15	.31	.02	13.02	.32	.19
16	.26	.02	11.96	.27	.13
17	.33	.02	13.31	.33	.21
18	.38	.03	13.99	.38	.21
19	.39	.02	17.37	.51	.22
20	.43	.03	16.83	.49	.25
21	.41	.03	16.14	.45	.30
22	.40	.02	17.83	.52	.33
23	.42	.05	8.96	.29	.23
24	.35	.03	10.12	.25	.14
25	.44	.03	14.11	.37	.11
26	.57	.03	21.77	.75	.74
27	.48	.03	18.76	.59	.38

χ^2 = 266.32; df = 242; p = .136; GFI = 96; AGFI = .94; CFI = 1.0; RMSEA = .014.

Note: The number of items are the same as the number of items in Table 2.

Step 8: Reliability testing aims to test the reliability of the TMIS by testing internal consistency. A Cronbach's alpha for each dimension ranged from .78 to .86, and for the entire instrument was .92; the accepted norm is .70 or higher for a new scale.[26, 35] The process of developing the TMIS was presented in Figure 1.

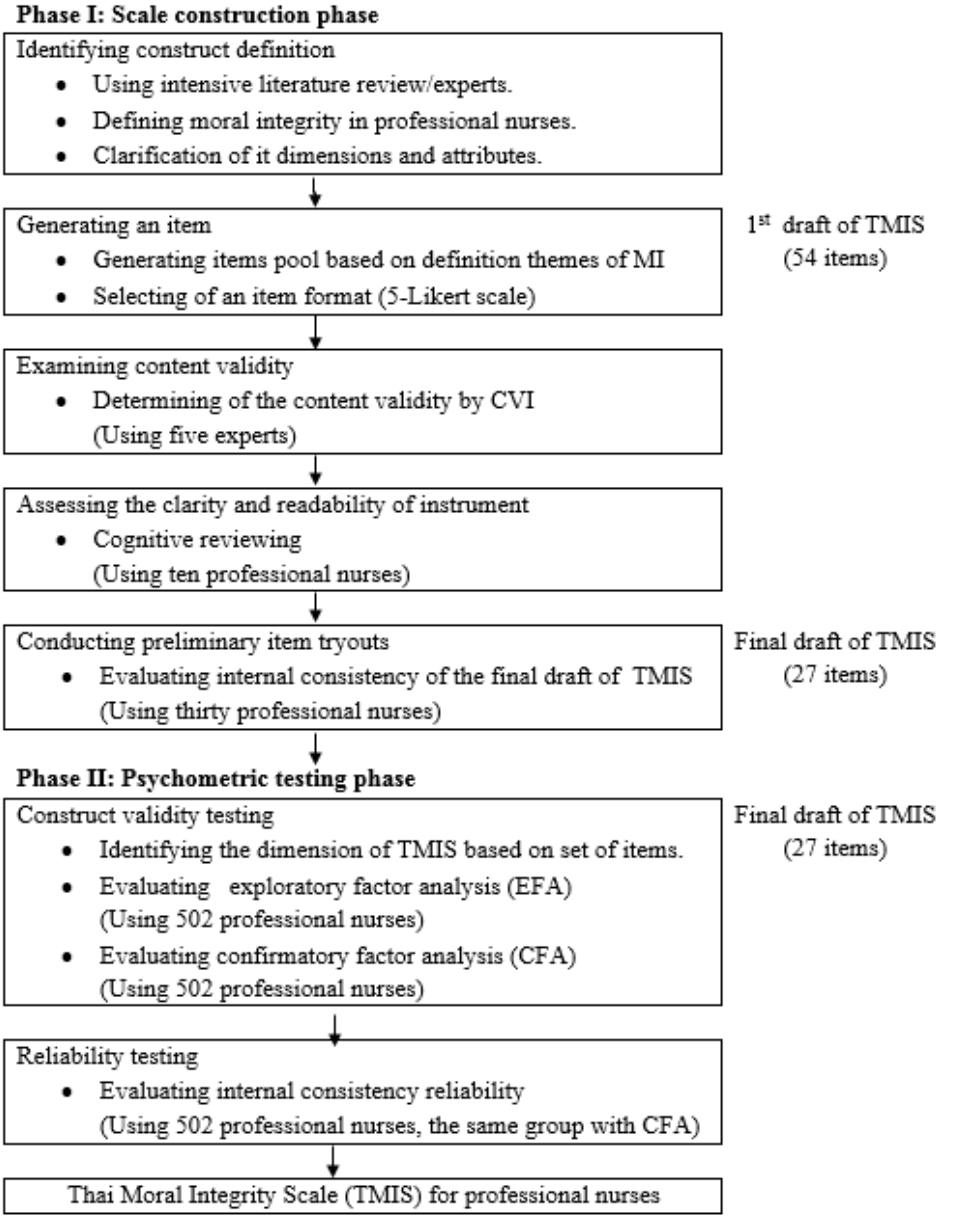

Figure 1 The Process of Developing the TMIS

Data Analysis

The Statistical Package for the Social Sciences (SPSS for Windows version 18.0) was utilized for descriptive statistics, reliability analysis and EFA. LISREL version 8.72 was utilized for CFA analysis.

Results

All participants ages ranged between 22 to 60 years, with a mean age of 33 years (S.D. = 9.47), the majority were female, and were of Buddhist religion (97.31%), their experience in patient care varied widely, from 1 to 39 years, with an average experience of 10.79 years (S.D. = 9.51). the majority of the participants had completed the bachelor degree (89.94%). An income ranged from 15,000 to 65,000 Thai Baht per month. The result of demographic characteristics and EFA was showed in Table 1.

Factor 1 consists of items 5-16. It was identified as "Express intention to follow the Thai Code" These 12 items explained 18.13% of the variance in the TMIS.

Factor 2 consists of items 1-4. It was labeled as "Adhere to and follow the Thai Code". The 4 items explained 11.23% of the variance in the TMIS.

Factor 3 consists of items 17-22. It was identified as "Continue to follow the Thai Code". The 6 items explained 16.05% of the variance in the TMIS.

Factor 4 consisted of items 23-27 which was identified as "Show courage to act according to the Thai Code's tenets". There 5 items explain 10.57% of the TMIS variance. The total variance that the 27 items could explain was 55.98% of the TMIS. All items were presented in Table 2.

The First Level Order of CFA

According to EFA, there were 4 factors which consisted of 27 indicators. These indicators were used to perform the CFA. This process was to examine whether a particular factor model provided a good fit to the data. The model was modified by allowing the error terms based on modification indices and initial model.

The results of the CFA show four factors in testing the accuracy of the scale structure that examines the specific factor models that provide data that is suitable for the TMIS data. TMIS has mean range between .37 to .47. The standard deviation is between .02 to .04. The skewness between -1 and .67 and kurtosis is between -.96 to 8.2. No multicollinearity was noted, and the correlation of all items was less than .85. This indicated that all data were acceptable in the analysis with CFA. The high inter-correlations across items above the upper .50's may mean that each item is not contributing a unique concept, and there may be some overlap across the items. According to the data which prepare for CFA, it ranged from .38 to .67. So, all items had acceptable the communalities to carry out CFA. The correlation coefficients ranged between .30 to .69. It showed that the correlation matrix was not an identity matrix and was reasonable for analysis with CFA.

Based on the findings, most indicators of the model were acceptable. χ^2 – test equal to 266.32, the goodness of fit index (GFI) equal to .96, degree of freedom equal to 242, Root Mean Square Error of Approximation (RMSEA) equal to .014, adjusted goodness of fit index (AGFI) equal to .94, except the significance of χ^2. Most of the model's fit indices were acceptable.

There was non-significance of TMIS in the χ^2 test. This means that the measured variable represents and confirms the construct of TMIS. The results of first level order of CFA were presented in Table 3.

The Second Level Order of CFA

In the first-order of CFA we observed variables as indicators of the construct. In the second order model, we further considered latent dimensions of TMIS. There are four factors and 27 indicators in the second level of the CFA. According to the acceptable

Table 1 Demographic Characteristics of the Participants in EFA and CFA (n= 1004)

Characteristics	EFA		CFA	
	Number	Percent	Number	Percent
Gender				
- Female	490	97.6	498	99.2
- Male	12	2.4	4	0.8
Age Level				
- 21 – 30 Years	310	61.8	266	53.0
- 31 – 40 Years	112	22.3	124	24.7
- 41 – 50 Years	54	10.7	80	15.9
- 51 – 60 Years	26	5.2	32	6.4
Religion				
- Buddhist	493	98.2	484	96.4
- Christian	1	0.2	13	2.6
- Muslim	8	1.6	5	1.0
Marital Status				
- Single	370	73.7	366	72.9
- Married	123	24.5	127	25.3
- Widowed/Divorced/Separated	9	1.8	9	1.8
Education Level				
- Bachelor Degree Level	464	92.4	439	87.5
- Master Degree Level	38	7.6	63	12.5
Hospital Type				
- Tertiary Care Hospital	350	69.6	350	69.7
- Secondary Care Hospital	60	12.0	60	12.0
- Primary Care Hospital	58	11.6	59	11.7
- Special Care Hospital	34	6.8	33	6.6
Department				
- Outpatient Department	121	24.1	52	10.4
- Inpatient Department	381	75.9	450	89.6
Workplace				
- Medical	162	32.3	141	28.1
- Surgical	147	29.3	111	22.1
- Emergency	22	4.4	16	3.2
- Gynecology	67	13.3	86	17.1
- Pediatric	91	18.1	99	19.7
- Operating Room	6	1.2	5	1.0
- Psychiatric	2	0.4	19	3.8
- ENT	3	0.6	16	3.2
- Home Health Care	2	0.4	9	1.8

Table 1 Demographic Characteristics of the Participants in EFA and CFA (n= 1004) (Cont.)

Characteristics	EFA		CFA	
	Number	Percent	Number	Percent
Position				
- Register Nurse	486	96.8	488	97.2
- Head Nurse	9	1.8	9	1.8
- Head of Department	7	1.4	5	1.0
Occupational				
- Government	96	19.1	100	19.9
- Employee	406	80.9	402	80.1
Experience				
- 1-5 Years	238	47.4	194	38.6
- 6-10 Years	116	23.1	114	22.7
- 11-15 Years	49	9.8	55	11.0
- 16-20 Years	40	8.0	54	10.7
- 21-25 Years	28	5.6	43	8.6
- More than 25 Years	31	6.1	42	8.4
Income Level				
- 15,000 – 25,000 Thai Bath	105	20.9	128	25.5
- 25,001 – 35,000 Thai Bath	261	52.0	206	41.0
- 35,001 – 45,000 Thai Bath	84	16.7	109	21.7
- 45,001 – 55,000 Thai Bath	43	8.6	40	8.0
- 55,001 – 65,000 Thai Bath	6	1.2	11	2.2
- More than 65,000 Thai Bath	3	0.6	8	1.6

level of .05 t-test statistics must have 1.96 or more before the hypothesis is rejected. The total regression weight between the four structures and TMIS is statistically significant at p <.05. It shows that four factors of MI scale were the true predictors of TMIS.

The result of the 2nd order of CFA showed that the standardized factor loading ranged from .51 to .83. The average variance extraction of four indicators was .49 (Table 4). The completely standardized factor loading on the dimension of "continue to do follow the Thai Code" was .94 could explain the variance of TMIS which R^2 = 88%, that was the primary indicator identified with the highest dimension that explaining TMIS. The second indicator was "express intention to follow the Thai Code" was 0.91 could explain the variance of TMIS which R^2 =83%. The third and final indicators was "adhere to and follow the Thai Code" and "show courage to act according to the Thai Code's tenets" were .69 could explain the variance of TMIS which the same value of R^2 = 48%. The measurement model had good fit the data with χ^2 = 232.87, df = 219, p = .248), χ^2/df = 1.06, GFI = .97, AGFI = .94 CFI = 1.0, and RMSEA = .011 (Table 5).

The results showed that the normal distribution of skewness -1.00 to 1.50 and kurtosis at -1.00 to 2.00. The item means were between 2.5 and 4.50. Cronbach's alpha coefficient was .92 with high

Table 4 Factor Scores Regression of CFA (2nd order) of TMIS (n=502)

No of Items	R^2 for second order indicator				Factor scores regression	AVE
	Adhere	Express	Continue	Courage		
1	.63	-	-	-	.39	0.49
2	.75	-	-	-	.57	
3	.70	-	-	-	.49	
4	.81	-	-	-	.66	
5	-	.60	-	-	.36	
6	-	.59	-	-	.35	
7	-	.57	-	-	.32	
8	-	.54	-	-	.29	
9	-	.55	-	-	.30	
10	-	.57	-	-	.33	
11	-	.60	-	-	.36	
12	-	51	-	-	.26	
13	-	.72	-	-	.52	
14	-	.68	-	-	.46	
15	-	.57	-	-	.33	
16	-	.52	-	-	.27	
17	-	-	.58	-	.33	
18	-	-	.60	-	.36	
19	-	-	.71	-	.50	
20	-	-	.67	-	.45	
21	-	-	.66	-	.44	
22	-	-	.74	-	.55	
23	-	-	-	.55	.30	
24	-	-	-	.59	.35	
25	-	-	-	.52	.27	
26	-	-	-	.81	.66	
27	-	-	-	.83	.69	

Note: The number of items are the same as the number of items in Table 2 and Table 3.

Table 5 The Result of the CFA (2^{nd}order) of TMIS (n=502)

Factors	Factor loadings	se	t-value	R^2
1. Express intention to follow the Thai Code.	.91	.07	12.91	.83
2. Adhere to and follow the Thai Code.	.69	.07	9.52	.48
3. Continue to follow the Thai Code.	.94	.07	12.54	.88
4. Show courage to act according to the Thai Code's tenets.	.69	.08	8.15	.48
χ^2 = 232.87; df = 219; p = .248; GFI = 97; AGFI = .94; CFI = 1.0; RMSEA = .011.				

reliability. Therefore, the TMIS alpha coefficient is more than acceptable at .70 for a newly developed tool.[29, 35] The result found empirical evidence to support TMIS which can be recognized as a valid and reliable tool. The creation of factors of a TMIS measurement model has been affirmed.

Discussion

The scope of this study was based on an intensive literature review and content validation by experts. There were three dimensions of TMIS that is the conceptual framework of this study. After the process of analysis by EFA, there were four dimensions of the new scale that consisted of the construct of MI.

The interpretation of new dimensions of TMIS that reflect MI in Thai was based on data. Previous definitions of MI in the literature examined consist of three dimension of discernment, consistent action, and public justification which derived from the literature review that based on western countries. The Bartlett's Sphericity test of EFA and CFA were both significant. This indicates the appropriateness of the data for factor analysis. After analyzing the data based on Thai, the result of EFA were showed that four factor were initial factors that could be explained TMIS as follow.

Factor 1: Express intention to follow the Thai Code; this was the same meaning as public justification in the original concept that means the ability of persons to be confident in their knowledge and thinking with clarity, doing right and sharing their belief with others.[6, 9]

Factor 2: Adhere to and follow the Thai Code; this was close to the meaning of discernment that is the ability to think and weigh the values involved and decide what the most deeply felt beliefs are, and do the right thing.[6, 9] Nurses have to accept responsibility for what needs to be done. Which is to act according to the tenets of the profession.

Factor 3: Continue to follow the Thai Code; this was the same meaning as taking consistent action, whereby the person acts according to beliefs in a reliable manner. Nurses have to follow the Thai Code or the rule of organization when providing nursing care to patients.[6, 9]

Factor 4: Show courage to act according to the Thai Code's tenets, in a public way, even under difficult conditions. This factor is an integration between the courage to make decisions and to show the actions to others on a consistent basis.[6, 9. 11]

From the previous definition of MI in the literature that has been examined, there are some similarities in the meaning of the dimensions of courage in expression and actions according to ethical principles in moral courage is an element of MI that responds to current threats or challenges that are currently accepted in the past and anticipated in the future.[37] Moral courage means the individual must speak out and do the right thing today and in the future. It may involve confrontational situations which the person must be able to handle in a professional manner.

This discovery is consistent with the previous studies in which the meaning of MI is identical to the courage to express words or actions by an RN.[36, 37, 38] Different dimensions of MI can change from a variety of cultural backgrounds, with different views or backgrounds of different areas and cultures.[40] yet, as the above discussion demonstrates, there are similarities across Western and non-western cultures with regard to underlying concepts.

In the psychometric testing including accuracy and reliability testing this tool recognizes the construct validity by using CVI scores assessed by five experts, with S-CVI close to 1.00 and internal consistency using Cronbach's alpha is over than .80. This is well within acceptable norms for a new scale.[26, 32]

Limitation and Future Research

This study should be replicated with group from all areas of Thailand prior to generalized use of the instrument. Instrument development is an iterative process, and in order to be confident of the results of psychometric work reported here, additional and larger samples should be used for broader testing.

MI should be supported in organizations, such as for providing opportunities for MI, providing opportunities to examine moral situations in clinical teaching, and holding small group discussions. Nurse educators need to be especially mindful in helping novice nurses get in the habit of critical examination and thought on ethical matters. Other variables should be studied, such as hospital environments, hospital care systems, working time, relationships with other health providers in the environment, and satisfaction of Rn. The connection between MI and demographic characteristics, for example, knowledge, morality, experience, status, age, sexual, and moral opinions need to be examined.

Conclusions

TMIS was developed in two phases of testing for formative and psychometric properties. The final version of the 27 items has four factors with a 5-point Likert-type scale. The four factors of the TMIS were: (1) Express intention to follow the Thai Code, (2) Adhere to and follow the Thai Code, (3) Continue to follow the Thai Code, and (4) Show courage to act according to the Thai Code's tenets. The study indicated an adequate reliability and validity for the TMIS.

Implication for Nursing Practice

The expression of quality of nursing care that emanates from good thoughts and feelings are based on MI principles as well as scientific knowledge on which nursing practice is based. The results of this study provide alternative ways of evaluating MI. The results and insights can be used in planning recruitment and orientation programs for clinical settings. This applies both for nursing staff and nurse leaders. Such an assessment could help to better understand nurses' thinking, feelings, and perspectives.

Moreover, it could be helpful in assessing the MI of nurses at baseline that can then be measured for change over time. The nursing administrators could use the information to help support nurses to maintain MI and promote the development of ethical behavior of nurses on a consistent basis. Preparation of nurses for relevant scientific knowledge can help them as they evaluate ethical problems and the alternative choices they face. This is especially critical as new technologies emerge, presenting a new challenge to health care.

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References

1. Elmore J, Wright DK, Paradis M. Nurses' moral experiences of assisted death: A meta-synthesis of qualitative research. Nurs Ethics. 2018; 25(8):955-72.
2. Safavi F, Ebrahimi H, Areshtonab HN, Khodadadi E, Fooladi M. Relationship between demographic characteristics and ethical reasoning of nurses working in medical wards. J Clin Diagn Res. 2018;12(8):1-4.
3. Milliken A, Grace P. Nurse ethical awareness: Understanding the nature of everyday practice. Nurs Ethics. 2017; 24(5):517-24.
4. Avci K, Cinaroglu S, Top M. Perception of pediatric nurses on ethical decision making processes. Syst Pract Act Res. 2017;30(1):67-84.
5. Rest J. Revised manual for the defining issues test. Minneapolis: MN: Minnesota Moral Reserach Project; 1979.

6. Olson L. The relationship between moral integrity, psychological well-being, and anxiety. Charis: the Institute of Wiscosin Lutheran College. 2002;2(1):21-8.
7. Lind G. The theory of moral cognitive devlopment: a socio-psychological assessment. Trans Wren. In Moral development and the social environment.Chicago: Precendent; 1985.
8. Alba B. Factors that impact on emergency nurses' ethical decision-making ability. Nurs Ethics. 2018; 25(7):855-66.
9. Carter S. integrity. New York: Basic Books, a division of Herper Collins Publishers; 1996.
10. Arpananthikul M, Prapaipanich W, Senadisai S. nursing administrators perception ot Thai register nurses' professional ethics. Thai J NursCouncil, . 2014;29(2):5-20.
11. Jormsri P, Kunaviktikul W, Ketefian S, Chaowalit A. Moral competence in nursing practice. Nurs Ethics. 2005;12(6):582-94.
12. Thailand Nursing & Midwifery Council. The professional nurses practiced base on Nursing and Midwifery Regulation on Code of Professional Conduct (B.E.2550).
13. Susan M. Oncology nurses' narratives about ethical dilemmas and prognosis related communication in advanced cancer patients. Cancer Nurs. 2013;36(2):114-21.
14. Pavlish C, Brown-Saltzman K, Hersh M, Shirk M, Rounkle A-M. A Nursing priorities, actions, and regrets for ethical practice. J Nurs Scholarsh. 2011;43:385-95.
15. Barlow N, Hargreaves J, Gillibrand W. Nurses' Contributions to the Resolution of Ethical Dilemmas in Practice. Nurs Ethics. 2018; 25(2):230-42.
16. Epstein E, Delgado S. Understanding and addressing moral distress. Online J Issues Nurs. 2010;15(3).
17. Jahromi MK, Koshkaki AR, Poorgholami F, Talebizadeh M. A Study of Nurses' Perception of Professional Values in the University Hospitals Affiliated with Jahrom University of Medical Sciences, 2015. Bangladesh Med J. 2018;17(1):47-51.
18. Fourie C. Moral distress and moral conflict in clinical ethics. Bioethics. 2015;29(2):91-7.
19. LaSala CA, Bjarnason D. Creating workplace environments that support moral courage. Online J Issues Nurs. 2010;15(3).
20. Eriksen A. The authority of professional roles. J Soc Philos. 2015;46(3):373-91.
21. Laabs C. Perceptions of moral integrity: contradictions in need of explanation. Nurs Ethics. 2011;18(3):431-40.
22. Wicclair M. Conscientious Objection in Healthcare and Moral Integrity. Camb Q Health Ethics. 2017;26(1):7-17.
23. Association AN. Code of ethics for nurses with interpretive statement. Silver Spring. 2015;MD Author.
24. Kohlberg L. The philosophy of moral development: Moral stages and the idea of justice: San Francisco: Harper & Row; 1931.
25. Parker RS. Measuring nurses' moral judgments. J Nurs Scholarsh. 1990;22(4):213-8.
26. DeVellis R. Scale development. 2nd, editor. Newbury Park: CA: Sage; 2012.
27. Waltz CF, Strickland OL, Lenz ER. Measurement in nursing and health research: Springer Publishing Company; 2010.
28. Crocker L, Algina J. introduction to classical and modern test theory New York: Cengage Learning; 2008.
29. Nunnally J, Bernstein I. Psychometric Theory 3rd edition (MacGraw-Hill, New York). 1994.
30. Soper D. SEM sample size calculator 2017 [Available from: http://www.DANIELSOPER.Com/statcalc3/calc.aspx?id=89.
31. Burns N, Grove, S. K. . Understanding nursing research. 5th, editor. Maryland Heights: MO:Elesevier/Saunders; 2011.
32. Polit DF, Beck, CT., Owen, SV. Is the CVI an acceptable indicator of content validity? Appraisal and recommendation. Res Nurs Health. 2007;30(4):459-67.
33. Schumacker RE, Lomax RG. A beginner's quide to structural equation modeling. 2nd edn. Mahwah, New Jersey: Lawrence Erlbaum Associates; 2011.
34. Tabachnick BG, Fidell LS. Using multivariate statistics, 6th edn Boston. Ma: Pearson. 2013.
35. Hair J, Black B, Babin B, Anderson R. Multivariate Data Analysis 7th Pearson Prentice Hall. Upper Saddle River, NJ. 2010.
36. Sadooghiasl A, Parvizy S, Ebadi A. Concept analysis of moral courage in nursing: A hybrid model. Nurs Ethics. 2018;25(1):6-19.
37. Kidder RM, McLeod B. Moral courage: W. Morrow New York; 2005.
38. Lachman VD. Moral courage: a virtue in need of development. Medsurg Nurs. 2007;16(2):131.
39. Comrey AL, Lee HB. A first course in factor analysis: Psychology press; 2013.
40. Walker LO, Avan KC. Strategies for theory construction in nursing . 4th, editor. New Jersey: Pearson Education; 2005

การพัฒนาแบบวัดคุณธรรมบูรณภาพสำหรับพยาบาลวิชาชีพไทย

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บทคัดย่อ: คุณธรรมบูรณภาพเป็นรากฐานของคุณธรรมจริยธรรมที่แสดงให้เห็นถึงศักยภาพของพยาบาลในการเผชิญสถานการณ์ทางจริยธรรม และกำหนดทิศทางในการการปฏิบัติการพยาบาล การประเมินคุณธรรมบูรณภาพจึงมีความสำคัญสำหรับพยาบาล ในประเทศไทยมีมาตรฐานวิชาชีพและสมรรถนะด้านจริยธรรมและจรรยาบรรณวิชาชีพเป็นแนวทางของคุณธรรมบูรณภาพและมาตรฐานจริยธรรม การวิจัยครั้งนี้มีวัตถุประสงค์ เพื่อพัฒนาและทดสอบคุณสมบัติการวัดทางจิตวิทยาของแบบวัดคุณธรรมบูรณภาพสำหรับพยาบาลวิชาชีพ โดยความหมายและองค์ประกอบของคุณธรรมบูรณภาพสำหรับพยาบาลวิชาชีพในการศึกษาครั้งนี้ได้พัฒนากรอบแนวคิดจากการทบทวนวรรณกรรมและความคิดเห็นของผู้เชี่ยวชาญ โดยได้ผ่านการตรวจสอบความตรงเชิงเนื้อหาจากผู้เชี่ยวชาญทางด้านจริยธรรม จำนวน 5 ท่าน

แบบวัดคุณธรรมบูรณภาพสำหรับพยาบาลวิชาชีพมีข้อคำถามจำนวน 27 ข้อ ประเมินแบบ 5 ระดับ ผลการตรวจสอบคุณสมบัติการวัดทางจิตวิทยาโดยเก็บข้อมูลในพยาบาลวิชาชีพจำนวน 502 คน โดยทำการทดสอบความตรงเชิงโครงสร้างด้วยการวิเคราะห์องค์ประกอบเชิงสำรวจ พบว่าแบบวัดคุณธรรมบูรณภาพสำหรับพยาบาลวิชาชีพประกอบด้วย 4 องค์ประกอบคือ (1) แสดงออกถึงเจตนาที่จะทำตามหลักปฏิบัติในวิชาชีพ (2) ยึดมั่นตามหลักปฏิบัติในวิชาชีพ (3) ยืนหยัดทำตามหลักปฏิบัติในวิชาชีพ และ (4) กล้าที่จะกระทำตามหลักปฏิบัติในวิชาชีพ ซึ่งสามารถอธิบายความแปรปรวนได้ 55.98% และผลวิเคราะห์องค์ประกอบเชิงยืนยัน พบว่า โครงสร้างองค์ประกอบของคุณธรรมบูรณภาพสำหรับพยาบาลวิชาชีพมีความสอดคล้องกับข้อมูลเชิงประจักษ์อยู่ในเกณฑ์ดีค่าความเชื่อมั่นชนิดความสอดคล้องภายใน (Cronbach's alpha coefficients) ของแบบวัดทั้งฉบับเท่ากับ .92

ผลการศึกษาชี้ให้เห็นถึงค่าความตรงตามโครงสร้างและความสอดคล้องภายในของแบบวัดคุณธรรมบูรณภาพที่อยู่ในเกณฑ์ที่ยอมรับได้ ซึ่งเป็นทางเลือกในการประเมินคุณธรรมบูรภาพของพยาบาลวิชาชีพไทย โดยเฉพาะอย่างยิ่งการประเมินคุณธรรมบูรณภาพในการปฏิบัติการพยาบาลให้มีระดับคุณภาพของการดูแลที่สูงขึ้นในกลุ่มพยาบาลที่จบใหม่

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