Original Article

Recovery as Nursing Outcome among Persons with Major Depressive Disorder: 30-Thai Mental Health Recovery Measure

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Objective: Investigate the psychometric properties of the Thai version of the 30-item Mental Health Recovery Measure (Thai-MHRM) for person with major depressive disorder (PMDD).

Materials and Methods: An instrument modification and psychometric properties testing were employed to explore the qualification of the recovery instrument among PMDD in Thailand. Three hundred eight Thais adult with MDD who have experienced the mental health services in the mental health and psychiatric department of the hospital or community health centers were recruited for this study. A confirmation factor analysis (CFA) was used to examine the factor structure of the Thai-MHRM. Data were analyzed using descriptive statistics and a linear structural relationship (LISREL, version 8.72) analysis. The Cronbach's alpha was applied to assess the internal reliability of the Thai-MHRM.

Results: CFA of the Thai-MHRM produced eight factors that was replicated using confirmatory techniques. Each factor had satisfactory internal reliability (Cronbach's alpha range 0.68 to 0.86). The Thai-MHRM average total scores for the participants was 80 (SD 20). The internal reliability (coefficient alpha) of the Thai-MHRM total score was 0.93. The one-week test-retest reliability was 0.92. The Thai-MHRM instruments demonstrated excellent internal consistency.

Conclusion: The present study provides initial support for use of the Thai-MHRM-30 as a valid and reliable assessment of perceived recovery among PMDD and may be applied in routine care. To facilitate recovery as a nursing outcome, evaluation of the intervention and search for recovery instrument need to be integrated into the nursing practice.

Keywords: Recovery, Nursing outcome, Instrument, Major depressive disorder

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In traditional terms, recovery is recognized as the absence of symptoms or characteristic impairments of an illness[1]. For serious mental illness such as major depressive disorder (MDD), this has usually meant the remission of significant depressive symptoms. Previous studies proposed that recovery was often defined by the absence of symptoms and the return to ability of functioning for a specified period of time[2]. Those definitions have been employed to consider the clinical evaluation and monitor the response of anti-depressant treatment for persons with major depressive disorder (PMDD). In this sense, recovery has been associated with better prognosis of depression and is a partial goal expressed by PMDD.

The ultimate health goal of a person with any illness is recovery. This is also the case for the PMDD. Similarity to mental health nurses' point of view, recovery is recognized as a nursing outcome of therapeutic intervention[3]. Recovery from depression is experienced not just in terms of absence of depressive symptoms but also as a recovery of sense of self. This implies attention to the psychological and spiritual well-being of the PMDD[4]. Recovery refer to regaining of emotions, thinking process, and action that give a person a revealed feeling of hope

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and aim of life, reach to resourcefulness, and able to manage their depression[5]. It also has implications for evaluation of the effectiveness of nursing services[6].

The empirical evidences supports that pharmacological treatment and nursing therapeutic interventions have affected PMDD significantly in Thailand[7]. However, the indicator to determine the effectiveness of those interventions has been focused on depressive symptom severity instead of recovery-oriented perspective. More likely, recovery being as an overlooked nursing outcome. In Thailand, there are not enough evidence about suitable indicator to evaluate the nursing intervention that provided for those patients, particularly in other serious mental illness patients. Most of the indicators or the outcome evaluation of those interventions were focus on reducing depressive symptoms. To facilitate recovery as nursing outcomes, evaluation of the intervention and search for recovery instrument need to be integrated into the nursing practice.

Objective

The aim of the present study was to investigate the psychometric properties of the Thai version of the 30-item Mental Health Recovery Measure (Thai-MHRM) for PMDD.

Materials and Methods

Study design

This methodological research was developed to investigate the Thai-MHRM and assess its validity and reliability by testing the psychometric properties.

Sample and settings

Three hundred eight Thai adults with MDD who were receiving mental health services in the psychiatric ward (108 Thai PMDD) and in the mental health department of primary care unit (200 Thai PMDD) of the Pramongkutklao General Hospital participated in this study. The simple random sampling technique was employed to select the participants. Demographic data with age, gender, education, marriage status, occupation, underlying disease, and medication behavior was noted. The participants were recruited if 1) MDD was diagnosed with the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), 2) 18 years of age or older, 3) able to communication in Thai, and 4) had experienced hospitalization at the psychiatric hospital in Bangkok or one of the four regions, and had a clinical recovery from depression, which was assessed by the researcher that measured the information reflecting the absence of depressive symptoms for at least eight weeks after hospital discharge by using the Thai Depression Inventory (TDI score of less than 35)[8].

Ethics consideration

Research ethics approval was obtained from the Royal Thai Army Medical Department Institutional Review Board (IRBRTA, approval number 1224/59) and relevant permissions were given by the hospital directors. All participants received explanations of the study. This included a guarantee that their responses and identities would be kept confidential. Participants' return of the completed questionnaire implied informed consent had been given.

Data collection and data analysis

Modifying the Thai-MHRM had five steps, 1) clarifying and determining the recovery concept, 2) review of the existing recovery measurement, 3) process of translation, 4) conducting preliminary tryouts, and 5) conducting a psychometric property testing.

Step 1: Clarifying and determining the recovery concept: Recovery is complex and is different for each individual. Similarity, health seeking model (HSM) explains health as a dynamic state that may be inferred from one's level of physical and psychological functioning[9]. A recent study proposed that recovery among PMDD refer to the individual competences be able to seek any resources that might help them overcome the problems and characteristics of physical, psychological, and functional impairment that comes from their illness[10]. Seeking these resources might be considered as the operational definition of recovery among PMDD.

Step 2: Review of the existing recovery measurement: Fortunately, there were existing instruments to measure recovery. The Mental Health Recovery Measure (MHRM) developed by Young et al[11] illustrated that the construct of recovery was fit with the instrument operation of the study. Therefore, the MHRM was used, modified, and tested for the psychometric properties. The MHRM is a 30 items self-report measure designed to assess the recovery process for individuals who have serious and persistent mental illnesses such as recurrent major depression, bipolar disorder, or schizophrenia spectrum disorders. The MHRM is scored using a 5-point Likert scale (0 to 4) for each item, yielding a theoretical range from 0 to 120 for total score. The item content of the MHRM and the MHRM conceptual domains are

based upon a specific theoretical model of mental health recovery that is grounded in the experiences of persons with psychiatric disabilities. In addition to a total score, the MHRM has eight subscales that consisted of 1) overcoming stuckness, 2) self-empowerment, 3) learning and self-redefinition, 4) basic functioning, 5) overall well-being, 6) reaching new potentials, 7) spirituality, and 8) advocacy or enrichment. It was shown to have high internal consistency (Cronbach's alpha 0.91). The Cronbach's alpha for the subscales ranged from 0.55 to 0.83. The MHRM has been translated into several languages, including French, Danish, Chinese, Dutch, Korean, and Portuguese. To date, there is no MHRM translated into Thai.

Step 3: Process of translation: There were two steps on process of translation. Firstly, the translation process was initiated by translating the original English version of the MHRM into Thai language by a linguistic expert at the translation and interpretation service unit, Faculty of Arts, Chulalongkorn University, and next the instrument was reviewed by a bilingual Thai nurse with a PhD in nursing to confirm semantic equivalence and cultural relevance. In addition, considering content equivalence, terminology modification was also applied[12,13].

Secondly, two bilingual Thai professional nurse translators undertook back-translation. The back-translated versions are compared with the original (English language) versions. Reaching congruence of meaning between the original and target versions in Thai required back-translations[14]. The translators separately translated odd and even items and then independently cross-examined the back-translated versions (i.e., odd items and even items) and compared these items with the original instrument. The present study assured equivalence of the instruments by launching content validity. Seven nursing experts performed content validity. The experts rated each item of the Thai-MHRM on a four-point scale to validate its appropriateness of the construct studied. The content validity index (CVI) was calculated. All items were rated as 3 (relevant with minor revision) or 4 (very relevant) are retained. CVI score is 90%[15].

Step 4: Conducting preliminary tryout: The preliminary tryout was carried out in January 2018. The aims of the pilot study were to assess the feasibility of using the proposed instruments, to assess psychometric properties, and to evaluate data-collection procedures. It provided an opportunity to test the instructions and the translated Thai-MHRM. Thirty Thais PMDD participants who were 18 years of age and over and were cognitively capable of answering the questions accurately were included. Convenience sampling was employed to recruit a sample of 15 MDD people for each of the two settings. After the participants were identified and introductions were made, the investigator explained the objectives of the study. They were informed of their rights and if the subject was willing to participate in the pilot study, they would be asked to sign a consent form. The participants were then asked to complete the questionnaire and to evaluate the clarity and appropriateness of the questions. The investigator recorded the time spent to complete the questionnaires, administration issues associated with the questionnaire, and suggestion for improvements. They were interviewed at their homes or at a local temple, whichever suited them. The total Cronbach was 0.89, ranging from 0.86 to 0.93.

Step 5: Conducting psychometric property testing: The Thai-MHRM was analyzed by using a process of psychometric property testing as follow.

Data analysis:

Confirmatory factor analysis (CFA) was used to examine the factor structure of the Thai-MHRM. Data were analyzed using descriptive statistics and a linear structural relationship (LISREL, version 8.72) analysis. Correlations of the Thai-MHRM with measures of depressive symptom severity was computed to further establish construct validity. Cronbach's alpha was used to assess the internal reliability of the Thai-MHRM. To be considered a good measure of a particular construct, the researcher must concern about validity and reliability of the instrument after translation[16]. The followings were present to assure the validity and reliability of the Thai-MHRM.

Scoring and interpreting the Thai-MHRM: The total score for the Thai-MHRM was derived by adding up the number corresponding to the response for each item (using a 0, 1, 2, 3, 4 Likert scale with 0=strongly disagree to 4=strongly agree). There were no reverse scored items. The theoretical range for the total score is 0 to 120.

The Thai-MHRM used the total score as an overall assessment of self-reported recovery. The items comprised each domain are described in Table 1.

A Thai-MHRM "clinical cut-off point" total score has not been determined to evaluate who was or was not "in recovery". Nonetheless, anyone scoring below 60 on the Thai-MHRM Total Score was describing

Table 1. Shows the items comprising each domain of Thai-MHRM

No.	Domains	Item No.
1	Overcoming stuckness	1, 2, 3, 4
2	Self-empowerment	5, 6, 7, 8
3	Learning and self-redefinition	9, 10, 11, 12
4	Basic functioning	13, 14, 15, 16
5	Overall well-being	17, 18, 19, 20
6	New potentials	21, 22, 23, 24
7	Spirituality	25, 26
8	Advocacy/enrichment	27, 28, 29, 30

Thai-MHRM total score=sum of scores for items 1 through 30

their current recovery at a level that is significantly below average compared to their peers as it was more than one standard deviation from the mean of 80.

Results

Participant characteristic

A high response rate of 96.25% was achieved with 320 questionnaires being distributed and 308 returned. Among these, the participant mean age was 43.6 years with 41.2% that were between 31 and 45 years old. More than a half of the respondents were male (53.2%), married (55%), and had a bachelor's degree (54.3%). Most of the respondents were employed (83.8%). Regarding the health personal data, most of the respondents showed no underlying disease (66.9%). Among these, 33.1% reported that they suffered two health problems, which are hypertension (35.4%) and hyperlipidemia (19.1%) for the last 1 to 5 years (75.5%).

Psychometric properties of Thai-MHRM

Content validity: This instrument was assessed by seven experts. Three experts were professional mental health nurses who work in the psychiatric hospital. Two experts were nursing instructors working in Faculty of Nursing, Mahidol University and the Royal Thai Army Nursing College and expert in mental health and psychiatric nursing field. The other two experts were experienced psychiatrists. This expert panel evaluated the content validation index (CVI) for both item level and scale level.

A panel of content experts was asked to rate each scale item in terms of its relevance to the underlying construct for the content validity index for the items (I-CVI). These items ratings were on a 4-point ordinal scale to avoid having a neutral and ambivalent midpoint. The four points were 1=not relevant, 2=somewhat relevant, 3=quite relevant, and 4=high relevant[17]. Then, for each item, the I-CVI was be computed as the number of experts giving a rating of either 3 or 4, and was divided by the total number of experts. The score of I-CVI was 1.00, which was acceptable. The recommended I-CVI score should not be lower than 0.78[17].

The content validity index for scale/Ave (S-CVI/Ave) is referred to the average proportion of items given a rating of quite or very relevant (3 or 4) across the various judges. S-CVI/Ave was calculated by the averages proportion of items rated relevant across experts divided by the number of experts. The acceptable score of S-CVI/Ave is 0.90 or higher. The score of S-CVI/Ave was 1.00, which is acceptable[18].

Construct validity: Factor analysis was used to test the construct validity of the instrument. Confirmatory analysis concerned with the question of how many factors are factor loadings. CFA was used in the last step to assess the overall goodness of fit. Chi-square test was used to indicate a good fit when values of less than three were achieved. Root mean square error of approximation (RMSEA) ($p<0.05$) and its confidence interval (90% CI) indicated a good fit when p-value was less than 0.05. Comparative fit index (CFI) displayed a range of 0 to 1, with a minimum goodness-of-fit p-value of 0.95. Finally, the standardized root mean square residual (SRMR) indicated a good fit with p-values of less than 0.08)[19].

The Thai-MHRM score was a continuous indicator. Table 2 demonstrates that the recovery score ranged from 1.63 to 4 with a mean of 2.93 (SD 0.55). The skewness coefficient (0.048) was indicating normal distribution. The kurtosis coefficient reported –0.375, indicating that the majority of the participants reported a high recovery score.

The eight domain of recovery overcoming stuckness, self-empowerment, learning and self-redefinition, basic functioning, overall well-being, new potentials, spirituality, and advocacy or enrichment had the score from 0 to 4, 0 to 4, 0.50 to 4, 1 to 4, 1 to 4, 1 to 4, 1.25 to 4, 0 to 4, and 0.75 to 4; with a mean of 2.67 (SD 0.87), 3.03 (SD 0.67), 3.03 (SD 0.65), 2.75 (SD 0.71), 3.01 (SD 0.73), 3.04 (SD 0.68), 2.89 (SD 0.90), and 2.91 (SD 0.69), respectively.

The results of CFA reveal that the measurement models had a good overall model fit (Table 3). The second-order CFA showed that all measurements had low chi-square values resulting in a non-significant difference level of 0.05. The chi-square or df ratio fell within the recommended level of 2, with both goodness of fit index (GFI) and adjusted goodness of

Table 2. Descriptive statistics for recovery (n=308)

Domain	Mean	SD	Possible score	Actual score	Skewness	Kurtosis
Overcoming stuckness	2.76	0.87	0 to 4	0 to 4	–0.889	1.102
Self-empowerment	3.03	0.67	0 to 4	0 to 4	–0.589	1.085
Learning self-redefinition	3.03	0.65	0 to 4	0.50 to 4	–0.509	0.370
Basic functioning	2.75	0.71	0 to 4	1 to 4	–0.098	–0.312
Overall well-being	3.01	0.73	0 to 4	1 to 4	–0.533	0.029
New potentials	3.04	0.68	0 to 4	1.25 to 4	–0.249	–0.771
Spirituality	2.89	0.90	0 to 4	0 to 4	–0.666	0.320
Advocacy/enrichment	2.91	0.69	0 to 4	0.75 to 4	–0.261	–0.324
Total	2.93	0.55	0 to 4	1.63 to 4	0.048	–0.375

SD=standard deviation

Table 3. Goodness of fit of recovery construct (n=308)

Construct	χ^2	df	χ^2/df	p-value	GFI	AGFI	RMSEA
MHR	18.40	12	1.53	0.104	0.99	0.97	0.035

χ^2=chi-square; df=degree of freedom; GFI=goodness of fit index; AGFI=adjusted goodness of fit index; RMSEA=root mean square error of approximation; MHR=mental health recovery

Table 4. Original MRHM and Thai-MHRM internal consistency (Cronbach's alpha)

Subscale	MHRM	Thai-MHRM
Overcoming stuckness	0.63	0.76
Self-empowerment	0.74	0.75
Learning and self-redefinition	0.57	0.68
Basic functioning	0.71	0.78
Overall well-being	0.86	0.86
New potentials	0.78	0.81
Spirituality	0.89	0.86
Advocacy/enrichment	0.68	0.74
Total	0.91	0.93

MHRM=Mental Health Recovery Measure

fit index (AGFI) values close to 1.00 (0.99) and equal to 1.00 (0.97), respectively. The RMSEA values was 0.035 indicating validity of measurement constructs.

Reliability of instrument: The present study was focused on internal consistency and consistency reliability (stability). The values of the test statistics for the Thai-MHRM internal consistency and test-retest reliability are described below.

Internal consistency: The internal consistency was tested by coefficient alpha (Cronbach's alpha), which is a reliability index that estimates the internal consistency or homogeneity of a measure composed of several items or subparts[20]. The acceptable score of Cronbach's alpha coefficient is 0.80 or higher[21]. Table 4 shows the internal consistency statistics by subscale for the Thai-MHRM.

The internal consistency statistics by subscale for the Thai-MHRM were determined as follows: alpha for total score=0.93; alphas for each subscale: overcoming stuckness=0.76, self-empowerment=0.75, learning and self-redefinition=0.68, basic functioning=0.78, overall well-being=0.86, new potentials=0.81, spirituality=0.86, and advocacy/enrichment=0.74.

The test-retest reliability for the Thai-MRHM was determined using data from a sub-sample of 70 participants who completed the MRHM twice, with an average of one-week between administrations and considered the acceptance test-retest reliability by correlation coefficient. One-week test-retest reliability was 0.92. The acceptable score of correlation coefficient is 0.8 or higher[22].

Discussion

In the modified 30 items Thai-MHRM, the authors used five steps to explore the qualification of recovery instrument among PMDD in Thailand. Each item has a clear and precise component as well as statistical reliability and validity in comparison to scales developed in other countries[23]. It is necessary to evaluate recovery to determine the effectiveness of nursing intervention among MDD patients. Unfortunately, there was no standardized scale to monitor and evaluate the nursing intervention to determine the recovering in PMDD[24]. Instrument to measure recovery must be reliable and valid in several aspects, and acceptable to cultural context.

The present study was conducted to evaluate the validity and accuracy of the Thai-MHRM. The

findings demonstrated that the Thai-MHRM were higher than those found in previous study, which, according to Cronbach's alpha, was 0.93 in total, as well as the eight subscales of the instrument that ranged from 0.68 to 0.86. Moreover, the results of CFA reveal that the measurement models were good. The second-order CFA shows that all measurements had low chi-square values resulting in a non-significant difference level of 0.05. The chi-square or df ratio fell within the recommended level of 2, with both GFI and AGFI values close to 1.00 (0.99) and equal to 1.00 (0.97), respectively. The RMSEA values was 0.035 indicating validity of measurement constructs. Therefore, the Thai-MHRM validity and reliability have been good and considered important for a well-established and widely used instrument.

What is already known on this topic?

This topic indicated that the Thai-MHRM as a nursing outcome instrument should be employed in mental health services. To use the Thai-MHRM instruments, mental health professions should consider the quality of the instrument and apply it as a tool to evaluate the nursing intervention. The Thai-MHRM is a valid and well-designed instrument for persons with mental illnesses as it was developed after a grounded theory analysis of narrative data provided by individuals with psychiatric disabilities.

What this study adds?

Using a valid and reliable instrument is a crucial factor for measuring MDD, and it can guaranty the research quality. Recovery should be highlighted as a nursing outcome. The MHRM has been translated into several languages, including French, Danish, Chinese, Dutch, Korean, and Portuguese. However, to date, the MHRM has not been translated into Thai. This is the first recovery instrument translated into Thai language that took into consideration the Thai culture and context. The Thai-MHRM can be used by psychiatrist and other psychiatric staffs.

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Conflicts of interest

The authors declare no conflict of interest.

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