

The Development of Thai Mental Health Indicator (TMHI): From past to present

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Abstract

Thailand was realized the importance and need of developing Thai mental health indicator to investigate the mental health of Thai people. In 2000, Thai mental health indicator in individual level was developed to study the country-wide mental health of Thai people and to examine the change of mental health or well-being of Thai people. The objective of this paper is to present the processes of developing Thai mental health indicator from 2000 to nowadays. The mental health indicator is a worthy and useful instrument, especially to investigate the country-wide happiness of Thai people in 2000 and 2005.

Methods

This paper is to review the both researches on Thai Mental Health Indicator (TMHI). The sample size of the 1st research on TMHI was the population from north-east region, but the 2nd population from all regions. . The determination of sample size was from the statistic formula. The both TMHI researches were split into 3 phases including: Phase I, it was to study the content validity. Phase II, it was to study the first construct validity, and Phase III, it was to study the second construct validity, reliability, concurrent validity, and normal value. In each time of developing the research instrument, the meeting of the mental health experts including psychiatrists, psychiatric nurses, psychologists and social workers was done to discuss the research data in each phase. The data collectors were nurses, psychologists, and social workers with training workshop until could use the research tool skillfully. Research

statistics were descriptive statistic, Factor analysis, Cronbach's Alpha coefficient, and Kappa statistic.

Results

The 2000's Thai Mental Health Indicator (TMHI) had 2 versions: full (66 items) and short (15 items) versions; with 4 domains including 1) mental state 2) mental capacity 3) mental quality 4) supporting factors); and with 20 sub-domains. The scores were divided into 3 groups: good, fair, and poor mental health. Adjusted in 2003, the Thai Mental Health Indicator (TMHI) had 2 versions: complete version (54 items) and short version (15 items) with the same 4 domains, but only 15 sub-domains. The scores were divided into 3 groups: good (118-162 points), fair (99-117 points), and poor mental health (98 points or below). The short version scores were also divided into 3 groups: good (33-45 points), fair (28-34 points), and poor mental health (27 points or below). The agreement study was found between the complete and short version TMHI with substantial results (kappa statistic 0.63, p-value <0.001).

Conclusion

The Thai Mental Health Indicator (TMHI) has been developed to be a reliable instrument for assessing the mental health of the Thai population under the context of Thai society and culture. The TMHI has been used to investigate the country-wide happiness of Thai people in 2001, 2005 and now. The results in three times could be compared to show the trend of happiness of Thai people and could be determined the policy of further promotion and prevention of mental health for Thai people.

Introduction

Thailand have developed the variety of instruments to measure mental health of Thai people such as Thai Mental Health Indicator (Suwanee Kiewkingkeaw, and others. 1987), The development of mental health indicator (Amphorn Otrakul, and others. 1997) WHO Quality of Life – BREF (THAI) Assessment (Suwat Mahatnirunkul, and others. 1997), The Norm Profile for The Thai Mental Health Questionnaire (Sucheera Phattharayuttawat, and others. 1999). These instruments had some weak points such as they didn't being covered with the mental health definition in the context of Thai culture; data collection was from patient population and hospital setting-not being national scale-population. This tool have developed since 2000 to measure mental health or well-being of all Thai people (happiness and mental health are the same subject in Thai culture). The aim of this paper is to present the processes of developing the Thai mental health indicators from 2000 to nowadays. Now this tool has been used nationwide.

Methods

This paper is to review the both researches on Thai Mental Health Indicator (TMHI). In 2000 the research on Thai mental health indicator in individual level was done at first. The 1429 study- population was selected with multi-stage sampling method from 11 provinces in North-East region of Thailand: Khonkean, Uponrajathani, Nakornrajasima, Kalasin, Leoi, Sakonakorn, Hnongkai, Roy-et, Buriram, Chaiyapum, and Amnajareon. In 2003 the research on the development and testing Thai mental health indicators – new version was done. The study-population was from all regions of Thailand: central, north, north-east, east, and south. The determination of sample size was from the statistic formula as the following:

$$n = \frac{Z^2 \alpha / 2 P (1-P)}{d^2}$$

$Z^2 \alpha / 2$ = Confidence level at 95 % (1.96)
P = prevalence of people with low mental health (28.4 %)
d = Maximum permissible error
= 10 % of 28.4 % (0.028)
N = 996.39

Owing to being the multi-stage stratified cluster sampling; the determination of sample size in 2000 research had to multiply design effect by 2: that was 996 (sample size) x 2 was 1,992. So each region had to collect total 400 cases. But in the later research, sample size was calculated from research items (157 items). Each item required 5-10 cases, so sample size was 1500 cases. However the determination of sample size of both researches was similar.

The inclusion criteria of study population

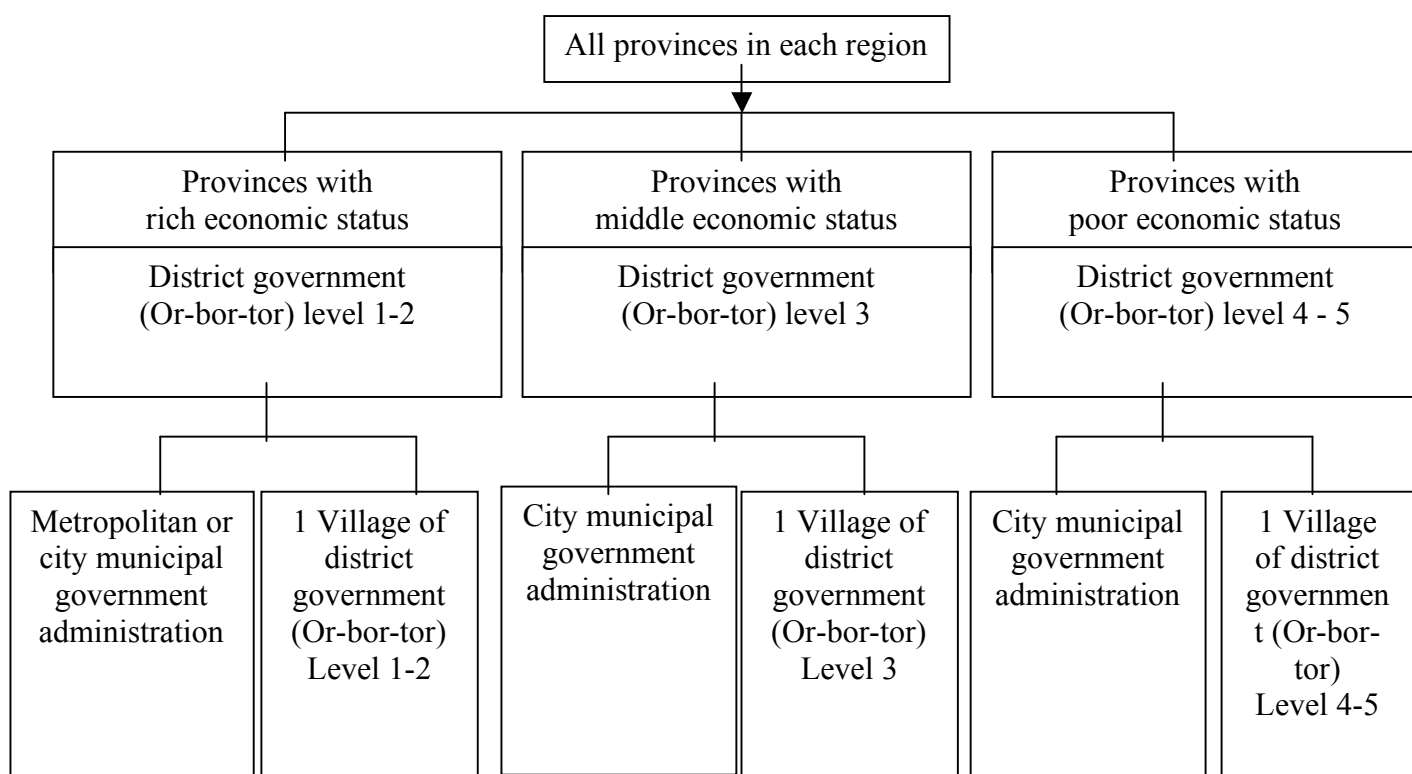
1. age between 15 years-old to 60 years-old
2. live in the village at least 1 year
3. can communicate, not dumb or deaf
4. cooperative

The exclusion criteria of study population

1. can not reply the all items of research questionnaire
2. being severe ill
3. being coma or become unconscious

The study population was divided into 3 groups according to the area of district government (Or-bor-tor : in Thai) included : 1) District government (Or-bor-tor) level 1-2 (rich economic status) 2) District government (Or-bor-tor) level 3 (middle economic status) and 3) District government (Or-bor-tor) level 1-2 (poor economic status) as show in below figure 1

Figure 1 : the sampling method in the second and the third phases of research



Note: The economic status was classified into 5 levels of district government according to the total yearly income of each district government that obtained from customs duty, tax, service charge etc. These levels included:

1. District government (Or-bor-tor) level 1 has total yearly income more than 20 millions (baht)
2. District government (Or-bor-tor) level 2 has total yearly income 12-20 millions (baht)
3. District government (Or-bor-tor) level 3 has total yearly income 6-12 millions (baht)
4. District government (Or-bor-tor) level 4 has total yearly income 3-6 millions (baht)

5. District government (Or-bor-tor) level 5 has total yearly income not more than 3 millions (baht)

The development of research tools in 3 phases

The research instruments were developed by the same principles in both times with 3 phases as following

Phase I :

In the first (2000) research on Thai Mental Health Indicator – TMHI, research instrument was developed by reviewing all related documents and researches both from Thailand and other countries. The first instrument with 157 items was used to collect data in phase II and III and analyze factors (Factor analysis) to study the construct validity. In this stage, the amount of items was reduced to 66. In the 2nd (2003) research on TMHI, the instrument with 66 items was developed again by reviewing additionally all related documents and researches both from Thailand and other countries with the mental health experts meeting. In this stage, the instrument had 80 items included 4 domains: 1) mental state, 2) mental capacity, 3) mental quality, and 4) supporting factors; and 21 sub-domains.

Phase II :

The Thai Mental Health Indicator – TMHI (2003), included 80 items, was studied the first construct validity with 2,024 study population who lived in the areas of metropolitan municipal government administration, city municipal government administration, and district government (Or-bor-tor) level 1-5 from 15 provinces in 5 regions. From data analysis and the mental health experts meeting to discuss the results, the TMHI remained the same domains and sub-domains, but adjusted some questions and reduced items from 80 to 73 items.

Phase III :

It was to study the second construct validity and norm of the instrument with 73 items from phase II. The data were collected with the same determination of sample size, but in new areas of 15 provinces. After analyzing data, the mental health experts' meeting was done to discuss the results. In this stage, the instrument was divided into 2 forms: complete form included 54 items and short form 15 items. After that, normal value of the both instruments was studied by separating people according to the value obtained, to be above average, average, and under average; and then the instruments were studied the reliability

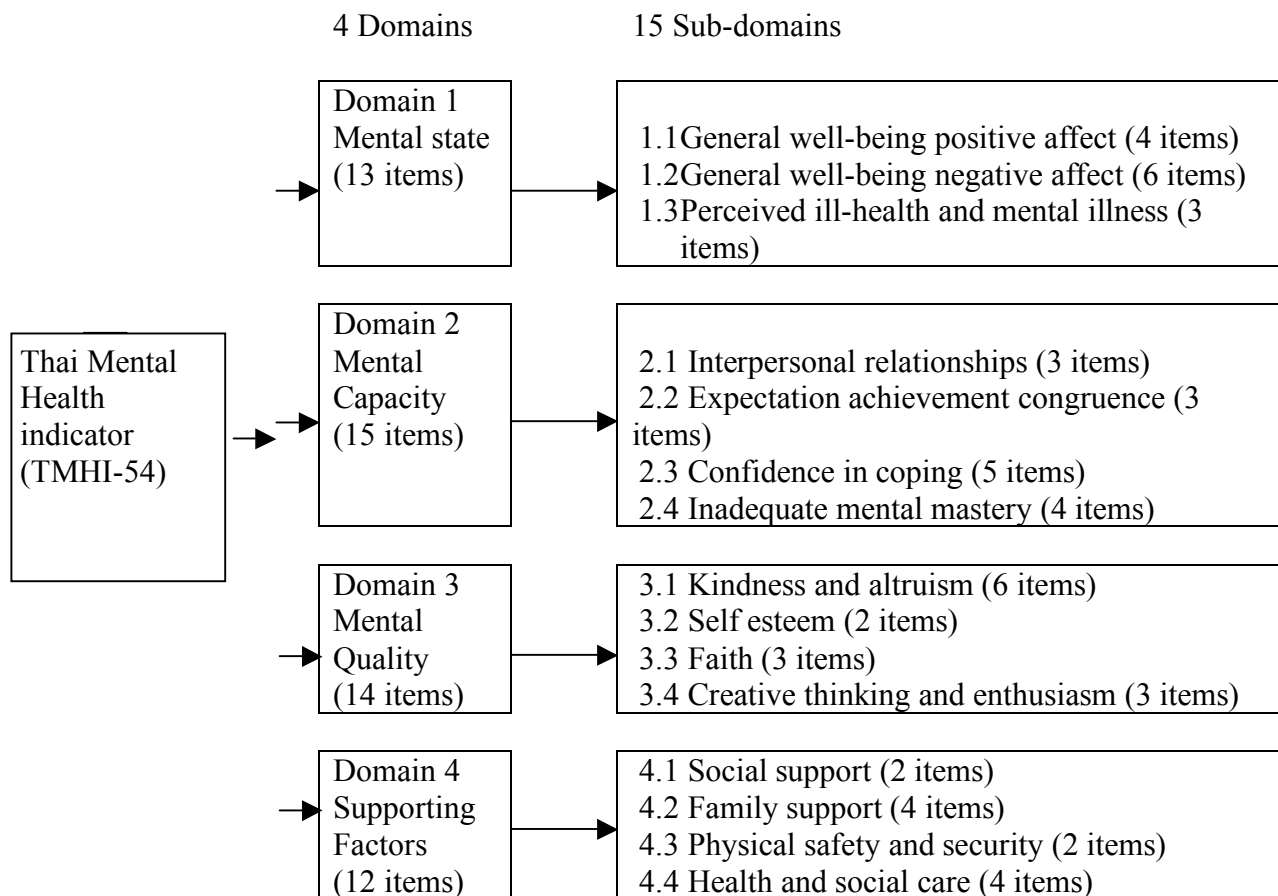
Data collectors were nurses, psychologists and social workers with training workshop until could use the research tool skillfully. Research statistics were descriptive, median and percentile to study the norm values, factor analysis to study the construct validity, Cronbach's Alpha coefficient to study the reliability, correlation coefficient to study the concurrent

validity, and Kappa statistic to study the agreement between the complete and brief Thai mental health indicator.

Results of development of Thai Mental Health Indicator – TMHI

1. The paper, Thai Mental Health Indicator – TMHI – new version (2003), was developed under the definition of mental health: “a good mental health or well-being results from mastering the competency of daily problem-solving, the potential to develop owner-self into a better quality of life, which covered intrapsychic goodness under changeable society and environment”. From the above definition, Thai Mental Health Indicator – TMHI – new version (2003) was classified into the same 4 domains as TMHI-2000 version, but reduced 20 sub-domains of TMHI-2000 versions to 15 sub-domains as show in Figure 2.

Figure 2 : Domains and sub-domains of Thai Mental Health Indicator (TMHI-54)



2. Comparison the change of Sub-domains in 2000 and 2003 according to below table1.

Thai Mental Health Indicator (TMHI)	2000	2003	Change
Complete version	20 Subdomains	15 Subdomains	<p>The Sub-domains that were disappeared :</p> <ol style="list-style-type: none"> 1. Body image and appearance 2. Activities of daily living 3. Recreation 5. Physical environment <p>Sub-domain that was combined :</p> <ol style="list-style-type: none"> 1. Altruism was combined to the sub-domain of kindness

3. The value of reliability (Cronbach's alpha coefficient) in domain 1 (mental state) was 0.83, domain 2 (mental capacity) 0.81, domain 3 (mental quality) 0.86, and domain 4 (supporting factors) 0.83 as the below table 2.

Table 2: the data of descriptive statistic and reliability value of domain 1, 2, 3, and 4 of Thai Mental Health Indicator (TMHI) - Complete version (n = 2,401)

Factor	Number of item	\bar{x}	S.D.	Potential range	Obtained range	Cronbach's alpha coefficient
Domain						
1 Mental state	13	29.83	4.70	0-39	5-39	.83
2 Mental Capacity	15	28.0	4.97	0-45	8-45	.81
3 Mental Quality	14	27.75	5.12	0-42	0-42	.86
4 Supporting Factors	12	22.89	4.59	0-36	0-36	.83

4. The norm values of Thai Mental Health Indicator – TMHI-54 and TMHI-15 (full TMHI and short TMHI). The median of Thai Mental Health Indicator – TMHI-54 was 109,

the points at 25th and 75th percentile were 99 and 117 points respectively and could be classified into 3 groups of mental health as the following

Thai Mental Health Indicator – TMHI-54

118 – 162 = better mental health
 99 – 117 = normal mental health
 98 points or below = lower mental health

Thai Mental Health Indicator (TMHI) - short form

35 – 45 = better mental health
 28 – 34 = normal mental health
 27 points or below = lower mental health

For more detail as the following table 3.

Table 3 : The norm values of Thai Mental Health Indicator – TMHI-54 and TMHI-15 (full TMHI and short TMHI) (n = 2,390)

Statistic	TMHI-54	TMHI-15
Mean	108.30	31.02
Standard deviation	14.46	4.75
Median	109.00	31.00
25 th percentile	99	28
75 th percentile	117	34
Maximum	161	45
Minimum	39	9
Potential rang	0-162	0-45
Obtained range	39-161	9-45
range	122	36

5. In the study of agreement between TMHI-54 (Full TMHI) and TMHI-15 (short TMHI), the kappa statistic was equal to 0.63 with statistical significant ($p < 0.001$) and 95 % CI = 0.60-0.66 as the following table 4.

Table 4: the value of agreement study between TMHI-54 and TMHI-15

Pairs	Kappa statistic	95 % CI
TMHI-54 and TMHI-15	0.63	0.60 – 0.66

Discussion

The development of Thai mental health indicator has been done successively since 2000. The first instrument was separated into 2 forms: complete form (66 items) and short form (15). In the first time, the study population was only in the north-east region of Thailand, not covered all regions. The study was done again in 2003 with study population from all 5 regions of Thailand. This instrument was rather complete because it was constructed under the context of Thai society, especially in the domain of mental quality that emphasized the kindness and altruism. This domain is in accordance with the principle to live of Buddhism that stresses having a good mental health and feeling of happiness due to having a normal mind, knows what happens or keep own mind normal thought one being contacted with stimuli. The keeping own mind normal when facing a problem is in accordance with the domain of supporting factors and with the Prathampidok that the other happiness is the one derived from the external

In this study, normal value (normative model) in conjunction with the data analysis at the 25th and 75th percentile is used to determine the level of mental health. Because the distribution of scores is non normal distribution, the scores are divided into 3 standard groups: good, fair, and poor mental health. Normative model is used due to not having whichever instruments or psychiatrist whoever could diagnose exactly whose mental health is normal or abnormal. So the scores of study population are be used as a norm.

The TMHI includes 2 forms: complete form (54 items) and short form (15 items). To determine which form to be used would be better depends on the objective of use; that is if a user requires the mental health with complete and cover with all sub-domains, the complete TMHI is recommended, but a user requires the mental health with rapid and convenient condition, the short TMHI is recommended.

The TMHI has been developed to be a reliable instrument for assessing the mental health of the Thai population under the context of Thai society and culture. It has been used to investigate the country-wide happiness of Thai people in 2001, 2005 and now. The results of the three time - surveys could be compared to show the trend of happiness of Thai people and could be determined the policy of further promotion and prevention of mental health for Thai people.

Conclusion

Thailand developed the Thai mental health indicator in 2000 and had the complete research instrument with the cover in all domains to examine the mental health of Thai people in 2003. In the survey of mental health of Thai people with TMHI-15 in 2001, it was

found that Thai people with poor mental health were 28.4 percents, and good and fair mental health 71.6 percents; meanwhile the survey again in 2003, it was found that Thai people with poor mental health increasingly were 31.9 percents. In 2007, department of mental health, ministry of public health, Thailand has been surveying the mental health of Thai people again, and now the process is still on data analysis.

This paper is to present the processes of developing the Thai mental health indicator from 2000 to nowadays. The research instrument was used extensively to examine the mental health of Thai people to find out the further strategies of promotion and prevention of mental health in Thai people.

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