



## CHAPTER V

### CONCLUSION AND DISCUSSION

This chapter consisted of four parts. The first part was the conclusion of the study findings. The second part was the discussion. The third part was the implication and recommendation. The last one was limitation of the study

#### **Conclusion of the study findings**

The purpose of the study were to study the construct of quality of life in Thai patient with post MI, to development and test psychometric properties of the Quality of life in Thai patient with post MI instrument, and to find the norm of the Quality of life in Thai patient with post MI. Therefore conclusion were presented into: 1) characteristic of the participants, 2) construct of quality of life in Thai patient with post MI, 3) development and test psychometric properties of the Quality of life in Thai patient with post MI instrument, 4) the norm of the Quality of life in Thai patient with post MI.

#### **1) Characteristic of the participants**

The participant's age ranged from 28-90 years with a mean of 60.67 (SD= 107.35). The majority of participants were male (67.7%), marriage (74.7%), and Buddhism (94.7%). Educational background of participants was at various levels: primary level (46.4%), secondary and bachelor levels were the second and third. All participants were distributed in various status of working: not working (26.8%), employee (19.0%), and government officers (17.3%). the incomes were varying from 5,000-20,000 baht per month which were enough for living (73.0%). Most of the

participants have got disease at the range of two to six months (34.03%), seven to twelve months (23.77%) and thirteen to twenty four months (22.05%). They were treated with both medicine and intervention (52.1%). Half of the participants had other disease such as Hypertension, Diabetes Mellitus, and Hyperlipidemia which was the first three diseases founded in theses group of participants.

## **2) Construct of quality of life in Thai patient with post MI**

To construct the Quality of life in Thai patient with post MI, the qualitative study was employed to develop a scheme for categorizing the content from in-dept interview data. As a result, 8 themes were emerged and presented as: 1) Physical and function 2) Self care 3) Symptoms 4) Psychological aspect 5) Spiritual aspect 6) Social aspect 7) Economics aspect 8) Family aspect. The items were generated following each theme, categories, and subcategory from data that was grounded in-depth interview. The preliminary draft of the Quality of life in Thai patient with post MI consisted of 82 items.

The preliminary draft of the instrument was reviewed by three experts who were specialist and conducted research in qualitative study. All experts agreed that these items represented the phenomena but some items were redundancy. Therefore the preliminary draft needed to be modified by following experts' suggestion. The draft of QOL instrument composed six dimensions and 68 items. The six dimensions were presented as 1) physical capacity, 2) physical health, 3) psychological comfort, 4) economic stability, 5) family tie and social engagement, and 6) spiritual health.

### **3) Development and test psychometric properties of the Quality of life in Thai patient with post MI instrument.**

To test the face validity, the draft of QOL instrument composed six dimensions and 68 items were considered by thirteen experts: two experts in quality of life, three experts in development instrument, one coronary disease physician, one rehabilitation physician, one clinical nurse specialist, two cardiac teachers, one social science expert, and two medical nursing teachers. The six items were deleted because of redundancy or not congruence with the theme. The final draft of the quality of life instrument in Thai patients with post myocardial infarction had sixty two items in six domains. Six domains included 1) physical capacity, 2) physical health, 3) psychological comfort, 4) economic stability, 5) family tie and social engagement, and 6) spiritual health.

Before conducting the factors analysis, the item analysis was evaluated by using Pearson product-moment correlation. As the results, all items showed the correlation coefficient ranged from  $-.093$  to  $.831$  and most of them were statistically significant  $p < .01$  and  $.001$ . Although some of them revealed low consistent correlate with other items, the ratio of item to item correlation value between  $0.20-0.70$  was higher than 50%. Therefore the final draft of the instrument consisted of 62 items.

When employing principal component factor analysis with varimax rotation, the final draft of the TQOL was composed of 9 factors, 45 items and explained 56.70% of total of variance. The identified factors emerged and were labeled as follows: 1) symptom and complication heart disease, 2) Psychological comfort, 3) Family tie, 4) Adapted activity of daily living, 5) Economic stability, 6) Spiritual health, 7) Social engagement, 8) Basic physical capacity, 9) Feeling empower.

Examining the reliability of the resulting factors, it showed that the internal consistency on the total of the TQOL was high reliability with  $r = .93$  which was acceptable for a new instrument. Standardized alpha for subscale were range from .72 to .91. When testing the concurrent criterion-related evidence of validity by investigating correlation among nine TQOL factors and the SF-36 and Health-related Quality of life questionnaires. The result demonstrated that TQOL instrument had statistically significant correlation with SF-36 ( $r = .62, p < .01$ ), and MacNew Health-related Quality of life questionnaires ( $r = .65, p < .01$ ). As the result, there were sufficient empirical evidences supported for validity of the TQOL.

#### **4) Norm of the Quality of life in Thai patient with post MI.**

Norm referenced testing addresses the question "How does the average person score on the test?" In this study, a researcher transformed raw scores to t-score and assigned five levels of QOL in Thai patient with post MI with range between minimum and maximum t-scores.

The norms of QOL in Thai patients with post MI for this study were presented as 1) very poor level of QOL referred to t-score ranged from 20 to 31 (raw score = 76-105), 2) poor level of QOL referred to t-score ranged 32 to 43 (raw score = 106-125), 3) fair level of QOL referred to t-score ranged from 44 to 56 (raw score = 126-149), 4) good level of QOL referred to t-score ranged from 57 to 68 (raw score = 150-160), and 5) very good level of QOL referred to t-score ranged from 69 to 80 (raw score = 161-189).

## **Discussion**

The discussion of the results of this study was presented into: 1) the evidence of validity, and 2) the evidence of reliability.

### **1) Discussion of the evidences of validity**

The transition from theoretical to an operational definition indicates a principal component of validity of the instrument. Conceptual and operational variable relation is measurement assumption which can be supported by validity testing (Mishel, 1998: 244-245). There were two types of validity employed for developing the TQOL in this study such as construct validity and criterion-related validity. Thus the discussion about the evidence supporting the construct validity and criterion-related validity of TQOL was presented as the following.

#### **Construct validity evidences**

Construct validity is directly concerned with the theoretical meanings of a measure, and the logical relationship of the measurement concept to other concepts (Jacobson, 1997). Principal component factor analysis was conducted for testing the evidence of construct validity in 526 participants who had experience of post MI. Using criterions for extraction the factor from principal component factor analysis with varimax rotation including 1) eigenvalues of significant factors were greater than 1.0, 2) a loading cutoff point was .50, and 3) the underlined factors were meaningful interpretability (Netemeyer, Bearden, & Sharma, 2003), the 17 items were eliminated in this analysis such as item 2, 3, 4, 13, 18, 32-38, 43-45, 55 and 57. Since loading cutoff points of all were less than .50, the results demonstrated 9 factors and 45 items and explained 56.70% of total of variance.

The resulting nine factors were labeled as: 1) symptom and complication heart disease, 2) Psychological comfort, 3) Family tie, 4) Adapted activity of daily living, 5) Economic stability, 6) Spiritual health, 7) Social engagement, 8) Basic physical capacity, 9) Feeling empower. The discussion about resulting factors was presented as the following.

#### **Factor 1: symptom and complication heart disease**

Factor 1 consisted of 7 items with strong factor loading from .62 to .80 and accounted for 8.24 % of variance with an eigenvalue of 5.11. They were items in the content of symptom & complication. The seven items were items 7, 8, 9, 10, 11, 12, and 14. The majority of items revealed as representative items based on qualitative study theme 1 and 2 “Physical capacity and physical health”. All of these loading items were appropriately revealed in this cluster and this supported qualitative study in phase I and many researches that revealed “symptom and complication heart disease was a very important for quality of life pattern in patient with MI.

Olson, et al (2003) found that in women undergoing coronary angiography for suspected myocardial ischaemia, chest pain symptoms have a significant impact on health-related QOL. Since the women perceived that cardiac symptoms limited their ability to perform household tasks. QOL profile scores of the patients declined as the severity of the chest pain reported increased.



**Factor 2: Psychological comfort**

The second factor included 6 items with factor loading ranged from .55 to .81 and accounted for 7.87 % of variance with an eigenvalue of 4.88. The six items were items 27, 28, 29, 30, 31 and 56. They were drawn from theme 3 “psychological comfort” in the qualitative phase 1. All of these loading items were appropriately revealed in this cluster and this supported qualitative study in phase I and many researches that revealed “psychological comfort” was a very important component for quality of life in patient with MI.

**Factor3: Family tie**

The third factor included 5 items, accounting for 6.55 % of variance with an eigenvalue of 4.06. Factor loading of the third factor ranged from .55 to .83. The five items were items 46, 47, 48, 49, and 62. When examining the item content, the finding was that all of the items in this factor demonstrated as “family tie” For example

**Factor 4: Adapted activity of daily living**

The forth factor included 6 items, accounting for 6.01 % of variance with an eigenvalue of 3.73. Factor loading of the forth factor ranged from .57 to .77. They were items in the content of Health Maintenance. The six items were items 15, 19, 20, 21, 22, and 23.

**Factor 5: Economic stability**

The fifth factor included 4 items, accounting for 5.26 % of variance with an eigenvalue of 3.26. Factor loading of the forth factor ranged from .60 to .82. They

were items in the content of Economic Stability. The four items were items 39, 40, 41, and 42.

**Factor 6: Spiritual health**

The sixth factor included 4 items, accounting for 5.14 % of variance with an eigenvalue of 3.18. Factor loading of the fourth factor ranged from .65 to .85. They were items in the content of Health Maintenance. The three items were items 58, 59, 60, and 61

**Factor 7: Social engagement**

The seventh factor included 5 items, accounting for 5.02 % of variance with an eigenvalue of 3.12. Factor loading of the five factors ranged from .50 to .74. They were items in the content of Social Relationship. The four items were items 50, 51, 52, 53 and 54.

**Factor 8: Basic physical capacity**

The eighth factor included 5 items, accounting for 4.88 % of variance with an eigenvalue of 3.30. Factor loading of the fourth factor ranged from .65 to .79. They were items in the content of Basic Physical capacity. The three items were items 1, 5, 6, 16, and 17.

**Factor 9: Feeling empower**

The ninth factor included 3 items, accounting for 3.59 % of variance with and eigenvalue 2.22. Factor loading of the fourth factor ranged from .62 to .69. They were items in the content of Feeling Empower. The three items were items 24, 25, and 26.



### **Criterion-related validity evidence**

In this study, concurrent validity was assessed by comparing the TQOL to other accepted measurement that also represented in the phenomena of quality of life. The results revealed that the TQOL significantly correlation with SF-36 ( $r = .62, p < .01$ ), and MacNew Health-related Quality of life questionnaires ( $r = .65, p < .01$ ). It implied that TQOL instrument would have an accuracy of a measure QOL in patient with MI since it correlated with SF-36 and MacNew Health-related Quality of life. SF-36 and MacNew Health-related Quality of life were other accepted measurement of quality of life in generic measure (Vedio, et al., 2000; Rinfret, et al., 2001; Bengtsson, Hagman, & Wedel, 2001; Smith, Taylor, & Mitchell, 2000) and a disease-specific measure (Dixon, Lim, & Heller, 2001; Hung, et al., 2004; Asadi-Lari, et al., 2003).

### **2) Discussion of the evidence reliability**

The Cronbach's alpha coefficient of internal consistency for the QOL revealed .93. According to Nunnally and Bernstein (1994) guideline proposed that coefficient alpha is acceptable at .70 for early developed instrument, and expected to be .80. Therefore, evidence of reliability of the TQOL demonstrated sufficient reliability for a new instrument. However, it represents a high value that may be affected from many factors surrounding the measurement situation (Walz, Strickland, & Lenz, 1991). First, more items were included in the TQOL. Second, higher value of the total test variance (variance = 56.70).

Item-subscale correlations of the TQOL were examined to determine the homogeneity of the TQOL. According to Ferketich (1991), homogeneity is support when large percentages of the scale items have item-total subscale correlation between .30

to .70. However, Streiner and Norman (1995) recommended that item item-total subscale correlation more than .10 was acceptable. In this study all items reveal sufficient item-total correlation by representing ranged from .10 - .62. Therefore, the overall of the TQOL indicated acceptable item-total subscale correlation.

Considering standardized alpha of each subscale found all of nine factors reveal sufficient item-subscale correlation. The internal consistency reliability of each subscale in TQOL instrument was found and the alpha value demonstrated sufficient correlation ranged from .72 to .93. Reliability of Thai QOL instrument is good and acceptable both the whole instrument and each dimension because the value of reliability is close to one.

### **Implication and recommendation**

#### **Implication for future research**

This study was the preliminary quality of life instrument in Thai patients with post Myocardial Infarction which is quite good in psychometric properties but it still need more test to be a standard QOL instrument in the future. It is more precise to measure QOL in Thai patients by using this instrument because it was developed from the concept and the meaning of quality of life in Thai context.

Norms of quality of life in Thai patients with post MI was developed from 526 participants but with the limitation of time to study, it should be confirm again with a large number of participants.

This QOL instrument has an accepted correlation for criterion related validity, so that it can be used to measure quality of life as a specific instrument instead of other Western QOL instrument.

### **Recommendation**

The QOL instrument in Thai patients with post MI is well developed according to the theoretical of development a new instrument. The result of the measurement will be accurate enough to use as the data base for evaluating the health care, planning the care plan to improve the quality of life of patients with post MI.

This instrument is not to long to do, easy to do, and short time to do so that it will benefit and practical to evaluate the patient's quality of life in the clinical practices.

### **Limitation of the study**

Limitations of this study related to the study design, data collection, and data analysis. To account for this, firstly, the sample was not distributed because participants of each hospital were not equal as planed that was 60 participants for each hospital. The sample distribution was 35% the lowest and 148% the highest. The total planed was 600 participants but collected only 526 participants. This reason may affect the generalization of the population.

Secondly, the limitation of the study includes possible errors in method of data collecting. The data collecting plan was collecting data in out patient clinic but with limitation of the sample, the same day of heart clinic. Data collection was changed to collection by mail. Researcher must have patient's name list from ICU or CCU and then phone to the patient and inform consent to patient. After permission, all five instruments and inform consent sheet was sent to him/her. Some hospitals were done by both types of data collection. This event may be cause some errors in this study because some participants may not meet the inclusion criterion in detail such as chronic

except post MI. Some cases were delete which was one of the causes that collecting data not meet the sample size of 600 participants

Thirdly, five instruments were used in this study. It took forty five to sixty minutes to complete all instruments and most of the participants are elderly. This situation may be decreasing the participant's attentions to answer the instruments.

Lastly, it was the limitation in time of study, norms was calculated from only 526 participants. Norms should be done from a large sample size that can be representative the quality of life in Thai patients with post myocardial infarction.