CHAPTER 3

Methodology

This chapter describes the methodology of this study. It consists of research design, population and sample, research instruments, protection of human subjects, data collection procedure, and data analysis procedure.

Research Design

A descriptive correlational design was used to examine work motivation and organizational commitment, and to examine the relationships between work motivation and each component of organizational commitment of nurses in affiliated hospitals of Dali University, the People's Republic of China.

Population and Sample

Population

The population of this study was 1,091 nurses who had worked for at least one year in two affiliated hospitals of Dali University, Yunnan Province, the People's Republic of China. Among these two hospitals, there were 562 nurses working in the Affiliated Hospital of Dali University, and 529 nurses working in the Third People's Hospital of Yunnan Province.

Sample

The sample size of this study was calculated by using the formula of Yamane (1978) as follows:

$n = N / [1 + N (e)^2]$

N = total number of population

n = sample size

e = the error in the sample defined as 5%

According to this formula, the sample size that was needed in this study was 293 nurses. Considering the possible loss of subjects, 20% (Israel, 2003) of the sample size (59 nurses) was added into the sample. Therefore, the total sample was 352 nurses.

The inclusion criteria for sample selection was the nurses who were willing to participate in the study.

The exclusion criteria were as follows: 1) nurse administrators: head nurses, supervisors and directors of Nursing Department; 2) nurses who were on vacation, were on maternity leave, or participated in the reliability test.

Proportional stratified random sampling method was used in this study as following steps:

Step 1: According to the proportion of population of nurses and needed sample size, proportional random sampling method was used to determine the number of nurses in each hospital and clinical nursing department (Table 1). The clinical nursing departments consisted of Medical Department, Surgical Department, Pediatric Department, Obstetrics-Gynecology Department, Intensive Care Unit, Emergency Room, Operation Room, and Out-patient Department, totaling eight main departments.

Step 2: A random draw sampling method determined nurses from the name lists in the Nursing Department. The sampling process by replacement method was continued until sample size reached 352 nurses.

Table 1

Number of Population and Sample in each Hospital and Clinical Nursing Department

Clinical Nursing Department	The Affiliated Hospital of Dali University		The Third People's Hospital of Yunnan Province	
	population	sample	population	sample
Medical Department	177	57	249	80
Surgical Department	142	46	83	27
Pediatric Department	46	15	25	8
Obstetrics-Gynecology Department	40	13	42	14
Intensive Care Unit	37	12	33	11
Emergency Room	44	14	36	12
Operation Room	41	13	29	9
Out-patient Department	35	11	32	10
Total	562	181	529	171

Research Instruments

The instrument used in this study was a set of questionnaires consisted of three parts as follows:

Part 1: Demographic Data Form

The demographic data form was developed by this researcher to collect the personal characteristics. It consisted of gender, age, marital status, educational level, employment status, professional title, working experience, working department, working shift, and average personal income. This questionnaire was designed as check list and open-end questions.

Part 2: The Work Preference Inventory (WPI)

The Work Preference Inventory (WPI) was developed by Amabile et al. (1994) and translated into Chinese version by the researcher. This measurement encompassed two scales (intrinsic motivation and extrinsic motivation) with four sub-scales, and it consisted of 30 items divided into four subscales: 1) challenge (5 items), 2) enjoyment (10 items), 3) compensation (5 items), and 4) outward (10 items). A note of caution was that five items were reversed score in Challenge (item 9 and 14), Compensation (item 16 and 22) and Outward (item 1). A 4-point Likert scale was used to present the extent of how true it was for participant, the range being from 1=Never or almost never true of me to 4=Always or almost always true of me. The higher score, the higher work motivation. The original author, Amabile (Personal communication, 2016) has approved the researcher's request for interpreting the level of work motivation according to mean scores were classified into three levels as follows:

Mean score 3.01-4.00 means high level of work motivation
Mean score 2.01-3.00 means moderate level of work motivation
Mean score 1.00-2.00 means low level of work motivation

Part 3: TCM Employee Commitment Survey

The TCM employee commitment survey was developed by Meyer, Allen and Smith (1993). The Chinese version translated by Chen (2011) was used. This survey consisted of 18 items and included three subscales and each subscale had 6-items: 1) affective commitment scale (ACS), 2) normative commitment scale (NCS), and 3) continuance commitment scale (CCS). The score was rated with a 7-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. A note of caution was that four items were reversed score in ACS (item 3, 4 and 5) and NCS (item 1). The mean score was a summing and averaging of items, the score range was between 1 to 7. Higher score indicated higher organizational commitment. The original author, Meyer (Personal communication, 2016) has approved the researcher's request for interpreting the level of each subscale of organizational commitment according to mean scores were classified into three levels as follows:

Mean score 5.01-7.00 means high level of organizational commitment

Mean score 3.01-5.00 means moderate level of organizational commitment

Mean score 1.00-3.00 means low level of organizational commitment

Validity of the Research Instrument

The validities of WPI and TCM Employee Commitment Survey have been tested when developed the original instruments, and the results reported that they were within acceptable range. In this study, the researcher used the original instruments and without any modification. Thus, the researcher didn't test the validity of these two instruments in this study. The Work Preference Inventory (WPI) was translated into the Chinese version by the researcher using translation and back-translation methods (Waltz, Strickland, & Lenz, 2005) without any modification. The translation processes as follows:

1. The original WPI (English version) was translated into Chinese by the researcher.

2. The Chinese version of WPI was translated backward to English by a bilingual nursing expert who was blinded to the original English version.

3. The back-translated English version of WPI was confirmed for the equivalent of this translated version with the original version by an English expert and the research advisor.

Reliability of the Instruments

The internal consistency reliabilities of WPI and TCM Employee Commitment Survey were tested among 20 nurses who were randomly selected and had same characteristics with the subjects at the Affiliated Hospital of Dali University using Cronbach's alpha (Cronbach, 1951). The Cronbach's alpha coefficient of intrinsic motivation, extrinsic motivation and overall work motivation were 0.81, 0.83, and 0.81, respectively. Moreover, those of each component of organizational commitment with the affective commitment, continuance commitment, and normative commitment were 0.80, 0.88, and 0.80, respectively, and all of were accepted (Appendix A).

Protection of Human Subjects

Before data collection, the research proposal was approved by the Research Ethic Review Committee of the Faculty of Nursing, Chiang Mai University, Thailand. A research consent form was sent to the subjects to insure the protection of their human rights before data collection. All of subjects were informed about the purpose and the method of this study. They also were informed that participation in the study was voluntary and they had the right to refuse, stop and withdraw from this study in any time without being punished and losing any benefits. A statement was included in a cover letter to guarantee confidentiality and anonymity of individual response. Only code numbers were used for questionnaires follow-up in case there would be no response from some subjects. Information provided by the subjects only was used for study and kept confidential. The results of the study were presented as a group.

Data Collection Procedure

Data was collected using a set of questionnaires. The following procedures were performed:

1. The researcher submitted the research proposal to the Research Ethics Commitment of the Faculty of Nursing, Chiang Mai University to review.

2. After receiving the approval from the Research Ethics Review Committee of the Faculty of Nursing, Chiang Mai University, the researcher applied the official letters for data collection from the dean of the Faculty of Nursing, Chiang Mai University. The research proposal, application letter for permission to collect data, and two copies of data collection tools were submitted to the two directors of Nursing Departments of these two hospitals for approval to collect data.

3. The researcher explained the purpose and procedure of data collection of this study to the two directors of Nursing Departments and got their permission and support.

4. The proportional stratified random sampling method was used to determine the number of nurses in each hospital and each clinical nursing department, then randomly draw sampling method was used to select staff nurses from the name lists of nurses in

Nursing Departments of each hospital. The nurses who have participated in the reliability test were excluded from the sampling.

5. The researcher asked for one coordinator from the Nursing Department in each hospital to help the researcher to distribute and collect the questionnaires. The research objectives, questionnaires introduction, specific data collection procedures and participates' right were clearly explained to the coordinators before the two coordinators started to work. The coordinators were staff nurses working in the Nursing Department, and not the subjects of data collection.

6. Before distributing the questionnaires, the researcher prepared a package of questionnaire for every sampled nurse. Each package included an Information Sheet for Study Participant, a Volunteer Research Agreement Form, a set of questionnaires consisted of three parts and an envelope.

7. Three hundred and fifty-two questionnaires were distributed by the researcher and coordinators to all subjects with a request for cooperation to complete the questionnaire in their free time. The subjects were asked to return the questionnaires in sealed envelopes within two weeks in the locked box provided in Nursing Department, and the box could be opened only by the researcher.

8. There were 352 (100%) questionnaires returned within two weeks, the researcher checked the completeness for any missing data of all returned questionnaires before data analysis. There were 47 questionnaires that were not completed and excluded, the valid response rate was 86.65% (305÷352×100%), finally, 305 questionnaires were used for data analysis and 104.09% of the calculated sample.

Data Analysis Procedure

Before data being analyzed, the data for each individual unit were scrutinized by the researcher. The Statistical Package for the Social Science (SPSS) version 13.0 was used for data analysis. The significant level was set at .05. The data analysis procedures were performed as follows:

1. Demographic data was analyzed by using frequency, percentage, range, mean and standard deviation.

2. Scores of work motivation as perceived by nurses were analyzed using mean and standard deviation of each facet.

3. Scores of organizational commitment as perceived by nurses were analyzed using mean and standard deviation of each component.

4. Before testing relationships between work motivation and each component of organizational commitment, the data distributions of work motivation and each component of organizational commitment were tested by Kolmogorov-Smirnov (KS) statistic test, and all of data showed normal distribution. Therefore, Pearson's Correlation were used to test the relationships between work motivation and each component of organizational commitment. The direction of the relationships was positive. According to Burns and Grove (2012), the level of relationship was decided based on the correlation coefficient (r) value, $r \leq .30$ was considered as a weak relationship; $.30 \leq r \geq .50$ was considered as a moderate relationship; and $r \geq .50$ was considered as a strong relationship.