

## **CHAPTER 3**

### **METHODOLOGY**

This chapter describes the methodology of the present study. It includes a description of the research design, settings, population and sample, research instruments, protection of human rights procedures, data collection procedures, and data analysis procedures.

#### **Research Design**

A descriptive correlational research was designed to explore the relationship between each dimension of communication satisfaction and organizational effectiveness among nurses in university hospitals, Kunming, the People's Republic of China.

#### **Population and Sample**

##### **Population**

The population of this study included 6,137 nurses who were working in six university hospitals of Kunming Medical University (KMU), China. There were six university hospitals of KMU provide 24 hours service in Kunming city, including: the First Affiliated Hospital of KMU (1<sup>st</sup>AH), the Second Affiliated Hospital of KMU (2<sup>nd</sup>AH), the Third Affiliated Hospital of KMU (3<sup>rd</sup>AH), the Fourth Affiliated

Hospital of KMU (4<sup>th</sup>AH), The Affiliated Kunhua Hospital of KMU (KHH), and The Affiliated Yanan Hospital of KMU (YAH). The researcher obtained permission for data collection from only four hospitals, 1<sup>st</sup>AH, 2<sup>nd</sup>AH, 3<sup>rd</sup>AH and 4<sup>th</sup>AH.

### Sample

The sample size of this study was calculated by using the formula of Yamane (1973) as follows:

$$n = \frac{N}{1 + N(e)^2}$$

N=total number of population

n=Sample size

e=the error in the sample, defined as 5%

The sample size  $n=6137 \div (1+6137 \times 0.05^2)=376$

The sample size need in the study was 376. Considering the loss of the subjects, 20% (Israel, 2003) of the sample size (75) was added into the sample, making a total of 451.

Step 1: Proportional random sampling method was used to determine the number of nurses in each hospital. According to proportion of sample size, the number of nurses in each university hospital was calculated as follows:

Table 1

*Number of Population and Sample*

University Hospitals	Number of Population	Number of Sample
1 <sup>st</sup> AH	1718	190
2 <sup>nd</sup> AH	956	106
3 <sup>rd</sup> AH	545	61
4 <sup>th</sup> AH	850	94
KHH	1336	-
YAH	732	-
Total	6137	376

Step 2: Randomly drawn sampling selection of nurses was done from the list of nurses working in each clinical nursing department in each hospital. Medical department, Surgical department, Pediatric department, Obstetric-Gynecology department, Intensive care unit, Operating room, Emergency room, and Out-patient department were involved in this study.

### **Research Settings**

Data were collected from Medical department, Surgical department, Pediatric department, Obstetric-Gynecology department, Intensive care unit, Operating room, Emergency room, and Out-patient department in the First Affiliated Hospital of KMU, the Second Affiliated Hospital of KMU, the Third Affiliated Hospital of KMU, and the Fourth Affiliated Hospital of KMU, the People's Republic of China.

## **Research Instruments**

The instruments used in the study were a questionnaire consisting of three parts:

### **Part 1: Demographic Data Form**

This form was used to gather demographic information of each subject. It consisted of clinical area, age, marital status, education level, present position, number of working years.

### **Part 2: Communication Satisfaction Questionnaire (CSQ)**

The Communication Satisfaction Questionnaire (CSQ) was developed by Downs and Hazen (1977). The instrument includes eight dimensions: 1) Communication climate, 2) Supervisory communication, 3) Organizational integration, 4) Media quality, 5) Co-worker communication, 6) Corporate information, 7) Personal feedback, and 8) Subordinate communication. The CSQ consists of 40 items with five items for each of the eight dimensions. Items are rated on a 7-point Likert scale ranging from 1 = very dissatisfied to 7 = very satisfied. In this study, the researcher used 7 dimensions of the CSQ because the eighth dimension, “subordinate communication”, is aimed at personnel in their role as staff nurse and not nursing supervisors. The mean score was a summing and averaging of items, the score range was between 1 and 7. The higher score, the higher the perception of communication satisfaction. The mean score was classified into three levels base on Best and Kahn (2003) as follow:

Mean score 1.00-3.00 = low level of communication satisfaction

Mean score 3.01-5.00 = moderate level communication satisfaction

Mean score 5.01-7.00 = high level communication satisfaction

### **Part 3: Index of Perceived Organizational Effectiveness (IPOE)**

Index of perceived organizational effectiveness was used in this study was developed by Mott (1972). The instrument consists of 8 items, 3 items of productivity, 4 items of adaptability, and 1 item of flexibility. Scores for each item ranged from: 1=very low to 5=very high. The mean score was a summing and averaging of items, the score range was between 1 and 5. Higher scores indicate higher organizational effectiveness. The level of organizational effectiveness was interpreted base on Best and Kahn (2003) as follow:

Mean score 1.00-2.33 = low level of organizational effectiveness

Mean score 2.34-3.66 = moderate level organizational effectiveness

Mean score 3.67-5.00 = high level organizational effectiveness

### **Reliability of Research Instruments**

The internal consistency reliability of CSQ was tested among 20 randomly selected nurses with the same criteria as the subjects at the study setting. The reliability of CSQ was 0.98, and the Cronbach's alpha coefficient of communication climate, supervisory communication, organizational integration, media quality, co-worker communication, corporate information and personal feedback were 0.91, 0.92, 0.91, 0.91, 0.84, 0.94, 0.90, respectively.

The internal consistency reliability of IPOE was tested among 20 randomly selected nurses with the same criteria as the subjects at the study setting. The reliability of IPOE was 0.85.

### **Protection of Human Subjects**

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

### **Data Collection Procedure**

Data were collected using questionnaires by the following procedures:

1. After receiving the approval from the Research Ethics Review Committee of Faculty of Nursing, Chiang Mai University, the research proposal, application letter for permission to collect data, and a copy of data collection tools were submitted to the directors of nursing department of the six hospitals.

2. Research subjects were selected from the name lists of nurses using a random sampling method.

3. The head nurses were informed about research aims and research procedures in order to getting understanding and support of the research.

4. The researcher asked for one coordinator of the nursing department in each hospital to assist the researcher to distribute the questionnaires, while objectives and specific procedures of research were clearly explained. All participants in the study were requested for cooperation to complete the questionnaires in their available time.

5. The subjects were asked to return the questionnaires in sealed envelopes and put in the researcher's box in nursing department in each hospital within two weeks.

6. The questionnaires were checked for completion before data analysis. The response rate was calculated after collecting questionnaires, and it was 86% ( $387 \div 451 \times 100\%$ ), and the valid response rate was 84% ( $376 \div 437 \times 100\%$ ).

### **Data Analysis Procedure**

The Statistical Package for Social Science (SPSS) version 16.0 was used to analysis data. The significant level was set at .05.

1. Demographic data was analyzed by using frequency, percentage, the mean, and standard deviation based on the variables level.

2. Scores of communication satisfaction and organization effectiveness among nurses were analyzed by using mean and standard deviation.



3. The data distribution of communication satisfaction and organization effectiveness was tested by Kolmogorov-Smirnov (KS) statistic test, and the data showed non-normal distribution.

4. The relationship between communication satisfaction and organization effectiveness was tested by Spearman's rank-order correlation. Based on Burns and Grove (2009), the correlation coefficient ( $r$ ) between .10 to .29 is considered as a weak relationship,  $r$  value between .30 to .50 is considered as a moderate relationship and  $r$  value larger than .50 is considered as a strong relationship.