# CHAPTER 3

# RESEARCH DESIGN AND METHODOLOGY

This chapter consists of design of the study, population and settings, sample, instrumentation, data collection, and data analysis.

## Design of the Study

This was a comparative study to examine caring practices in reducing patients' pre-operative anxiety as perceived by surgical nurses and patients.

## Settings and Population

The study was conducted at three selected hospitals: Prof. Dr. Margono Soekarjo Hospital, Banyumas District Hospital, and Purbalingga District Hospital in Banyumas, Central Java Province, Indonesia, from mid June to July 2004. Surgical ward at Prof. Dr. Margono Soekarjo includes general surgery ward, obstetric gynecological ward, and orthopedic ward. At Banyumas District Hospital and Purbalingga District Hospital, surgical ward includes all surgical patients.

The target populations in this study were surgical nurses and pre-operative patients at the three hospitals. The tertiary referral hospital, Prof. Dr. Margono Soekarjo Hospital has 56 surgical nurses graduated from diploma III of nursing and 4 surgical nurses graduated from high school of nursing. The secondary referral hospitals are Banyumas District Hospital and Purbalingga District Hospital. In Banyumas District Hospital, 16 surgical nurses graduated from diploma III of nursing.

In Purbalingga District Hospital, 20 surgical nurses graduated from diploma III of nursing and a surgical nurse graduated from high school of nursing. In these hospitals, surgical patients had orthopedic, abdominal, obstetric gynecological, oncological, ear nose throat, and urological surgery.

## Sample

### 1. Sample size

The estimated number of subjects was determined by power analysis. In quantitative studies for testing the differences of two means, power analysis was useful to ascertain the significance of the study findings. The necessary sample size was estimated at the level of significance ($\alpha$) of .05, which was the accepted the minimum level of significance. The power of test (1-$\beta$) of .80 was a conventional standard for the power of the test. The effect size ($\gamma$) of .50 was mostly found in nursing studies. The samples for examining the differences between two variables using independent t-test for each group were at least 63 subjects in each group (Polit & Hungler, 1999).

The number of subjects involved in this study was 70 surgical nurses and 70 pre-operative patients in the 3 hospitals. There were 43 surgical nurses and 43 pre-operative patients from Margono Soekarjo Hospital. Twelve surgical nurses and 12 pre-operative patients were recruited from Banyumas District Hospital. Fifteen surgical nurses and 15 patients were recruited from Purbalingga District Hospital.

## 2. Sampling design

Probability sampling was used in this study. Stratified random sampling was employed for surgical nurses. Based on proportion of sample size each hospital, 43 eligible surgical nurses were randomly withdrawn from 56 surgical nurses at Prof. Dr. Margono Soekarjo Hospital, 12 of 16 surgical nurses at Banyumas District Hospital, and 15 of 20 surgical nurses at Purbalingga District Hospital. Systematic random sampling was used for selecting patients. Three patients were drawn randomly from every list of five pre-operative patients to reach 43 patients at Prof. Dr. Margono Soekarjo Hospital, 12 patients at Banyumas District Hospital, and 15 patients at Purbalingga District Hospital.

2.1 Surgical nurses' inclusion criteria:

(1) Educational background of at least diploma III in nursing

(2) At least 6 months of experience in caring for surgical patients

2.2 Pre-operative patients' inclusion criteria:

(1) Literate

(2) Adult patients aged more than 18 years

(3) Surgical patients who are at least one day admission before surgery

## Instrumentation

## 1. Caring Practices in Reducing Pre-operative Anxiety (CPRPA)

The instrument for data collection of this study was questionnaire of caring practices in reducing patients' pre-operative anxiety. The instrument comprised of two forms: Form 1 for Nurses and Form 2 for patients. Each form included

demographic data and CPRPA. These questionnaires were designed for self-report from both surgical nurses and pre-operative patients.

**Form 1: Questionnaire for Surgical Nurses**

1. Demographic data of surgical nurses

This form consisted of eight items including gender, age, education, religion, marital status, knowledge of reducing pre-operative anxiety, working experience in surgical ward, and experience of operation (Appendix A).

2. Surgical Nurses' Perception of CPRPA

This part was designed to assess caring practices in reducing patients' pre-operative anxiety, as perceived by surgical nurses. The questionnaire was modified from Caring Behaviors Assessment (Cronin & Harrison, 1988b). The questionnaire consisted of 42 items: the first 17 items were related to assessment-evaluation of pre-operative anxiety, and the other 25 items were related to pharmacological and non-pharmacological intervention. Each item of caring practices was responded in terms of how well nurses performed for patients with a 5-point scale: 1 means very poor, 2 means poor, 3 means moderate, 4 means good, and 5 means very good quality of caring practices. The possible range of total score of caring practices in reducing pre-operative anxiety as perceived by surgical nurses was 42-210. It was categorized into three groups based on total score.

Low level        : below (mean − 1 SD)

Moderate level   : (mean ± 1 SD)

High level       : above (mean + 1 SD)

**Form 2: Questionnaire for Pre-operative Patients**

1. Demographic Data of Pre-operative Patients

This form consisted of ten questionnaire items including gender, age, marital status, education, religion, occupation, experience of operation, medical diagnosis, type of surgery, and the level of pre-operative anxiety (Appendix B).

2. Pre-operative Patients' Perception of CPRPA

This form was designed to assess caring practices in reducing patients' pre-operative anxiety, which consisted of 42 items: the first 17 items were related to anxiety assessment-evaluation and the other 25 items were related to pharmacological and non-pharmacological intervention. Each item of caring practices was responded in terms of how well patients received from nurses with a 5-point Likert scales: 1 means very poor: 2 means poor, 3 means moderate, 4 means good, and 5 means very good. The possible range of total score was 42-210. It was categorized into three groups based on total score as identical to classification of nurses' perception.

2.  **Validity and reliability of instrument**

Instruments of caring practices in reducing pre-operative anxiety were evaluated for the content validity index by a panel of three experts in surgical nursing: two Thai experts and one Indonesian expert. The instrument was evaluated for the degree of relevance regarding caring practices in reducing pre-operative anxiety (Polit & Hungler, 1999). The content validity index of caring practices in reducing pre-operative anxiety as perceived by surgical nurses and patients was .89 and .90, respectively. The construct validity was not checked in this study, but the seven-subscale construction of the caring practices follows seven subscales of Caring

Behaviors Assessment tool (Cronin & Harrison, 1988b). Cronbach alpha coefficients of caring practices in reducing pre-operative anxiety for 20 subjects yielded .95 for nurses and .95 for patients.

### 3. Translation of instrument

Translation of the instrument in this study was conducted with a back translation method. This method was preceded in three phases. Phase 1, English version of this instrument was translated into Indonesian by the first translator. Phase 2, Indonesian version was back translated into English by the second translator. Form 2 for patients was checked for readability by three people: a teacher of elementary school and two people who completed elementary school (Appendix G). Phase 3, an English expert evaluated both the original instrument and the English back translation version for discrepancy to ensure the useable instruments, see Appendix F.

### Data Collection

Ethics approval and hospital authorization was obtained after the approval from the Ethics Research Committee (ERC) of the Faculty of Nursing, Prince of Songkla University. The researcher gained authorization for data collection from district research center in Banyumas, the directors, and head nurses of the selected hospitals.

The researcher asked head nurses to assist in recruiting eligible surgical nurses by stratified random sampling. The researcher then explained the purposes and delivered the questionnaires to them. After explaining the purposes of study, the researcher asked for verbal approval or a formal informed consent, from eligible

subjects who agreed to participate in this study. The questionnaire (Form 1) was delivered to surgical nurses and returned by the following week.

For pre-operative patients, the researcher collaborated with surgical nurses to recruit patients by systematic random sampling. The researcher then asked for verbal approval or a formal informed consent, from eligible subjects who agreed to participate in this study. The form 2 questionnaire was delivered for patient to complete in the evening, the day before surgery.

**Ethical Consideration**

Ethics issues included respecting subject autonomy and confidentiality were approved by the ERC from Prince of Songkla University. The researcher collaborated with head nurses to approach the eligible subjects to participate and informed them the purposes and the procedures of this study. The researcher informed that participation in this study was voluntary and a guarantee of anonymity. Eligible subjects were asked for verbal approval or a formal informed consent. In addition, eligible subjects could withdraw from this study at anytime and pre-operative patients who resigned from this study had usual caring practices. All information provided by the subjects was kept confidentially (see Appendix C).

**Data Analysis**

Data were analyzed by using SPSS version 10. Data analysis included descriptive and inferential statistics for answering the three research questions.

### 1. Demographic data

Descriptive statistics was used for presenting demographic data comprising of frequency, percentage, mean, standard deviation, and range.

### 2. Levels of CPRPA

Descriptive statistics was employed for presenting the levels of caring practices in reducing pre-operative anxiety, as perceived by surgical nurses and patients. Frequency, percentage, and the levels of caring practices were presented. The levels of caring practices were divided into three categories: low, moderate, and high level.

### 3. The differences between CPRPA as perceived by nurses and patients

Inferential statistics was employed for examining the differences of caring practices in reducing pre-operative anxiety between groups. After meeting tests of normality and homogeneity of variances between the two groups, independent t-test was used for testing the differences between two means of caring practices in reducing patients' pre-operative anxiety as perceived by surgical nurses and patients.