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## CHAPTER 3

### METHODOLOGY

In this chapter the research design, setting, subjects, data collection procedure and data analysis method are presented. Instruments are described.

#### Design of the study

A descriptive-correlational design was used in this study to identify the stress level and coping behaviors of the postmastectomy patients, and to examine the relationships among the stress level, coping behaviors, perceived family relationship, and age of postmastectomy patients.

#### Subjects

The target population of this study was the post mastectomy patients who were admitted in the surgical wards in four general university teaching hospitals, two general hospitals in Beijing and one university hospital in Tianjin, China. The study was conducted from the December 21st, 1995 to the February 17th, 1996.

Purposive sampling method was used to select the subjects. Criteria for eligibility included:

1. Being Chinese women aged 30 years to 70 years,

- with clear diagnosis of breast cancer.
2. Having undergone single-side modified radical mastectomy or radical mastectomy for 8-11 days.
  3. Having first post mastectomy, no evidences of wide-spread metastatic involvement.
  4. Being able to speak or read Mandarin.
  5. Being physically and mentally able to participate in the study.

Sixty eligible subjects were identified and asked to participate in the study. Of the potential sixty subjects, two refused, one withdrew before the termination of the data collection. Therefore, 57 of the subjects were included in the study, yielding a response rate of 95%. The majority of the subjects were from the northern part of China, a few subjects were from other geographic areas.

### **Instrumentation**

The instrument used for data collection was a questionnaire which composed of four parts: Demographic Data Form, Modified Symptoms of Stress Inventory (MSSI), Jalowiec Coping Scale (JCS) and Family Relationship Assessment Questionnaire (FRAQ).

#### **1. Demographic Data Form**

The Demographic Data Form (Appendix A) was used to

measure some basic information and characteristics of the subjects. It includes patient's diagnosis, type of the surgery, date of the surgery, age, marital status, educational background, the way of the surgical payment, family income, current health status, occupation, and economic status.

## 2. Modified Symptoms of Stress Inventory(MSSI)--A self Assessment

Modified Symptoms of Stress Inventory (MSSI) (Appendix A) is a 56-item, 5-point rating scale designed to measure the different ways people respond to stressful situations. It consists of two parts: physical stress response (PS, 34 items from No.1 to No. 34) and emotional stress response (ES, 22 items from No.35 to No.56). This scale was partially adapted by the investigator of this study from the Symptoms of Stress Inventory (SSI) - A Self Assessment (Cornell Medical Index, 1949). The original scale was designed to measure the different ways people respond to stressful situations. In that scale there were 107 items dealing with various physical, psychological and behavioral responses. Some of them were considered not suitable to the present study, so they were deleted, and only 56 items which were considered relevant were adapted.

Scoring of MSSI: Fifty-six items were rated on 1(=never) to 5(=very frequently) rating scale to indicate the

severity of the symptoms. Raw score was obtained by the sum of the choices of the subjects, and converted score was obtained by using the raw score divided by the number of items.

Measure:	Mild stress:	1.0 - 1.99
	Moderate stress:	2.0 - 2.99
	Very stress:	3.0 - 3.99
	Severe stress:	4.0 - 5.0

### 3. Jalowiec Coping Scale (JCS)

Jalowiec Coping Scale (1987) (Appendix A) is a 60-item, 0-to-3-point rating scale. It was used to measure the coping strategies that the subjects commonly used. Eight coping styles evolved as the most descriptive of the coping dimensions represented by 60 items. These eight coping styles are: confrontive (10 items: No. 4, 13, 16, 25, 27, 29, 33, 38, 43, 45), evasive (13 items: No. 7, 10, 14, 18, 20, 21, 28, 35, 40, 48, 55, 56, 58), optimistic (9 items: No. 2, 5, 30, 32, 39, 47, 49, 50, 54), fatalistic (4 items: No. 9, 12, 23, 60), emotive (5 items: No. 1, 8, 24, 46, 51), palliative (7 items: No. 3, 6, 26, 34, 36, 44, 53), supportant (5 items: No. 11, 15, 17, 42, 59), and self-reliant (7 items: No. 19, 22, 31, 37, 41, 52, 57).

Scoring of the JCS: Sixty coping behaviors were rated on a 0(=never) to 3(=often) rating scale to indicate the extent of use of each strategy and were grouped into eight

coping sub-styles. Raw score was obtained from the sum of choices of the subjects, and the relative score was obtained by using the formula provided by the original author. The advantages of using relative score of the JCS are to control for the unequal number of items in each subscale, and control for individual differences in response rates (Jalowice, 1988).

Measure of the general coping behaviors by using of the relative score:

Poor: 0 - 0.99, Fair: 1.0 - 1.99, Good: 2.0 - 3.0

Ratings for items within each coping style were added to obtain a score for each coping style and the relative scores were computed. Highest scores indicate the greatest use of that particular coping style.

#### 4. Family Relationship Assessment Questionnaire (FRAQ)

It is a 15-item, 3-point self report questionnaire (Appendix A) developed by the investigator of the study. It was designed to measure the postmastectomy patients' perception of their family relationship. It took some ideas from the Family Environment Scale (Moos & Moos, 1986) and considered the acceptability in Chinese population in term selecting, for example, the peaceful relationship was used instead of the conflict relationship, emotive relationship substituted the expressiveness relationship, and the

supportive relationship (eg: provide information, share responsibility) was added. Therefore, four subtypes of family relationship were included in this questionnaire. They are supportive (5 items from No. 1 to No. 5), emotive (4 items from No. 6 to No. 9), cohesive (3 items from No. 11 to No. 13) and peaceful (3 items: No. 10, 14, 15) relationship.

Scoring of the FRAQ: 1=never happen 2=sometimes 3=very often. Raw score was obtained from the sum of the choices of the subjects and it was converted.

Measure of the general family relationship:

Poor: 1 - 1.65, Fair: 1.66 - 2.30, Good: 2.31 - 3.0.

Ratings for items within each subgroup were added to obtain a score for each type of family relationship and the mean scores were computed.

#### Content validity and reliability

Since the MSSSI, JCS and FRAQ were written in English, they were translated into Chinese by the investigator of this study. The Chinese versions were considered the adaptability and utility in Chinese population. The accuracy, clarity and readability of translation were examined by a nursing expert who is both good in English and Chinese. Backtranslation technic was used.

Content validity of MSSSI, JCS and FRAQ was reviewed by a panel of five experts in this field: one psychiatrist, one

nursing expert on nursing psychology and three nurse experts. The English version was tested by three nursing experts in Chiang Mai University, Thailand. The Chinese version was tested by one psychiatrist, one expert in nursing psychology in Beijing Medical University, and one nursing expert from the National Nursing Center of China. The reviewers were provided with the abstract of the research proposal which included the brief introduction of the background and purposes of the study, the research objectives and hypotheses, definition of terms, literature review and conceptual framework, research design and whole questionnaires. The reviewers were asked to review each item for meaning and clarity and to rate the relevance of each item to the corresponding concepts by using a 4-point rating scale : 1=not relevant, 2=somewhat relevant, 3=quite relevant, 4=highly relevant. For the initial sixty items of the MSSSI, four were rated as irrelevant and were eliminated. For the initial sixteen items of the FRAQ, one item was eliminated because of duplication.

Reliability of the MSSSI, JCS and FRAQ was tested among ten postmastectomy patients in Beijing. Internal consistency reliability coefficient was determined using the Statistical Package for Social Science (SPSS) computer software package. Cronbach alpha were .96 for MSSSI and .95 for FRAQ indicating an acceptable level for new tools (Nunnally, 1978). The original JCS scale on which the revised scale is based on was

considered valid and reliable (Jalowiec, 1988). The reliability on the revised JCS has been reported as Cronbach's alpha ranging from .86 to .95 for the overall use score and .81 to .96 for overall effectiveness score (Jalowiec, 1988; Herth, 1990; & Perry, 1990). The Cronbach alpha on the Chinese version of JCS was .84 which was considered as acceptable.

#### Data Collection Procedure

Prior to implementation of the study, the study plan and protection of the rights of human subjects were assured by the administrators. Permission of reaching subjects and conducting the study were obtained from the hospital administrators, physicians and nurses in charge of the patients.

For research with human subjects, ethical considerations regarding protecting subjects from potential cost of research and respecting subjects' right to self determination and privacy are required (Polit & Hungler, 1993). Subjects were informed about the purposes of the study and confidentiality assurance by the investigator. Explanation (Appendix B) of no harm of participation or withdrawal at any time from the study was given at the beginning of the study. Verbal informed consent was obtained from every subject. All data were analyzed and reported as group data.

Subjects were interviewed face-to-face by the guide of



the questionnaire at the eight to eleven days post mastectomy. The questionnaire was completed during interview. In order to minimize bias, only the investigator conducted all the interviews. Each interview took about one hour.

When the interview was completed, the subjects were thanked for participation in the study. Additionally, subjects were given some post-operative teaching and counselling regarding to wound healing, nutrition, follow-up treatment and rehabilitation.

#### Data Analysis:

All data were calculated by SPSS computer software.

1. Descriptive data such as frequency, percentage of the demographic data were obtained.

2. Range, Means and S.D. of the MSSSI, JCS and FRAQ were calculated.

3. Pearson correlation statistics ( $r$ ) were used to examine the relationships between stress level and coping behaviors, stress level and perceived family relationship, stress level and age; coping behaviors and perceived family relationship, coping behaviors and age of the postmastectomy patients.

4. T-test was used to examine the difference between the physical and emotional stress responses.