CHAPTER 3

METHODOLOGY

Research design

A descriptive correlational study was conducted to describe family support and self-concept of COPD patients, and to examine the relationship between the two concepts.

Population and sample, sampling

The target population of this study was the patients with COPD attending the Outpatient Department of Xiang Ya Hospital of Human Medical University, Changsha City of China. Subjects were conveniently selected by the following inclusion criteria:

1. Being 50 years old or over
2. No severe complications including severe dyspnea and heart failure
3. Being well oriented to time, place and person
4. Currently living with at least one family member
5. Being able to communicate in Chinese and voluntarily participating in the study
6. Having been diagnosed as COPD for at least 3 months

A convenient sampling method was used in the study. The required sample size was determined by level of significance, effect size, and desired power based on a power analysis (Cohen & Cohen, 1975). The significance level of .05 was adopted as the standard for the alpha criterion, and a conventional standard for power was .80 (Polit & Sherman, 1990). Based on the literature review, medium effect size of .30 was chosen in this study (Cohen & Cohen, 1975). Through checking from the table of power analysis (Polit and Hungler, 1999), at least 88 subjects should be required in this study. The eligible subjects of Outpatient Department of Xiang Ya Hospital during November, 1999 to January, 2000 were approached individually by the investigator. One hundred and ten subjects were identified and asked to participate in the study. Of the 110 subjects, two of them withdrew during the data collection period because they had no time. Therefore, 108 subjects were included in the study.

Instrumentation

The instruments for data collection were composed of three sets of questionnaires: 1) Demographic Data Recording Form, 2) the Modified Self-concept Scale, and 3) the Modified Personal Resource Questionnaire 85 Part2 (MPRQ85-Part2)

Demographic Data Recording Form

Demographic Data Recording Form was designed by the researcher to collect patients' demographic data including age, gender, marital status, educational status, income,

occupation, type of medical payment, duration of diagnosis, frequency of hospitalization, other chronic illness history.

Modified Self-concept Scale

The instrument for measuring self-concept was the Modified Self-concept Scale (MSCS). Li's Self-concept Scale was modified by the researcher. The original Self-concept Scale (SCS) developed by Li (1998) was a 56-item, 5-point (1 to 5) Likert scale, which captures two sub-areas: physical self and personal self based on self-concept of Roy's adaptation model. The physical self included body image (10 items) and body sensation (9 items). The personal self included self-consistency (12 items), self-ideal/ self-expectancy (10 items), and moral-ethical-spiritual self (15 items). There were 33 positive items and 23 negative items. The range of possible scale score was from 56 to 280. The higher scores reflected high self-concept. The content validity index of the original SCS was .84. The reliability of SCS was tested among 15 Chinese rehabilitative schizophrenic patients, and the internal consistency tested with Cronbach's alpha was .88, which was accepted (Polit & Hungler, 1991). Because some items in the Self-Concept Scale were specific to the schizophrenic patients, in this study, the researcher omitted nine of them and modified the statements in each item making it more appropriate for use in COPD patients. So, the Modified Self-Concept Scale was a 48-item, 5-point (1 to 5) Likert scale. It was composed of two sub-areas: physical self and personal self. The physical self included body image (8 items) and body sensation (8

items). The personal self involved self-consistency (11 items), self-ideal/ self-expectancy (10 items), and moral-ethical-spiritual self (11 items). It consisted of 32 positive items and 16 negative items. The meaning of the score of positive items from 1 to 5 stood for from "strongly disagree" to "strongly agree". While, that of negative items from 1 to 5 equaled to from "strongly agree" to "strongly disagree". The possible scale scores ranged from 48 to 240 with higher scores reflected more positive self-concept.

Modified Personal Resource Questionnaire 85 Part 2

The Personal Resource Questionnaire 85 Part 2 (PRQ 85 Part 2) developed by Brandt and Weinert (1987) was a 25-item 7-point Likert scale measuring the respondent's perceived level of social support, rated from "strongly agree" (7) to "strongly disagree" (1). Five of the items (4,7,10,16,23) were written in the negative and the others were in positive. Scale scores ranged from 25 to 175 with higher scores implicating higher levels of perceived social support (Weinert, 1988). The construct validity was tested (Weinert, 1987). The latest reliability of PRQ 85 Part 2, Cronbach's alpha coefficient tested in Chinese COPD population was .82 (Yan, 1997).

The PRQ 85 Part 2 was modified for use in this study from 7-point Likert answers to 5-point Likert answers and statements specified family as resource by the researcher to make COPD patients easily answer and the instrument fit to measure family support. The meaning of the score of positive items were that 1=strongly disagree, 2=disagree, 3=not sure,

4=agree, and 5=strongly agree. The negative items were just opposite. The range of possible total scores were from 25 to 125. The higher scores indicated higher levels of family support. This study used the MPRQ 85 Part 2 Scale to measure the COPD patients' perceived level of social support from family.

Testing for validity and reliability of instruments

The PRQ 85 Part 2 (Weinert & Brandt, 1987) and original Self-concept Scale (Li, 1998) were considered valid and reliable. The content validity of the Modified PRQ 85 Part 2 and the Modified SCS in English versions were tested by five experts at Chiang Mai University, Thailand, who were very knowledgeable in COPD, Roy's Adaptation Model, and social support. The instruments were revised according to the suggestions of the experts. The content validity was obtained by using the index of content validity (CVI) (Davis, 1992). The CVI of 0.86 for MSCS and 0.92 for MPRQ 85 Part 2 were considered acceptable (Davis, 1992).

The accuracy of translation of the instruments was assured using the back translation technique. The English version was translated into Chinese by one Chinese-English bilingual translator in Xiang Ya Hospital of Hunan Medical University and the translated version was translated back into English by two bilingual experts of Hunan Medical University. The original and translated versions were checked for the correctness of translation.

The MSCS and MPRQ 85 Part 2 were pretested for internal consistency reliability by applying the instruments

to 10 COPD patients (Polit & Hungler, 1999) who met the subjects' criteria and visited the physicians at the Medical Outpatient Department of Xiang Ya Hospital, Hunan Medical University. The reliability was tested by using Cronbach's alpha coefficient. Alpha coefficient obtained was 0.84 for MPRQ 85 Part 2, which was acceptable (Burns & Grove, 1993). The reliability of the MSCS and each subscale of the MSCS were tested in this sample. The reliability coefficient for overall MSCS was 0.82, for body image, body sensation, self-consistency, self-ideal, and moral-ethical-spiritual self were 0.74, 0.85, 0.78, 0.80, and 0.72, respectively, which were also acceptable (Burns & Grove, 1993).

Protection of human rights

Prior to data collection, an inform consent (See appendix A) was performed in order to assure the protection of the human rights.

1. The prospective subjects were asked for their willingness to participate in this study.

2. The subjects were informed confidentiality, assurance, and the purpose of the study by the researcher.

3. Data were secured during the study. They were accessible to only the researcher for the purpose of the study.

4. Subjects were free to participate and /or withdraw from the study at any time.

Data collection procedure

Using the method of structured interview, the subjects' personal data were collected and their self-concept and family support were measured. The procedures of data collection were as following:

1. Asking for permission of data collecting from the hospital's administrators, physicians, and nurses in the Outpatient Department.

2. Identifying the prospective subject by reviewing the medical records brought with patients and interviewed the patients.

3. Asking the prospective subjects to participate in the study. Human rights were fully protected.

4. Interviewing the eligible subjects using the questionnaires as an interview guide.

Analysis of data

Statistical Package for Social Sciences (SPSS) was used to analyze data obtained from the demographic records, the MPRQ85-Part2, and the MSCS:

1. Descriptive data including range, requency, percentage, mean and standard deviation of the demographic data were obtained.

2. Mean, standard deviation, and percentage were used to analyze the scores of family support and self-concept. The family support scores were categorized into three levels based on the method of range by three equal intervals: low (25-58), moderate (59-92), and high level (93-

intervals: low (25-58), moderate (59-92), and high level (93-125). The possible scores of the MSCS were divided into 4 categories highly negative self-concept (48-96), moderately negative self-concept (97-144), moderately positive self-concept (145-192), and highly positive self-concept (193-240).

3. Pearson's product correlation coefficient was used to test the relationship between family support and self-concept of COPD patients, relationships between frequency of hospitalization and self-concept, duration of being diagnosed and self-concept, as well as frequency of hospitalization and family support, duration of being diagnosed and family support of COPD patients. The level of relationship was based on Pearson's r. According to Burns and Grove (1995), r value .10 to .30 is considered a weak relationship, r value > .30 to .50 is a moderate relationship, r value > .50 is a strong relationship, and r equals to 1 or -1 means perfect correlation.

4. Level of significance of this study was set at .05.