

CHAPTER 3

RESEARCH METHODOLOGY

Research design

This study is a descriptive study. A two sample Mann Whitney test was used to examine data of family support perceived by pulmonary TB patients who were successful and those who were unsuccessful in complying with the DOTS program at period October 2006 to February 2007 in four community health centers in Medan, Indonesia.

Population and setting

The target population for this study was pulmonary TB patients who were successful and who were unsuccessful in complying with the DOTS program, registered at one of the following health centers: Petisah Community Health Center, Polonia Community Health Center, Medan Amplas Community Health Center and Kampung Baru Community Health Center in Medan, Indonesia. These four community health centers were chosen by the researcher because all of the four community health centers are in urban area. Participants in the successful group were interviewed by the researcher and the two research assistants in their home, and the participants in unsuccessful group were interviewed by the researcher and research assistant in the community health centers.

Sample and Sampling

Sample size

The number of subjects was determined by power analysis, which is used to determine the significance of the study findings in quantitative studies. It involves : α (the significance criterion), γ (the population of effect size) and $1-\beta$ (power of the test). The sample size in this study was estimated at α of .05, a power of .80 ($1-\beta$), and effect size of .50. An alpha of .05 has been adopted as the standard for the α criterion, whereas the conventional standard for $1-\beta$ is .80, and gamma of .50 is an estimated medium effect size which is used in most nursing studies (Pollit & Hungler, 1999).

Based on these criteria, the sample size for this study was 63. Therefore, the number of subject needed to test the differences between two means in this study was 63 patients who were successful in complying with the DOTS program and 63 patients who were unsuccessful in complying with the DOTS program.

Sampling technique

Purposive sampling was used in this study. Participants were recruited based on the following criteria :

1. had been diagnosed with new case pulmonary TB
2. were already successful in complying with the DOTS program (taking TB medication uninterrupted for six months) or were unsuccessful in complying with the DOTS program (taking TB medication with any interruption for six months) and sputum smear positive or becoming positive again.
3. were able to communicate in Indonesian language.

4. had completed taking the TB medications or was already successful in complying with the DOTS program not more than 1 year

Instrumentation

Instruments

The data collection tool consisted of two parts, demographics data questionnaires and family support questionnaires.

Part 1 : The Demographic Data Questionnaire

The instrument, developed by the researcher, consisted of 13 items to assess the subjects demographic data including age, sex, race, religion, educational level, marital status, type of family, size of family, occupation, the community health center, family income per month, the category of treatment received and the health status related to the side effects of the medications.

Part 2 : Family Support Data Questionnaire

This instrument was also developed by the researcher based on Pender definition of family support (Pender, 2002) and DOTS guidelines for family member (WHO, 2005). It consisted of 41 items to assess perceived family support for the pulmonary TB patient, who were successful and those who were unsuccessful in complying with the DOTS program. The family support questionnaire consists of 41 items of family support which as follows :

Emotional concern:

Expressions of caring, five items question numbers 1-5

Encouragement, five items question numbers 6-10

Empathy, five items question numbers 11-15

Aid:

Service, five items question numbers 16-20

Money, five items question numbers 21-25

Information, five items question numbers 26-31

Affirmation:

Constructive feedback, five items question numbers 32-36

Acknowledgement, five items question numbers 37-41

The received statements of family support were rated on a 4-point Likert type scale:

1 = never

2 = sometimes

3 = most of the time

4 = all of the time

The mean score of each item was categorized into three levels of perceived family support, 1 – 2 = low level of family support, 2.01 – 3 = moderate level of family support, and 3.01 – 4 = high level of family support.

Translation of instrument

The original instrument of this study were developed in English language. In order to use with Indonesian people, the English version of the instrument was translated into Indonesia language using the back translation technique. The back translation process was conducted as follows:

1. The first bilingual translator translated the instrument from English version into Indonesian version.
2. The second bilingual translator translated the instrument from Indonesian version into English version.

3. The third bilingual translator then clarified and identified the discrepancies in some items between the two versions, changing, modifying, or adding words in order to convey the same meaning, as the English version and overcome the discrepancies.

Validity and reliability

The validity of instruments

The Family Support Questionnaire was examined for content validity by three experts. The first one was the expert of adult health nursing, and the second was the expert of community health nursing, Faculty of Nursing Prince of Songkla University, Hatyai Thailand, and the third was the expert of family health, Faculty of Medicine, University of Sumatera Utara, Medan Indonesia. The researcher modified the questionnaire based on the experts' recommendations.

The reliability of instruments

The reliability of Family Support Questionnaire Indonesian version was tested among 20 pulmonary TB patients who were successful in complying with the DOTS program and 20 pulmonary TB patients who were unsuccessful in complying with the DOTS program, similar to the sample, to determine internal consistency reliability using Cronbach's alpha. The values of coefficient of reliability was .89 for successful group, and .93 for unsuccessful group, respectively.

Ethical Consideration

1. Permission from the Ethics Committee in Research of the Faculty of Nursing, Prince of Songkla University were obtained before conducting the study.

2. Permission for data collection were obtained from Head of Petisah Community Health Center, Medan Amplas Community Health Center, Medan Johor Community Health Center, and Kampung Baru Community Health Center.

3. Staff of the community health centers informed of the participants and ask the participants permission for the researcher.

4. Participants who were willing to participate in this study provided oral or written consent to the researcher or the two research assistants (Appendix A). They were informed that they had freedom to reject or to withdraw at any time with no consequences. Codes were used to protect the identities of subjects. The subjects who participated in this study were assured that confidentiality of data would be maintained.

Data Collection Methods

Data were collected at Petisah Community Health Center, Medan Amplas Community Health Center, Medan Johor Community Health Center, and Kampung Baru Community Health Center in Medan, Indonesia in October 2006 to February 2007. The steps of data collection were as follows:

Preparation phase

1. The researcher contacted the Dean of the Faculty of Nursing, Prince of Songkla University in Thailand regarding a letter for collecting data at Petisah Community Health Center, Medan Amplas Community Health Center, Medan Johor Community Health Center, and Kampung Baru Community Health Center in Medan, Indonesia.

2. The researcher asked for permission from head of Petisah Community Health Center, Medan Amplas Community Health Center, Medan Johor Community Health Center, and Kampung Baru Community Health Center in Medan, Indonesia.

3. The researcher explained to the directors and staff at Petisah Community Health Center, Medan Amplas Community Health Center, Medan Johor Community Health Center, and Kampung Baru Community Health Center about the objectives of this study, and the method of data collection, and asked for cooperation.

4. The researcher briefed two research assistants (nurses of community health center), about the objectives of the study, expected outcomes of the study, how to use the questionnaire and how to interview the pulmonary TB patients. Detailed steps of the interview were demonstrated to research assistants. The criteria of research assistants were nurses of community health center and familiar with the DOTS program.

5. The researcher reviewed the medical record of the pulmonary TB patients from the staff at Petisah Community Health Center, Medan Amplas Community Health Center, Medan Johor Community Health Center, and Kampung Baru Community Health Center. The researcher and the two research assistants made a list of the names of pulmonary TB patients who were already taking medication for more than six months. The participants who had taken medication uninterrupted were the subjects for the successful group and already taking medication more than six months but with any interruption and sputum smear remaining positive, for unsuccessful group.

Implementation phase

The researcher and the research assistants collected data in four Community Health Centers in Medan. The steps of the implementation phase in data collection were as follows:

1. The researcher and research assistants identified subjects who met the inclusion criteria and the subjects were approached to participate in this study.
2. The participants who met inclusion criteria were informed by staff of the community health center about the objectives of the study and asked for the permission of the participant for interview by the researcher.
3. The researcher or research assistants explained to the participant the purpose of the study, the subject's rights and the expected outcomes of the study.
4. Participants were interviewed by the researcher or research assistants around 30 to 45 minutes. The participants answered the questions based on their experiences.

Data Analysis

In this study, data were processed using the Statistical Package for Social Science (SPSS). Descriptive statistics were used for presentation of demographic data. They were described in frequencies and percentages. Data of family support for pulmonary TB patients who were successful and unsuccessful in complying with the DOTS program were analyzed by Mann Whitney test, because the data were not in normal distribution. The data were described in means and standard deviations.