

CHAPTER 3

RESEARCH METHODOLOGY

1. Research Design

A descriptive comparative design was used in this study to describe the pain experiences of Javanese and Batak patients and also to examine the differences in pain experiences between these two ethnic groups.

2. Settings

The targeted population in this study was Indonesian patients from surgical ward with postoperative pain. This study took place at four government hospitals in Medan, Indonesia. Two hospitals, Dr Pimgadi and Haji Adam Malik Hospitals have established major surgery services and are also referral centers. Both hospitals are in an urban setting. Adam Malik has approximately 450 beds. Almost all surgical procedures are performed in this hospital, including neurological surgery, urological surgery, orthopedic surgery, digestive surgery, plastic surgery, and cardio thoracic surgery. This hospital has one surgical ward, which is divided, into small rooms for each surgical procedure. This hospital is a center and referral hospital for the Sumatra Region. Dr. Pimgadi Hospital has around 600 beds and is a teaching hospital for both nursing and medical students. Similar to Adam Malik Hospital, almost all surgical procedures are conducted in this hospital, such as orthopedic surgery, neurosurgery, and plastic surgery. To take care of postoperative patients, this hospital has three separate surgical wards. There are around 20

major surgical procedures carried out every month at these two hospitals. They are teaching hospitals in which nursing and medical students get clinical experiences.

Putri Hijau Army Hospital is a center and referral hospital for armed forces in the Sumatra region, and has around 500 beds. The two main surgical procedures frequently conducted in this hospital are orthopedic and digestive surgery. Tembakau Deli Hospital is a public hospital and also serves as a teaching hospital for medical and nursing students. This hospital has 250 beds. In this hospital there are two surgical wards for traumatic surgery and general surgery.

3. Sample

Data were collected from consecutive admissions during a specific three-month period (e.g., December 2002-February 2003). The sample consisted of 123 patients with 63 Javanese patients and 60 Batak patients. The inclusion criteria for subjects in this study were:

- 1) Javanese or Batak patients
- 2) Adult aged 20-60 years
- 3) Having major surgery within 24-48 hours
- 4) No other causes of pain, for example, multiple injuries or chest pain from MI
- 5) Able to read and communicate in Indonesian language
- 6) Willing to participate

4. Sample Size

The number of subjects needed for this study was determined by power analysis. Which is used to determine the significance of the study findings in quantitative studies. It is a statistical procedure for estimating sample size. Three components are required for estimating sample size were: (1) α (the significant criterion), (2) γ (the population effect size), and (3) $1-\beta$ (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 (Polit & Hungler, 1999).

Based on these criteria, the sample size for this study was 63. Therefore, the number of subjects needed to test the difference between two means in this study was at least 63 Javanese patients and 63 Batak patients. As in the actual data collection process, five patients, who did not meet the inclusion criteria, were excluded, data from only 63 Javanese and 60 Batak patients were used for statistical analysis and 10 patients from each group were representatives for qualitative data analysis.

5. Instruments

The data collection tools used in this study were of (1) Demographic Data Form, (2) Brief Pain Inventory, and (3) Interview Guide.

Demographic Data Form

The Demographic Data Form was designed by the researcher to collect the participants' demographic data including age, sex, marital status, religion, level of

education, ethnic group, occupation, income, medical diagnosis, type of surgery, area of operation, wound size and previous experience of pain (Appendix B).

Brief Pain Inventory

The Brief Pain Inventory (BPI) measures both pain intensity and pain interference with the patient's life. It also queries the patient about pain relief, pain quality, and the patient's perception of the cause of pain. In Brief Pain Inventory, 0-10 scales are used for rating by the subjects. This instrument has demonstrated its usefulness across cultures and it is easy to understand (Cleeland et al., as cited in Caraceni et al., 1996). The Brief Pain Inventory includes four pain intensity items, seven pain interference items, and an estimate of pain relief. The pain severity items on the BPI are presented as horizontal lines of numbers, with 0 = no pain and 10 = pain as bad as you can imagine. The pain interference items use the same type of scale and include how the pain interferes with activities, enjoyment of life, walking, sleeping, mood, and relations with others. These items are bounded by 0 = does not interfere and 10 = completely interfere (Appendix C).

The Interview Guide

The interview guide consisted of nine open-ended questions regarding the meaning of pain experience, how participants respond to pain, and cultural beliefs/practices. The Interview Guide is shown in Appendix D.

Validity and Reliability of the Instruments

The content validity was performed, for Brief Pain Inventory and Interview Guide, by three experts in pain, a cardiologist, a neurologist and an anesthesiologist. Each item was evaluated for its degree of relevance with its related construct variable of pain

experience in postoperative pain. The experts agreed with most of the items in the BPI and the interview guide, some questions were modified, and 2 questions were added. The BPI has been shown to be a reliable and valid measurement of pain. Test-retest reliability of the worst pain scale was 0.93 over a 2-day period in a sample of 20 in-patients with cancer. A significant correlation has been found between ratings of pain severity and ratings of pain interference. The internal consistency (alpha) for the interference scale was 0.94 in a past study (Lin & Ward, 1995). In this study, the internal consistency for BPI was 0.78. The BPI has been validated in many countries and used in several languages, such as Chinese, France, Mexican, Vietnamese, Italian, and Philippine (Caraceni et al., 1996). In a study by Caraceni et al., (1996) they found that alpha coefficients were above 0.75, for the pain severity and the pain interference scale. Reliability of this instrument with Indonesian samples (N =63 Javanese patients, N=60 Batak patients) was analyzed by its internal consistency using Cronbach's alpha. The coefficient reliability of the Brief Pain Inventory (BPI) for pain intensity subscale was 0.77 and pain interference subscale was 0.78. The BPI was translated into the Indonesian language by a bilingual translator and was confirmed by a linguistic expert.

6. Data Collection

Data were collected after permission was obtained from the Faculty of Nursing, Prince of Songkla University and from Directors of the Hospitals where the study took place. At a ward meeting before the research project began, the researcher met with the head nurse and nursing staff to explain the purpose of the study and their participation. When potential subjects were available, the staff nurse approached the patient and asked

if the researcher could visit and them. If the patient agreed, the researcher would then describe the study and obtain an informed consent (Appendix A). All patients were interviewed using the Demographic Data Form, the Brief Pain Inventory, and the Interview Guide.

7. Procedure

Subjects who met the inclusion criteria were approached to participate in this study. Patients who agreed to participate were asked to sign an informed consent or give verbal consent and to complete the Demographic Data Form. Then, they were interviewed about their pain experience using the BPI. After that, using the Interview Guide. Only 10 subjects from each group were interviewed in depth to get qualitative data for meaning of pain and cultural beliefs/practices about pain of the two ethnic groups. The interview process was tape-recorded. For other information, such as medical diagnosis, medication prescription, and type of surgery, the researcher gathered the data from the patient's medical record.

8. Protection of Human Subjects

Potential subjects were approached by a staff nurse who asked if the researcher might visit to describe the study. This would reduce possible coercion of the subject to participate. The subjects were also informed about the entire study. They were told that they might withdraw at any time with no consequences to their nursing care, the information gained from them was kept in confidential way, and informed consent was obtained. A code number was assigned for each subject. Their names, code numbers and data were on separate sheets, which were kept in a locked drawer. Their names were

destroyed at the end of the study. Anonymity and confidentiality of the subjects were protected at all time.

9. Data Analysis

Collected data were analyzed using descriptive statistics, inferential statistics, and simple thematic analysis. Descriptive analysis was used to present the subject's demographics. They were described in frequency, percentage, mean, and standard deviation. The inferential statistics were used to determine the difference in demographics and pain experience between two the ethnic groups. The statistical analysis used in this study was an independent t-test to determine whether pain experience of Javanese patients was different from Batak patients. In addition, simple thematic analysis was used to analyze the qualitative data obtained from the interview process.