CHAPTER 3

RESEARCH METHODOLOGY

Research Design

This descriptive comparative study examined the differences between patients and nurses in perception of patients' information needs during perioperative care at the Hospital of University Science Malaysia (HUSM), Kubang Kerian, Kelantan, Malaysia.

Population and Setting

The target populations were hospitalized surgical patients and surgical nurses caring for these patients in surgical wards at the HUSM. This hospital was purposively selected based on the following conditions:

1. It has 750 beds and 903 registered nurses.

2. It is a referral hospital on the East Coast of Peninsular Malaysia.

3. It is a teaching hospital for medical and nursing students of the University Science Malaysia as well as nursing students from several other institutions outside the state of Kelantan.

HUSM is one of the biggest referral hospitals on the East Coast of Peninsular Malaysia. It serves the population from neighbouring states such as Trengganu, and Pahang, as well as that of Kelantan itself. As a referral hospital, it provides modern technology and services that are only available in this hospital. Most patients are referred to this hospital for further treatment. General surgery is one of the specialties that offer sophisticated equipment and modern technologies to patients who need the services. In addition, orthopedic surgery also provides specific expertise in the treatment of bone tumors. Most patients are referred from other states all over Malaysia.

HUSM has 12 surgical wards. The surgical wards included in the study were general surgery wards (2 Intan, 3 Utara, 1 Selatan), orthopedic surgery wards (2 Zamrud, 4 Utara, 4 Selatan), and obstetric and gynecology wards (2 Topaz, 2 Akik, 2 Baiduri, and 1 Utara). Each ward has 28 beds. General surgery wards, such as 2 Intan (male ward) and 3 Utara (female ward) usually have an overload of patients. They have to create additional beds to accommodate new admission. This also occurs in the orthopedic male ward at 4 Selatan.

The average monthly admission rate from January to September 2004 in each specialty ranged from 86-198 in the general surgery wards, 51-104 in the orthopedic wards, 14-90 (caesarian section operation only) in the obstetric wards, and 160 in the gynecology ward (Nursing Unit of HUSM, 2004). Other surgical wards were not included in the study because the patients in those may not have been able to communicate effectively due to level of consciousness, hearing, communicating, and visual deficits.

Most surgical procedures were performed in the operating theater. The operating theater consists of 16 operating rooms. However, only 11 operating rooms were functioning at the time of this study. These operating rooms were assigned to specific specialties and followed the daily schedule as shown in Table B2 (Appendix B). The researcher recruited subjects by identifying them from the daily operation list.

Sample

Sample Size

The researcher proposed to collect 136 subjects from each group based on the calculation using power analysis. The sample sizes were estimated at the alpha of .05, the accepted minimum level of significance, 1- beta of .80, the accepted minimum power of the test, and gamma of .35, which was an arbitrarily selected effect size. However, the researcher was not able to collect the desired number of subjects' from surgical patients because of time limitations, technical limitations, e.g., fewer cases were given general anesthesia during data collection than were expected. Surgical procedures were performed under local or regional anesthesia (spinal and epidural anesthesia). One hundred surgical patients and 130 surgical nurses participated in the study. This sample size, however, may contribute to a low statistical power of the study.

Sampling Design

Subjects were recruited using purposive sampling. However, a number of inclusion criteria were used to control the homogeneity of patients and nurses recruited for the study. The inclusion criteria were as follows:

1. Patients' Inclusion Criteria

   1.1 Adult patients over18 years old.

   1.2 Had undergone general anesthesia for moderate to major elective surgery.

   1.3 Fully conscious on the second postoperative day.

   1.4 Able to communicate with the researcher, read and write Malay language.

1.5 Willing to participate in the study.

2. Nurses' Inclusion Criteria

Nurses working in surgical wards where preoperative and postoperative patients were admitted were recruited in the study. In addition, they had to meet the following criteria:

2.1 Have at least one year of experience in caring for surgical patients.

2.2 Willingness to participate in the study.

One hundred surgical patients and 130 surgical nurses were recruited from ten surgical wards (general surgery, orthopedic, obstetric and gynecology) at the Hospital of University Science Malaysia. Out of a total of 142 nurses, 130 nurses met the inclusion criteria. Six nurses had less than one year working experience, three were on maternity leave, and three subjects did not return the questionnaires. The data were collected during March - July, 2005.

Instrumentation

Instruments

The instruments were comprised of two sets of self-report questionnaire. Patients' Perception of Information Needs in Perioperative Care (PINPC) was used in this study to measure the level of patients' information needs. The PINPC-Form 1 (Patients version) questionnaire was administered to patients (Appendix C) and PINPC-Form 2 (Nurses version) was administered to nurses (Appendix D). Each form had two parts: Part 1 consisted of demographic characteristic data, and Part 2 consisted of patients' information needs in perioperative care.

PINPC-Form 1, Part 1 was used to assess demographic data. Assessment of patient's demographic data consisted of 11 items that identified gender, age, marital status, race, religion, level of education, occupation, and monthly income. There were questions on health-related characteristics, to identify previous operations, type of medical diagnosis, and types of surgery patients underwent.

PINPC-Form 2, Part 1 was used to assess demographic data. Assessment of nurse's demographic data consisted of eight items that identified gender, age, marital status, religion, and level of education. There were additional questions to identify if they had attended any post-basic courses and years of experience working in the surgical ward.

PINPC-Form 1 and PINPC-Form 2, Part 2 were used to assess patients' information needs in perioperative care as perceived by patients and nurses, respectively. The questionnaires consisted of 50 items. The questionnaire was organized by using five dimensions of perioperative information at three perioperative phases as a matrix in Table B1 (Appendix B). The 50 items were as follows:

1. Situational or procedural information, 22 items, 1-20, 46, and 47
2. Sensation-discomfort information, 11 items, 21-30, and 48
3. Patients' role information, 7 items 31-35, 49, and 50
4. Skills training information, 5 items, 36-40
5. Psychosocial support information 5 items, 41-45.

Each item was rated using a five-point Likert-type scale ranging from "1" (not needed), "2" (slightly needed), "3" (moderately needed), "4" (mostly needed), and "5" (extremely needed) to determine the level of needs for perioperative information.

The total score of PINPC-Form 1 and PINPC-Form 2, Part 2 questionnaires ranged from 50 to 250. The score interpretations were described using three levels - low, moderate, and high. This was obtained by dividing the score by 3. The scoring levels were categorized into: 1) low perception of patients' information needs, ranged from 50.00-116.67, 2) moderate perception of patients' information needs ranged from 116.68-183.34, and 3) high perception of patients' information needs ranged from 183.35-250.00. The higher scores indicate that patients and nurses perceive patients' information needs as being at the high level and the lower scores indicate that patients and nurses perceive patients' information needs as being at the low level.

In addition, two questions were asked: 1) time needed to provide the patients' information, and 2) one open-ended question to identify any unlisted information that patients may need. The question was: "Do you need any other information that we can provide you during your hospitalization? Please specify."

Validity of Instruments

Five experts in surgical nursing and surgery content validated both Form 1 and Form 2 of the PINPC. They were two experts from Malaysia, and three experts from Thailand (Appendix E). The two experts from Malaysia were a doctoral student in nursing and an orthopedic professor at the Orthopedics Department of the School of Medical Sciences, University Science Malaysia. The three experts from Thailand were a surgeon from the Department of Surgery, Faculty of Medicine, and two surgical nursing faculty

from the Faculty of Nursing, Prince of Songkla University. The instruments were evaluated for relevance regarding patients' information needs in perioperative care. The researcher then modified the contents based on the experts' recommendations.

Translation of Instruments

The original instruments were developed in the English language. The English version of the instrument that had been validated for content was directly translated into the Malay language by a bilingual English-Malay expert in Malaysia from the Centre for Languages and Translation, University Science Malaysia, Health Campus, Kelantan (Appendix F). The questionnaires were checked again by the researcher for correct translation of medical terminology commonly used in nursing. The Malay version was given to one of the nursing lecturers from the Nursing Program, School of Health Sciences, University Science Malaysia, Health Campus, Kelantan (Appendix F), for the final check of the questionnaires. The instruments were then used for data collection.

Reliability of Instruments

A pilot study was conducted to test the reliability of the instruments. Reliability of the PINPC-Form 1 and Form 2 Malay version were tested among 20 surgical patients and 20 surgical nurses, similar to the sample, to determine internal consistency reliability using Cronbach's alpha. The alpha coefficients of the total scale of Form 1 and Form 2 for patients and nurses were .93 and .95, respectively.

The alpha coefficients of the PINPC-Form 1 five dimensions (subscales) were .91, .85, .50, .78, and .63, and Form 2 were .91, .90, .76, .86, and .88 for situational or procedural information, sensation-discomfort information, patients' role information, skills training information and psychosocial support information, respectively. Alpha coefficients of both versions indicated that the instruments demonstrated good internal consistency except for two dimensions in Form 1.

Ethical Considerations

1. Approval from the Institutional Review Board of the Faculty of Nursing, Prince of Songkla University was obtained.

2. Permission to conduct this study was obtained from the Director of the Hospital of University Science Malaysia and the Head of Nursing Units.

3. Permission for data collection was obtained from the Heads of the Departments of Surgery, Orthopedics, and Obstetric and Gynecology involved in the study.

4. The researcher explained the purpose of the study to eligible subjects. Subjects who were willing to participate in the study gave oral or written consent (Appendix A). They received further explanation about the study. They were also informed that they had a right to stop or discontinue for any reason without fear of any negative consequences to the care provided to them during their hospitalization. Researcher used the coding system to identify the subject. Participants were assured of anonymity, confidentiality of all information given, and that the use of such information was only for the purpose of this study.

Data Collection Methods

Data were collected after permission was obtained from the Director of the Hospital of University Science Malaysia (HUSM), the Heads of Departments of Surgery, Orthopedics, and Obstetric and Gynecology, the Head of the HUSM Nursing Unit and the Head of surgical nursing, and the Head Nurses of selected wards. The researcher explained the objectives, design and duration of the study to the Head Nurses in the ten surgical wards.

Data collection procedures for patients

1. The researcher assessed the patients from the cases listed for surgery at the operating theater according to the operation schedule. The selected patients' name, age, ward, diagnosis, and type of operation were recorded.

2. The patients' medical records were reviewed in the respective wards to obtain the primary information in their health profile on the second postoperative day.

3. Patients who felt comfortable, conscious and alert were chosen, since most postoperative patients were ambulating at this period. Subjects who met the inclusion criteria were approached to participate and were informed about the objectives and purpose of the study by the researcher.

4. Patients who agreed to participate were then required to give verbal consent and the researcher explained how to complete the questionnaire.

5. To ensure there was no misunderstanding, the researcher explained the medical terms used in the questionnaire, especially about drainage tubes and intravenous infusion, using the common terms used in local dialect. Before the subjects completed the questionnaire, they were asked to answer the first question to check their understanding. At the subjects' request, they were given one day to complete the questionnaire.

6. Upon submission the researcher checked for completeness; if any item was missing, participants were asked to complete it.

Data collection procedures for nurses

On request, the ten coordinating nurses of the ten selected surgical wards helped with the distribution and collection of the nurses' questionnaires.

1. The questionnaire was given to the nurses with a cover letter. This was to ensure eligible nurses received the questionnaire.

2. Nurses were asked to complete the questionnaire within a week.

3. Incomplete returned questionnaires with unintentional missing data were then returned to the subjects for completion.

Data Analysis

Data were processed with SPSS (Statistical Package for Social Science) for Windows, version 11.5. The data were then analyzed using descriptive and inferential statistics for answering the three research questions.

Descriptive statistics were used for presenting the subject's demographic and health-related data, and level of patients' information needs at the three phases of perioperative care as perceived by patients and nurses. These were described in terms of frequency, percentage, mean, standard deviation, and range.

The assumptions of independent *t*-test were conducted initially to test for normality prior to running the parametric test. The independent *t*-test was used to test hypotheses concerning the perception of patients' information needs in perioperative care between patients and nurses caring for patients. The assumption of normality was met. The assumption of homogeneity of variance was checked via Levene's test for Equality of Variances. This assumption was also met. The results of the *t*-test were interpreted based on the assumption of equal variance.

For the question about when patients should receive information, data were described in terms of frequency and percentage. Simple content analysis was conducted with the qualitative data from the open-ended question.