CHAPTER 3

Methodology

Research Design

A descriptive study was designed to explore the intensive care experience among Intensive Care Unit survivors in three government hospital in Malaysia.

Population and Sample

The populations for this study were patients who discharged from intensive care unit in tertiary level, government hospitals in Malaysia. The ICU survivors came from adult ICU including general, medical, and surgical ICUs.

The samples for this study were ICU survivors who discharged from ICU of tertiary level, from three government hospitals; Hospital Tengku Ampuan Afzan (HTAA), Hospital Permaisuri Bainun (HRPB), and Hospital Taiping (HT). The survivors were discharged from adult ICU including general, medical, and surgical. The sample size for this study was determined by using the formula from Yamane (1973); n = N / [1 + N (e)2].

Where, N was population, n was sample size, and e was sampling error. For this study, N = approximately 220 patients discharge from the ICUs (HTAA = 50, HRPB = 70, HT = 100), e = .05 (95% confidence interval). The sample size need for this study was:

n = 220 / [1 + 220(.05)2]
n = 141.9 ≈ 142 samples

The sample size from three selected hospitals was determined by the proportion after look at the ratio of the ICU survivors in each hospital. According to proportion of sample size, the number of samples in each selected hospital was calculated as follows:

Table 1

Number of population and samples

Name of hospital	Population	Samples
HTAA	50	32
HRPB	70	47
HT	100	63
Total	220	142

The purposive sampling was used in this study and eligible samples for this study were those who had these inclusion criteria:

1. Discharged from ICU to step down unit or general wards for at least 24 hours to two weeks
2. Admitted to ICU at least 48 hours
3. Age from 18 to 64 years old
4. Discharged from ICU with full conscious level
5. Understand Malay language
6. Willing to participate

Exclusion criteria for this study was patient who readmitted to ICU within single time of hospitalization period

Research Setting

The study was conducted in tertiary level of three government hospitals in Malaysia: Hospital Tengku Ampuan Afzan, Hospital Taiping, and Hospital Permaisuri Bainun. These hospitals were randomly selected from the list of tertiary level, government hospital in Malaysia. The specific areas for this study were general Intensive Care Unit in the selected hospitals. The samples were the patients who discharged from the ICUs at least 24 hours and not more than one month, and still need further treatment and observation in step down unit or general wards. The data had been collected from July to August 2015.

Research Instruments

There were two questionnaires have been used in this study; demographic data form and intensive care experience questionnaire (ICEQ).

Demographic Data Form

It was designed by researcher to collect the data consists of 12 questions: age (three groups; young adult (18-35 years old), middle aged adult (36-55 years old), and older adult (56-64 years old), based on classification by Petry, 2002), sex, ethnicity, religion, education level, length of stay, medical diagnosis, type of admission, ventilator support, receiving sedation or analgesic, severity, and conscious level during their stay in ICU. The questions were in closed end form. Dichotomous question were used for sex, type of admission, and been ventilated or not, while the rest used multiple choice questions.

Intensive Care Experience Questionnaire (ICEQ)

ICEQ was developed by Rattray et al. (2004). Researcher obtained the permission to use the tool from the developer and was given the original version of ICEQ as reference. The set of questionnaire consists of four domains: awareness of surroundings (9 items), frightening experiences (6 items), recall of experiences (5 items), and satisfaction with care (4 items). The items resembled in close-ended question with 5-point Likert scale. There were two types of response: agreement and frequency statements, and each of it consists of 12 items. For the agreement statement, items were rated on a Likert scale ranging from: 1 = strongly disagree, 2 = disagree, 3 = neither, agree or disagree, 4 = agree, and 5 = strongly agree. For the frequency statement, items were rated on a Likert scale ranging from: 1 = never, 2 = rarely, 3 = some of the time, 4 = most of the time, and 5 = all of the time. The minimal and maximal scores for each domain: awareness of surroundings (9-45 scores), frightening experiences (6-30 scores), recall of experiences (5-25 scores), and satisfaction with care (4-20 scores). The more higher the scores indicate higher reported awareness toward surroundings, higher degree of frightening experiences, higher satisfaction with the care given by the staff, and can recall the memory concisely (Rattray et al., 2004). The total score for each domain were

categorized into two (2) levels: low and high. After retrieved the lowest and highest possible score for each domain, the range was calculated, then divided into two to conclude the low and high boundary for each level. The score according to level for each domain; awareness of surrounding (low: 9-26, high: 27-45), frightening experiences (low: 6-17, high: 18-30), recall of experiences (low: 5-14, high: 15-25), and satisfaction with care (low: 4-11, high: 12-20).

Additional ten (10) open-ended questions were included in this study to support the ICEQ by asked the detail of events in each domain. The number of questions by domain were; awareness of surrounding (2 questions), frightening experiences (3 questions), recall of experiences (3 questions), and satisfaction with care (2 questions).

Quality of Instrument

Validity of Instruments

The ICEQ had been validated by the developer of the instrument. However, for the additional questions, the questions in English version was submitted and reviewed by three experts (two Nursing Educators who experts in Qualitative research and one from health personnel who work in ICU) in the field (Lynn, 1986) to check for the objectivity of the questions. Then, the suggestions from the experts had been incorporated and minor correction was done. Thus, the final ten (10) open-ended questions were used in this study.

Reliability of Instruments

The pilot study for ICEQ was tested among ten (10) randomly selected ICU survivors with same criteria as the samples at the study setting. The Cronbach's alpha coefficient of domain awareness of surrounding, frightening experience, recall of experience, and satisfaction with care were .914, .821, .797, .841, respectively.

Translation Process. The set of ICEQ had been back translated by the researcher, thesis advisors and a person who can speak bi-language by follow the steps: firstly, from English version to Malay version; secondly, from Malay version to English version; and lastly, compared the English version from the original with translated one

(Brislin, Lonner, & Thorndike, 1973). There was no significant discrepancy of both English versions, hence, ICEQ in Malay version was used for this study. While, the additional questions were developed in two languages: English and Malay. Both versions had been checked thoroughly by the persons who able to speak and understand both languages.

Human Subjects Protection

Before entering the research environment and conduct the study, approval had taken from the Research Ethics Committee, Faculty of Nursing, Chiang Mai University, and National Medical Research Registration Malaysia, and selected hospitals. All the samples were informed about the purpose and method of this study. Written consent was obtained from samples, and assured that their information was kept private and confidential. Researcher also informed the samples that the analyzed result had come out without mentioning their names and were presented as a group. Samples names were changed into codes which used during data analysis and statement of the final result. Samples also had the authority to access their personal information and data if they want too, by contacting the researcher. Samples were informed that participation in the study were voluntary and they have right to refuse at any time as they want to, and was assured that their right to get the continuation of care, medical services or any kind of services during hospitalization period were not affected. For the publication of the final result, it followed the publication policy to keep the confidentiality of the samples. The archival medical records and study data was stored in the sealed envelope and will be kept at least for five years before it will be destroyed.

Data Collection Procedures

In this study, method of data collection was employed self-reported questionnaires. The flows of data collection were:

1. Research proposal was submitted and reviewed by Research Ethics Committee, Faculty of Nursing, Chiang Mai University.

2. Approval was obtained from the Research Ethics Committee, and the letter from the dean of Faculty of Nursing had been issued. The official documents related to

research proposal was submitted to the National Medical Research Registration (NMRR), Malaysia, before conducting the study.

3. After getting approval from NMRR, explanation about the study was submitted to the directors of the selected hospitals, head of Intensive Care departments, head of nursing departments, and sisters in charged. Sisters in the selected area were informed regarding the presence of researcher from time to time to collect the data from the samples.

4. Researcher used research coordinators in order to collect the data from the selected hospitals. The researcher recruited the research coordinators who willing to participate in this study since it involved with their own time for collecting data in given period of time. The briefing of this study was given beforehand. The researcher trained the research coordinators to collect the data, so that the method of collecting the data was same for all three hospitals. Researcher recruited one intensive care nurse in two of three selected hospitals as research coordinators, and they were trained on:

4.1 Eligibility criteria of the samples. The research coordinators looked at the possible participants on the admission / discharge book and patient's medical record in ICU. After jot down the data provided in the book, research coordinators followed the possible samples in the ward where they were been transferred, and asked for their willingness to participate in this study.

4.2 Explaining and obtaining informed consent. Verbally explanation was given face to face and sample was assured about their privacy and confidential of the information provided which only used for the purpose of this study. After gained the verbal consent to participate in this study, research coordinators distributed three documents including information sheet, informed consent, and two set of questionnaires. The documents were given directly to the samples, and the consent was obtained exactly after samples read and understand the information sheet. However, samples were given their own time to complete the questions if they want to, but not exceed more than one day.

4.3 Reading the questions directly without giving any further explanation to prevent bias. For the samples who having difficulty on writing, the research coordinators read the questions and tick or write the answer given by the samples. No

suggestions of the possible answer were given to the samples of this study. The research coordinators only wrote the answer given by the samples.

4.4 Checking the completeness of the questionnaire before return it to the researcher. Research coordinators thoroughly checked the answered questions, and asked the samples to complete the section if they were missed the questions.

5. The samples were purposively selected based on medical record and inclusion criteria. The data about intensive care experiences were collected while they were still in the hospital, but after discharged from the ICU.

6. Obtained of inform consent and distribution of Malay version questionnaires were done by researcher (data in HRPB) or research coordinators (data in HTAA and HT). Researcher trained the research coordinators about the process of collecting data in order to achieve correct data. There were two set of questionnaire including demographic data (12 items), and ICEQ (24 items) with additional of 10 open-ended questions.

7. The questionnaires were given to the samples and they were given one whole day or less before returned it to avoid missing of data and to ensure that every single item in ICEQ and demographic data were completely answered.

8. Data collection was terminated after achieved 142 samples and the returned rate of the questionnaire was 100% without losing any data.

Data Analysis Procedures

Data entry was in Microsoft Excel file and had been checked thoroughly for data-entry errors. Data was analyzed by using Statistical Packages and thoroughly analyzed according to:

1. Demographic data was analyzed by using descriptive statistic. The percentages and frequencies of the variables had been calculated.

2. Intensive care experience was analyzed by using descriptive statistical analysis to look for the percentages, frequencies, mean and standard deviation of each domain. The data were categorized into two (2) levels: low and high, while the open ended questions were analyzed by using the content analysis.