

CHAPTER III

RESEARCH METHODOLOGY

Research Design

This research was a cross – sectional descriptive study.

Target Population

There were two groups of target population :-

1. The customers define as the persons who come for an operational and anesthetic services is the province of Nakhon Si Thammarat.
2. The providers define as the chief and the mainstay in taking risk incidence. They consist of physicians, anesthesiologists , nurse anesthetist and surgical nurse who work together in the operating room in Maharaj Nakhon Si Thammarat Hospital, Nakhon Si Thammarat Province.

Studied Population

There were two groups of studied population :

1. The customers define as persons who undergo an operation and were given anesthesia at the anesthetic unit in Maharaj Nakhon Si Thammarat Hospital. The average number were 12,328 cases per year.(The data were taken from the anesthetic department in Maharaj Nakhon Si Thammara Hospital on September 30, 2002)

2. The providers define as the chief and the mainstays in taking risk incidence who become a teamwork in the operating room at Maharaj Nakhon Si Thammarat Hospital. It consist of physician ,anesthesiologist, nurse anesthetist and surgical nurse.

Sample Population

There were two groups of sample population

1. The customers define as the persons who turned in for a surgery and was given anesthesia at the anesthetic department in Maharaj Nakhon Si Thammarat Hospital. Four hundred people were randomly chosen by the approach of purposive sampling.
2. The providers define as the leader and the mainstays in taking risks incidence who become a teamwork in the operating room in Maharaj Nakhon Si Thammarat Hospital , who were chosen by the simple sampling in each occupational group , which consist of :

The chief anesthesiologist	1	person
The mainstay of the general surgeon	1	person
The mainstay of the orthopedist	1	person
The chief of obstetrician	1	person
The chief of the E E N T specialist	1	person
The chief of the nurse anesthetist	1	person
The chief of the surgical nurse	1	person
Total	7	person

Sample Size

1. The customers mean the person who turned in for an operation and was given anesthesia at the anesthetic department at Maharaj Nakhon Si Thammarat Hospital with the average of 12 , 328 people per year (2002). The sample size was calculated by means of proportion estimate with Finite Population Formula (Lemeshow , S , Hosmer , W. D. Jr. and Lawanga , K . S . 1990).

$$n = \frac{N Z^2 pq}{D^2 (N - 1) + Z^2 pq}$$

- Note :
- n = The size of the sample group
 - N = The population size
 - Z = 1.96 the means of the confidence at 95 % CI
 - D = The possible error in random sampling fixed at 0.05

The customers' satisfaction study toward the risks in anesthetic service was concluded in two mean groups , which were extreme approval , and disapproval. The average opinion was approval , so the researcher had regulated the following formula :

So p = the proportion of the opinions equals 0.5 , 50

$$Q = (1 - p) = (1 - 0.5) = 0.5$$

$$n = \frac{(12 , 328) (1.96)^2 (0.5) (0.5)}{(0.05)^2 (12 , 328 - 1) + (1.96) (0.5) (0.5)}$$

$$= 372$$

The lowest calculation of the group size were 327 cases

The researcher of this study had used a 400 cases group size.

2. The providers mean the leader and the mainstays in providing the risk incidence , who work together in the anesthetic department in Maharaj Nakhon Si Thammarat Hospital , totaling 7 person

Sampling Techniques

The aspect of the customers

The customers were randomly chosen by means of purposing sampling by considering the following criteria :-

1. The customers with the age of 20 – 65 years being divided into 3 age groups (Srireung Kaewkangsadam , 1993) :-
 - 1.1 An early age adult group between the age of 20 – 35 years
 - 1.2 A middle age adult group between the age of 36 – 50 years.
 - 1.3 A late age adult group between the age of 51 – 65 years.
2. In discriminating the sexes of the patients who were admitted at the four departments, which are the general surgical department , orthopedic department , obstetric department , and EENT
3. The conscious customers bared on American Society of Anesthesiologist (ASA) Physical Status 1 ,2, and 3 , who were very aware of time , place , and people.
4. The customers who have undergone the operation and have been given a general anesthesia and spinal block
5. The customers who were willing to answer the questions by interviewing.

Research Instruments

The instruments used in this research was interviewing. The researcher had come up with the concept and the theory of risk of the hospital accreditation and studying from the textbooks , documents and researches involved as follows :

The Aspect of The customers was conducted by interviewing.

It was divided into 5 parts :

Part I :

The sociodemographic features of the customers and utilization of anesthetic service , such as the time of the service , classifying the risks based on American Society of anesthesiologists (ASA) physical status , the urgency of the operation , the admit at the unit , the number of times of being given anesthesia , the history of drinking alcohol and smoking , the operation- bearing disease and fear.

Part II :

Evaluation form was for checking the opinion of the customers toward the safety from taking risk in the anesthetic services. The questionnaire was a check list based on the rating scale and divided into five alternative : having the effect on most safety , much safety , moderate safety , little safety , and having no effect on safety. The respondents have to choose only one alternative.

Rating scale evaluation form consist of two section :-

1. It was an evaluation form concerning the activity of the anesthetic service
2. It consisted of five levels of comparative characteristics.

The researcher of this study had applied the opinion evaluation form by using Likert 's method , which was considered of be the most thorough , the easiest and most time – saving.

The respondents could expose their approve or disapprove opinions toward the safety from the risks incidence . There were five alternatives : having the effect on the most safety , much safety , moderate safety , little safety and having no effect on the safety . The questionnaires were made up to be characterized as an activity for an anesthetic services carried out to being about the safety in administering anesthesia.

Answering Scale

- Having the affect on the most safety means the opinions to the anesthetic services which has the least risk.
- Having the effect on much safety means the opinions to the anesthetic services which has a little risk.
- Having the effect on moderate safety means the opinions to the anesthetic services which a moderate risk
- Having the effect on a little safety means the opinions to the anesthetic services which has the most risk.

- Having no effect on safety means the opinions to the opinions to the anesthetic services which has the most risk

Scoring Scale

Have the effect on the most safety	=	5	points
Have the effect on the much safety	=	4	points
Have the effect on the moderate safety	=	3	points
Have the effect on the little safety	=	2	points
Have no effect on safety	=	1	point

Interpreting Average Scoring Scale

The researcher of this study had considered the total scores of every item. If the score was high , it indicated that the opinions toward the safety was high , and if the total score was low , it means that the opinions to the effect on the safety was low .There were three levels of judging scale, which were little, moderate and most :

Average scoring 1.00 - 2.33 points means having an opinions to a little safety.

Average scoring 2.34 -3.66 points means having an opinions to a moderate safety.

Average scoring 3.67- 5.00 points means having are opinions to the most safety.

Interpreting each aspect of the opinions was done by adding up the total raw score of each aspect and divided by the number of items of each aspect and The average score was compared with the initial interpreted average scoring scale.

Part III :

Evaluation from to assess the customers' satisfaction toward the anesthetic services was made up as a multiple choice with five levels of rating scale, which were extremely satisfactory, very satisfactory, moderately satisfactory, little satisfactory and not satisfactory. The questionnaire were made up to be characteristically positive concerning the anesthetic services system, the personnel and the promptness.

Answering Scale

- Not satisfactory means having the least satisfaction toward the services.
- Little satisfactory means having little satisfaction toward the services.
- Moderately satisfactory means having a moderate satisfaction toward the services.
- Very satisfactory means having very much satisfaction toward the services.
- Extremely satisfactory means having the most satisfaction toward the services.

Scoring Scale : Each evaluation from was considered as follows :

Not satisfactory	=	1	point
Little satisfactory	=	2	points
Moderately satisfactory	=	3	points
Very satisfactory	=	4	points
Extremely satisfactory	=	5	points

Interpreting Average Scoring Scale

The researcher of the study had considered the total scores of every question and calculated the average means.

If the average score was high , it means that the respondent felt the most satisfactory , and if the average score was low , it means that the respondent felt the least satisfactory . There were there levels of judging scales follows :

Average score 1.00 - 2.33 means having little satisfaction

Average score 2.34 - 3.66 means having moderate satisfaction

Average score 3.67 - 4.49 means having most satisfaction

Interpreting each aspect of the opinions was done by adding up the total raw score of each aspect and divided by the number of items of each aspect. The average score was compared with the initial interpreted average scoring scale.

Part IV : The evaluation and comments were characterized as a multiple choice and a blank - filling form.

Part V : The evaluation of the problem and the complication after the operation and being given anesthesia was done by checking from the anesthetic record of the staff who post anesthetic visit.

The Providers' Aspect

The chief and the mainstay of the providers were interviewed about the personal data with the guideline of the multiple choice. The opinion toward the risk management was in the form of subjective questions , which were as follows :-

1. The risk happening to the customers
2. The risk management policy
3. The seminars held for the health care staff
4. Risk incidence report
5. Action to manage the risk
6. A scheme to develop the service quality

Testing the Accuracy of the Questionnaire

1. Content validity would be done after the questionnaires have been completed and edited by the researcher ' s advisor. After that , it would be checked by five scholars (Their names were inscribed in the appendix) to see the coverage of the content , the relevance of the objective, the language connotation , the comment on revision of some weak points. The approval was considered by the eighty percentage on the basis of the relevance of the objectives , the validity and the acknowledgement of the scholars.
2. Reliability The approved questionnaire would be done by the trial group of 30 people who had quite the same characteristics as the chosen group. The weak points would be corrected before the questionnaires were done by the real group. The confidence and the reliability of the questionnaire were

calculated by Cronbach's alpha coefficient method. (Buntham Kitpreedaborisut, 2531)

After the questionnaires were pre-tested by the sample group, they were tested again to find the reliability and validity. The result of validity analysis means as follows:-

The Validity of the Instruments

Instruments	Number of items	Trial assessment (N = 30)
- An evaluation form to check the opinion toward the safety from the risks incidence in anesthetic services	20	0.9251
- A evaluation form to check the satisfaction services	18	0.8816

Data Collection

1. The researcher had asked for the permission from the director of Maharaj Nakhon Si Thammarat Hospital to do research on the customers and providers.
2. The researcher had visited the chief nurse and the ward chief of the general surgical department, orthopedic department , obstetric-gynecology department and EENT department to generalize the objectives of this research and to ask for the co-operation in collecting the data from the customers

3. The researcher had held a conference for data collecting assistants to provide them with the objective and the way how to collect the data.
4. The researcher had chosen the sample group from the customers who came for an operation and were given some specific anesthesia.
5. The researcher had already interviewed 400 customers by using the approved questionnaires.
6. The researcher had met the surgeons , anesthesiologist , nurse anesthetist and the surgical nurse , who were the leaders and mainstay of the risks incidence in order to generalize the objectives of this research and ask for the co – operation in interviewing by making an appointment in advance.
7. The researcher collected the data from June 15 – July 15 , 2003.
8. The researcher had collected and checked 400 copies of the responded questionnaires , and these data had been statistically analyzed by a computer program.

Data Analysis

The customers' Aspect

1. Making a code manual.
2. Changing the data to a code relevant to a code manual , making a data file and recording the data in that file.
3. Checking the accuracy of the data in the file.
4. Analyzing the data by using SPSS computer program.

The Representation of Analyzing Data

The Customers' Aspect

1. The private data of the operational customers who were given anesthesia were done by using statistics , percentage , frequency generalization , average means and standard deviation.
2. The level of the opinion and satisfaction scores of the operational customers who were given anesthesia was dependent on each aspect by using the percentage , frequency generalization and average means.
3. The relationship between the satisfaction of the customers together with the sociodemographic features and the utilization of anesthesia service was the qualified data with two variations by using the Chi - Square test.
4. The relationship between the satisfaction score in the process of anesthesia together with the age and the income of the customers was a quality data with two variations , and when the scatter diagram was constructed , it was found to be unusual, so it was analyzed by Spearman Correlation Coefficient.
5. The comments were constructed by using the statistic percentage and frequency generalization.

The Providers' Aspect

The subjective questions of satisfaction were analyzed by means of description. After the researcher had already analyzed the customers' data, the conclusion of the result was gathered together as the whole opinion of the customers' risk incidence, and of the providers ' opinion to the risk management in anesthetic management in Maharaj Nakhon Si Thammarat Hospital.