

## CHAPTER III

### RESEARCH METHODOLOGY

#### RESEARCH DESIGN

This study design is a case-control study (unmatched case-control study) in order to study factors influencing Brain Drain. There are two groups one of which is nurses who work in the private sector for the "case group" compared with another group of nurses who work in the public sector, considered the "control group".

#### SAMPLE SPECIFICATION

##### Target population

Target population of this study are nurses who graduated with a bachelor degree in nursing from 1988 to 1992.

##### Sample Population

Sample is a section of the population drawn from the target population. The criteria for selecting sample population in this study are as followed.

##### Eligibility Criteria

The sample has been divided in to 2 groups.

##### Inclusion Criteria

Case group: The samples are selected from the nurses who have:

1. Received a bachelor degree in nursing from 1988 to 1992.
2. Worked in the public sector for at least 6 months.
3. Shifted from the public sector to the private sector not for more than 2 years.

Control group : The samples are selected from the nurses who have:

1. Received a bachelor degree in nursing from 1988 to 1992.
2. Been working in the public sector for at least 6 months.

Both groups of nurses are selected from the public sector and the private sector by ratio 1:1 for this study. The conditions of both case and control groups are almost the same such as age, experience and year of graduation.

### Sample size

The size of the sample depends on the size and nature of the population and the type of questions asked. The number of this study unit must be sufficient to make the study reliable. This study is designed to answer the primary question which is a factor influencing brain drain, the sample size can be calculated by the following formula.

$$n = \frac{2 \bar{p} \bar{q} (Z_{\alpha} + Z_{\beta})^2}{(P_1 - P_0)^2}$$

Po = Relative frequency (Po=7.5%)

R = Relative risk corresponding to the smallest increase or decrease in the risk of interest (R=3)

$$P_1 = P_0 R / [1 + P_0 (R-1)]$$

$$\bar{P} = 1/2 (P_1 + P_0), \bar{q} = 1 - \bar{P}$$

$$q_1 = 1 - P_1, q_0 = 1 - P_0$$

$$n = 2(0.15)(0.9)(1.96+1.28) / (0.21-0.75)$$

$$= 167 \text{ cases.}$$

### SAMPLE TECHNIQUE

To avoid selection bias in choosing location for study, researcher should assume that "case" and "control" groups were the same group. Hospitals participated in this study were selected by systematic random sampling technique, and 20 hospitals carried out in this research. After having randomly selected research locations, professional nurse were selected by purposive random sampling technique. This study was used with professional nurses graduated from 1988 to 1992. Nurses in public hospitals were selected to study, 20 cases per hospital, whereas in private hospitals were selected all the remaining cases which were relevant to criteria.

### Outcome measurement

Independent Variable :

- Marital status
- Spouse's occupation

- Family income
- Number of dependents
- Convenient of travelling to work
- Salary and compensation
- Fringe benefit
- Working condition
- Work itself
- Interpersonal relation
- Advancement opportunity
- Supervision
- Policy and administration

Dependent Variable :

- Brain Drain

### INSTRUMENTATION

One way of obtaining data is simply to ask questions. The instrument will be used in this study is a self-administered questionnaire which covers the objectives for this study. After review of literatures, the questionnaire was developed to examine the factors influencing Brain Drain in major areas. It is divided into three parts.

PART I : Inquiry of demographic data with close-end questions which consist of 8 questions.

PART II : Inquiry of educational background and work performance with open-end questions which consist of 8 questions.

PART III : Inquiry of job satisfaction based on Herzberg's Theory with rating scale questions which consist of 53 questions and 4 questions were open-end questions.

The criteria of rating points on job satisfaction

The questionnaire also included a rating scale of 5 levels as shown below.

1.	Strong dissatisfaction	=	1
2.	Mild dissatisfaction	=	2
3.	Neither dissatisfaction nor satisfaction	=	3
4.	Mild satisfaction	=	4
5.	Strong satisfaction	=	5

For questions of job satisfaction, the data was summed up into a total score for each factor. The cut-off point was determined by the middle point of the total score in each factor. Divided into two groups, were satisfaction, and dissatisfaction groups. If a nurses's total score in each factor was to the equal cut off point the sample was not considered for analysis.

VALIDITY AND RELIABILITY :

For this study, the questionnaire was created by researcher. Procedure for the instrument testing is as follow:

1. Content Validity : 3 experts who have experience in nursing, psychology and management, were ask to comment on the clarity and completeness of the questionnaire.
2. Try Out : In this study, sample was carried out using a model similar to that used to study population. The testing was done with 20 nurses at Chulalongkorn Hospital and also 20 nurses at Sikharin Hospital. The purpose was to ensure that, appropriatness of the language, the clarity of content, and the sequency of the questions.
3. Discrimination Analysis : To find out discrimination ability by T-Test, to considered value of 2.00 or higher is generally regarded as satisfactory.
4. Reliability : There are many techniques to measure the reliability, the technique considered appropriate for this study was the internal consistency reliability. By Cronbach's Alpha coefficient. The result of reliability was 0.95 for the aspect of job satisfaction.

#### DATA COLLECTION

1. Request and receipt of a letter from the faculty of medicine at Chulalongkorn University, this was sent for the attention of the directors of 20 hospitals, before data collection was permissible.
2. Contact with the head of nurses for the distribution of a self-administered questionnaire to a sample nurses

population. The questionnaire was to be returned within one week and thereafter the researcher would have to collect any remaining questionnaire within 2 weeks. Therefore, 9 weeks was required for data collection.

### DATA ANALYSIS

After completing the collection of data using the coding system, the coded data was entered in to the Dbase Programme (dBase IV/Plus) and data analysis by SPSS + PC Programme (Statistic package for the social science) and Epi-Info statistic programme.

Statistics used in this study as follows :

1. The statistics used for demographic data was summarized into percentages.
2. The statistics used for test hypothesis was the Chi-Square test.
3. Odd ratio and 95% CI of OR was calculated to determine the factors association Brain Drain.